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T H E L I N G U I S T I C D O C T R I N E O F
T H O M A S A Q U I N A S
A N D I T S R E L E V A N C E T O M O D E R N
L I N G U I S T S I C S

THESIS SUBMITTED FOR THE PH.D DEGREE OF
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P R E F A C E

This thesis compares the traditional logico-philosophic approach to language as found in the writings of Thomas Aquinas, with contemporary scientific linguistics, for the first time. To date, only two authors, F. Manthey and V. Warnach, have dealt with Aquinas' linguistic doctrine in detail. Their works are cited in the bibliography. Neither of these authors is acquainted with scientific linguistics, and neither evaluates or criticizes Aquinas' work.

By giving the historical background of the questions about language which Aquinas discussed, and by putting his views into the complex of philosophic, psychological, logical, grammatical and scientific work which was their setting, some of the criteria still implicit in traditional grammar become clearer. By setting out the difference between descriptive and explanatory categories as Aquinas saw it, some of the methodological differences between traditional grammar and scientific linguistics, as well as the possibility of their synthesis, emerge.

This study should be of interest to linguists for the following reasons: (a) it is clear that the findings of scientific linguistics are readily assimilable into Aquinas' synthesis; (b) Aquinas' principles supply a justification for the autonomy of linguistic science; (c) Aquinas' position is mid-way between the "God's Truth" and "Hocus-pocus" attitudes toward linguistic description, and (d) a knowledge of Aquinas' work is helpful in clarifying some problems of interest to linguists, such as the status of linguistic abstractions and the treatment of meaning.

LIST OF ABBREVIATIONS

De An	:	"S. Thomae Aquinatis In Aristotelis Librum De Anima Commentarium"
De Div Nom	:	"S. Thomae Aquinatis in Librum Beati Dionysii De Divinis Nominibus Expositio"
In Eth	:	"S. Thomae Aquinatis In Decem Libros Ethicorum ad Nichomachum Aristotelis Expositio"
In Met	:	"S. Thomae Aquinatis in Duodecim Libros Metaphysicorum Aristotelis Expositio"
In Phys	:	"S. Thomae Aquinatis in Octo Libros Physicorum Aristotelis Expositio"
In Pol	:	"S. Thomae Aquinatis in Libros Aristotelis Politicorum Expositio"
PH	:	"S. Thomae Aquinatis in Libros Peri Hermeneias...Expositio"
Post An	:	"S. Thomae Aquinatis in Aristotelis Libros Peri Hermeneias et Posteriorum Analyticorum Expositio."
PL	:	"Commentarium in IV Libros Sententiarum Petri Lombardi"
SCG	:	"Divi Tomae Aquinatis Summae Contra Gentiles"
ST	:	"S. Thomae Aquinatis Summa Theologiae"

CHAPTER I

Language is a tool with many uses. While admitting the legitimacy and need of as many analyses as there are uses, there is a clear advantage in having an analysis which prescinds from any particular use. The history of language-study in the West falls into several periods where one or another particular use of language has dominated its study, and a brief review of them shows how advance has been made toward the ideal of studying language in and for itself.

Analysis requires the description of types of units and their combinatory possibilities. In language, the description of units is generally called the study of Morphology, the statement of their combinatory possibilities, Syntax or Grammar. Unlike other obhects of study, language requires consideration of a third relation, Semantics, since linguistic units and constructions may have some relationship to non-linguistic items and systems. Morphological, syntactic and semantic relationships are the basic criteria of linguistic description.

Because linguistic units and constructions may have some relationship to the non-linguistic, three possibilities arise in deciding what will be taken as relevant to the description of language. (1) Linguistic units and constructions should be defined exclusively in terms of the non-linguistic, (semantically); (2) linguistic units and constructions should be defined both in terms of the non-linguistic (semantically) and autonymously (morphologically and syntactically); (3) linguistic units and constructions should only be defined autonymously (morphologically and syntactically).

Choosing one of these methods might involve some presuppositions about the relationship of linguistic and non-linguistic systems. They may be considered (a) systematically parallel (b) partically parallel and partially different (c) completely

unrelated. On the basis of the first presupposition, any of the three methods can be used, since they would give results reducible to each other. From the second point of view, the first and third methods are incomplete by themselves, and the second will be adopted. The third method is the only sensible approach on the third presupposition, but the same method would also be used, if one deliberately sets aside presuppositions of this sort, since whatever parallels there are emerge in the course of the description.

Analyses of language have been made at various times for quite different purposes. In subsequent studies, distinctions, definitions and categories were often adopted without sufficient consideration of their origin and applicability to new problems. This ambiguity is often concealed by identical terminology in studies so different that confusion is bound to result. Use of a single term encourages the view that a single factor is being dealt with, when it may in fact have to be distinguished into several constituents, or studied from successive points of view. Notions such as "case", "subject", "Tense", and even "language" and "meaning" are all of this sort.

In this, the history of language study in the West shows features common to other sciences. One starts with an initial problem, and the solution proposed for this gives rise to other, more fundamental problems and theories. But ambiguities inherited unresolved from earlier stages of investigation weaken descriptive accuracy and explanatory power. As a consequence, expalanatory mechanism becomes unwieldy, and while it may provide roughly workable solutions, which are true enough, they become needlessly complex, confusing things which should be dealt with separately.

At the same time, it is possible to attain to a more accurate description of the elements involved in a problem dealt with clumsily in the past, and produce explanations demonstrably superior to those once offered, without meeting the precise problem when led to the original formulation. The overthrow of the Phlogiston Theory illustrates this:[1] impressed by the heat released in combustion, Priestly defended the existence of an improbable element, phlogiston. Lavoissier fixed on some experimental data provided by Priestly, and called attention to the gain in weight in the calcination of mercury. This was quite neatly accounted for in terms of oxidation, but while the acceptance of Oxygen was a great advance for chemistry, it diverted attention from one of the original problems, the rise in temperature which phlogiston accounted for, and this probably delayed the development of thermodynamics until the 19th century.

Aquinas' approach to language differs in purpose,method and results from those of modern scientific linguistics. As a consequence, it is important not only to know <u>what</u> he said but <u>why</u> he said it. Also, the common terminology involved has to be followed carefully, for often there is nothing common to Aquinas' position and those of modern thinkers, even to other medieval thinkers, but the words. Medieval philosophy showed as great a diversity as modern, though common technical language often conceals this.

While a considerable span of time separates Aquinas from the Ancients, many of the problems they dealt with are raised again in his work, since the collapse of the Roman Empire and the ensuing Dark Ages cut Europe off culturally from its past. Just before Aquinas' time, the writings of Aristotle which had long been unknown in the West were recovered, and avidly studied. So it will be useful to sketch the principal contributions of

the Greeks to the study of language, and then give a picture of the intellectual atmosphere of Paris at the time Aquinas was active there.

This period of the 13th century was one of extraordinary activity, a time when the foundations of modern scientific theory were being laid, through the commentaries on Aristotle's treatise on scientific method, the Posterior Analytics. The ideal of scientific proof was essentially the same then as now; the great difference was in the restricted use of mathematics and technological inferiority. Instead of mechanical and empirical testing methods, the medievals were largely restricted to imaginary constructs. Aquinas' psychological theory illustrates this: it represents a physical hypothesis to account for the facts of conceptualisation, judging and reasoning as Aquinas saw them.

What started as relatively simple problems in logic or grammar, are set in Aquinas' time into the whole interlocking intellectual scheme, which considered the theological, philosophical, logical, psychological and grammatical aspects of language in use. Some of the ambiguities inherent in former analyses remained unresolved and their effect will be pointed out.

ANCIENT ANALYSIS

Pre-Socratic Analysis

The initial problem which the Greeks took up about language concerned Rhetoric.[1] In the 5th century B.C., the Sophiste tried to establish a method for convincing others, through their observation of successful orators. Laying great stress on measurements of all kind, they distinguished four sentence-types (the question, prayer, statement and command) and some features of their composition and ordering. Their pupils were trained to use "rounded sentences", balanced to syllable-counts, to use successive syllables of similar sound (assonance) and the contrast of opposing word and sentence types (antithesis). In discussing opposed word types, attention was drawn to apparent synonyms. All of this resulted in a practical, though not theoretically formulated, system of rhetoric. The criteria were basically semantic, and little attention was given to morphology or syntax.

PLATO

Zeno developed a destructive method of dialectic, illustrated in his famous paradoxes, by which the opinions of others could be logically reduced to absurdity. Although he used this method consciously and successfully, he never formulated rules for it. To Plato[2] goes the credit of conceiving the possibility of a formal logic.

What probably led him to see the need and possibility of such a task was the success of Zeno's dialectic and the discussion of synonyms among the Sophists, which gave rise to the Nature vs. Convention controversy (physis-nomes). Some held that words had a natural correspondence to the things they named. If this were the case, there could by no synonyms, since there could be but one name for one thing. Others held that any word at all could mean anything at all, as long as the speakers agreed to use it in that fashion.

The level of knowledge about language to which the Greeks had attained can be seen in Plato's dialogue "Kratylos", where it

is discussed. Those favoring the natural correspondence of words to things postulated an original name-giver, who knew the nature of things to be named and did so accordingly. Thus they gave the name of the sea-god Poseidon, which they said was analysable into ποσὶ δεσμόν, which would be "a barrier to the feet" as though the first namegiver had seen that the sea impedes the feet of one walking through it.

As an example of an unanalyzable word, they gave the Greek ῥέω for "flow". In the vibrating articulation of the first letter rho, they found a suitable representation of a flowing movement. It is not clear which side of this controversy Plato took, but in seeking to formulate ideal laws of thought, he made several distinctions about language that mark an advance over the Sophists.

He conceived of thought as a dialogue with oneself, and of language as the manifestation of thought through the means of nouns and verbs which, as it were, mirrored the speakers' ideas in the stream of air passing through the mouth. He defined the sentence as a string of words in which verbs are mingled with nouns. Verbs were defined as the names of actions and nouns as the marks set upon those who did the actions.

In asking if every word can be joined to every other word, he developed the technique of the Division to decide the problem. Taking a generic word like "animal", one can divide it into "rational" and "non-rational", and see that only "rational animal" can be joined to "man" and so on. This technique was to give the rule for deciding which words were sociable, since the division could be carried on indefinitely. Plato's entire philosophic position is too subtle to summarize without injustice, but the reason he would assign for the sociability of some words and the dissociability of others was the sociability of Ideas, by reason of which some properties must necessarily be attributed to certain things; our own ideas are somehow remembrances of the eternal and unchanging Ideas, and things are their shadows. We match them in true statements.

Plato's doctrine is an evident advance over the Sophistic. Although his criteria are still basically semantic, he has an inkling of syntactic rules, but nothing on morphology. Besides this, he has a subtle and profound metaphysical theory to back it all up.

ARISTOTLE

Plato's greatest pupil was Aristotle.[1] He had the advantage of being familiar with the work of the Sophists and of Plato, but was dissatisfied with Plato's conclusions, and believed he saw both further problems and better alternatives. His problem was fundamentally three-fold, corresponding to the challenge of Zeno's destructive dialectic, Plato's explanation of necessary facts through the Division, and the evident existence of contingent facts.

To deal with these problems, he invented a system of formal logic, and in the syllogism, showed how through their arrangement alone, the quantity and quality of deductions could be established, independently of the meaning of the terms. He distinguished three types of syllogisms, the Demonstrative or Assertoric, the Sophistic or fallacious, and the Dialectic or probable. In addition to these he developed a modal logic; while the former is essentially a logic of predicates, the latter is propositional, and with them, he could now handle both necessary and contingent facts.

In developing this system, he made several important distinctions about linguistic units: besides the noun and verb, defined by Plato, he distinguished σύνδεσμοι, or "linking words" or "conjunctions", words which, unlike the noun and verb, did not refer to anything, but linked or determined words that did. He also distinguished spoken, written and "mental" language:

> "Spoken sounds are symbols of the affections or impressions of the soul. Written words are symbols of spoken words. But just as writing is different for races of men, so too are the sounds of speech. But the mental affections themselves, of which words are primarily the symbols, are the same for all men, as are also the objects of which these affections are the likenesses."[2]

While there is much to object to in Aristotle's definitions and expositions, it is clear that his work represents a fantastic

advance over the Sophists, and is superior to Plato's. The Sophists had distinguished, but did not define sentence-types or sentence, and synonomous words from those which are not. Aristotle defines language as sounds which are the conventional sign of thought, distinguishes it from 'naturally' meaningful sounds like groans and animal cries. He defines the sentence and distinguishes the propositional from other types, has an explanation of the relation of writing to speech, speech to thought and thought to things. Words are distinguished into those which are univocal or ambiguous, and ambiguous words into those which are accidentally and systematically ambiguous. The distinctions he made between noun, verb and σύνδεσμοι are basically semantic or logical, although the "conjunctions" entail a syntactic distinction.

Aristotle did not distinguish logic and grammar, so his definitions can be read both ways. From a modern point of view, one would say that his attention was almost exclusively focused on logical considerations. But there is a further distinction he made which occasioned a closer examination of linguistic morphology. That is the notion of case, which he called πτῶσις.

Aristotle's logic dealt extensively with a logic of predicates, with propositions usually couched in what we would call a nominative form of the noun, plus the verb <u>to be</u> and predicate. Since forms other than the nominative linked with the copula such as "of Socrates is" do not form propositions which are usefully considered true or false, Aristotle identified the nominative with <u>the</u> noun, and termed the other forms πτώσεις or cases of the noun. For him, this was a purely logical distinction, but it called attention to the elements which were the same and different in the various forms a word could take. While this distinction is best explained in terms of linguistic morphology, Aristotle did not explicitate that.

The wealth of Aristotle's distinctions were not without a consequent ambiguity. The precise status of the proposition re-

mains unclear: from different places in his writings, one can conclude that "propositions" represent linguistic forms, or thoughts in the mind, or objective structures being thought about.[1] The notiion of case, in particular, confuses semantic and morphological distinctions. This ambiguity was clarified by the work of the Stoic logicians.

THE STOICS

After the death of Aristotle, the control of his Lyceum passed to his pupil Theophrastus and later followers of the Lyceum called themselves Peripatetics. Their chief opponents were the Stoics.[2] While the Peripatetics concerned themselves with developing and explaining Aristotle's logic of predicates, the Stoice seem to have worked exclusively with a logic of propositions, and neither party saw that they were working in complementary endeavours in the same field.

Because they dealt with a logic of propositions, in which the subject could very well appear in forms other than the nominative, the Stoics held that the nominative was a case in the same way as all other forms of the noun. They were able to do this because they were quite clear about the status of the propositions with which they dealt; they were not words along, nor objective structures, but thoughts in the mind about things represented in words.

Because they held that language had an ultimately natural correspondence to things, they initiated etymological studies, searching for the "original" form, were concerned for a proper use of pure Greek , Ἑλληνισμός, and in furthering both these aims, developed both phonetic and grammatical study of language. In place of Aristotle's three (or possibly four[3]) parts of speech, the Stoics distinguished noun, verb, conjunction and article, and later, proper and common nouns. The term πτῶσις was restricted to the noun-forms, the expression ῥῆμα to the infinitive of the verb, while the others were called κατηγορίαι , "predicates".

Other Stoic advances included the listing of grammatical categories other than the basic "parts of speech"[1], such as gender, number and case in the noun, voice in the verb, the difference between transitive and intransitive verbs, and a preliminary analysis of mood and tense in the verbs, which surpassed Aristotle's brief mention of tense. But since they based these on semantic criteria rather than morphological, they failed to identify some categories which are clearly distinct on morphological grounds, such as the future and aorist tenses.

THE ALEXANDRIANS: ANOMALY vs ANALOGY

The next important stage in the development of Greek language-study can be considered the attack on an old problem (physis-nomos) with better tools (grammatical categories) in the light of a new interest (literature).[2] The center of Greek culture passed from Athens to Pergamon and Alexandria. Alexander's general, Ptolemy, founded his dynasty in Alexandria, and there established the famous Museum. Aristotle's great library was stored there, and it was largely staffed by his followers. There some of the most influential books in the world were written, including Euclid's Geometry and the Grammar of Dionysius Thrax.

While the early physis-nomos dispute could only concern isolated words, whose phonetic structure did or did not appear to conform to the things they named, the more sophisticated grammatical categories which had been developed shifted the scope and point of the problem of how language and reality paralleled each other. The Anomalists in Pergamon held the extreme conventionalist view, and saw language as internally irregular, and showing no parallel to the things signified by grammatical categories. The Alexandrians defended the internal and external regularity of language and analyzed Greek into

progressively narrowed and restricted categories. Following Aristotle, they assigned the nominative form of the noun a peculiar priority in their discussion of it.

The Alexandrian era extended over a considerable span of time, from, say Zenodotus Philadelphus (284-246 B.C.) to Appollonius Dyscolus and his son Herodian (circa 180 A.D.). The classic formulation of their work was the grammar of Dionysius Thrax (circa 100 A.D.).

DIONYSIUS THRAX

The grammar of Thrax[1] was the model of subsequent Greek and Roman work, and both its content and divisions have been copied in school grammars to our day. Thrax defined Grammar as the empirical study of the usage of great poets and prose writers, and distinguished it into six parts: (1) proper pronunciation (2) explanation of poetic tropes (3) preservation of mythical examples (4) the discovery of etymologies (5) the establishment of analogies or regularities, and (6) criticism and appreciation of literature.

In his 25 succinct paragraphs, Thrax does not go into all of these aims, but sets out the phonetics and morphology of Greek. He distinguished eight parts of speech: Noun, verb, article, participle, pronoun, preposition, adverb and conjunction. The first four are defined morphologically and the typical meaning assigned. The pronoun and preposition are defined syntactically, and the adverbial definition implies both morphological and syntactic criteria. Only the conjunction is defined in exclusively semantic terms.

What is missing in Thrax' classical grammar is syntax: the assignment of rules for combining the various parts of speech. This is due, perhaps, to the Alexandrian preoccupation with the analysis of texts. The deficiency was remedied to some extent by the grammar of Appollonius Dyscolus[2]. He distinguished the

eight parts of speech on semantic grounds, perhaps assuming the reader's familiarity with Thrax' work. He established rules for the formation of simple sentences, and gave as the principal reason for their combinatory restrictions that each form had a determined gender, number and case, etc., and can only be linked to similar forms.

ROMAN GRAMMARIANS

Roman grammar was basically an uncritical adaptation of the Greek analysis of their own language. One of the most original of the Roman grammarians, Varro[1], was of little influence. Remmius Palaemon[2], also a first century grammarian, is of importance because of his translation of Thrax' work, which set a good deal of the technical language, with the notable misinterpretation of the πτῶσις αἰτιακή as the casus accusativus.

Palaemon followed Thrax' order, and since the Greek had eight parts of speech, he inserted the Latin interjection as the eighth, in place of the missing article. Donatus[3] wrote a short teaching-grammar which followed the order of Palaemon, and called attention to some typical mistakes in sentence construction, possible ambiguities in poetic style, and some differences between Latin and Greek.

PRISCIAN

The most complete Latin grammar was written by Priscian[4], who taught in Constaninople about 500 A.D. In this last great work before the collapse of the Empire, Priscian based himself expressly on the grammars of Herodian and Appollonius Dyscolus. His grammar is divided into 18 books of unequal length. The last two deal with syntax, and were called Priscianus Minor by the medievals; the first 16 books were called Priscianus Major. With Donatus, this was *the* grammatical authority in the middle ages.

Priscian's grammar is important for two reasons: it is the most complete and accurate description of Latin that has come down to us from antiquity, and it was the grammatical authority in Aquinas' time. It is therefore worth a longer exposition, in order to show how ambiguities inherent in Aristotle's logic had their effect on grammatical description. The same ambiguities were still unresolved in Aquinas' time.

Confusion arises in Priscian's method from a lack of appreciation of semantic, morphological and syntactic criteria. He uses all three, but has no set order for applying them, and explicitly states that the semantic criterion is the most important for distinguishing the parts of speech. In the Aristotelian tradition, he gives the nominative form of the noun priority over other cases, and the noun over other parts of speech. He is inconsistent with both these fundamental principles he enounced.

He explains the elements of language as follows: language consists of sounds which are of four kinds, not all useful in language: a _vox articulata_ is one which is limited or linked to a meaning by a speaker. A _vox inarticulata_ is one which is not uttered in order to manifest a meaning; a _vox literata_ is a sound which can be written (whether _articulata_ or _inarticulata_) and a _vox illiterata_ is one that cannot be written.[1]

A letter is a sound which can be written, the minimal part of a composite sound, that is, one composed of more than a single letter.[2] A syllable is a sound which can be written and uttered with a single accent on one breath; it may have as few as one, and no more than six letters, as in _a_, _ab_, _ars_, _Mars_, _stans_, _stirps_. There are only as many syllables of one letter as there are vowels.[3].

A _dictio_ is the minimum part of a compound expression and is understood to be a part in terms of the meaning of its whole;

this definition is given to prevent the interpretation of a word like _vires_ as being analyzable into meaningful parts like _vi_ and _res_, or in any other fashion.[1] This is Priscian's greatest failure as a grammarian, denying analysis into base and affix morphemes in an exceptionally clear case for Latin.

An _oratio_ is an acceptable arrangement of words (_dictiones_) which signifies a complete thought. The _oratio_ is of various types, and even a single word in answer to a question is to be considered a perfectly good _oratio_, as when I ask "What is the greatest good in life?" and you answer 'honor', I would say that you had answered in a good _oratio_."[2]

The parts of speech - better, the parts of a sentence, - are defined by Priscian as follows:

(1) "The _noun_ is a part of speech which assigns to each of its subjects, bodies or things, a common or proper quality."[3]

(2) "The _verb_ is a part of speech with tenses and moods, without case, signifying acting or being acted upon."[4] According to their meaning, verbs are subdivided.[5]

(3) "The _participle_ is not defined, but Priscian says it should rightfully come in third place since it shares case with the noun and voice and tense with the verb.[5]

(4) "The _pronoun_ is a part of speech which is substitutable for the proper name of anyone, and which has definite person."[6] Words like _quis_, _qualis_, _qui_ and _talis_, etc., which are indefinite as to person, are therefore declared to be nouns.[7]

(5) "A _preposition_ is an indeclinable part of speech which is put before others, either next to them, or forming a composite with them."[8]

(6) "An _adverb_ is an indeclinable part of speech whose meaning is added to the verb."[9]

(7) The interjection is not defined, but distinguished from the adverbs with which the Greeks had identified it, by reason of its syntactic independence and emotional meaning.[1]

(8) "A conjunction is an indeclinable part of speech which links other parts of speech, in company with which it has significance, by clarifying their meaning or relationships."[2]

Priscian had decided views on the basic criterion for defining the parts of speech: "There is no other way of distinguishing the parts of speech than by attending to the peculiar signification of each."[3] The definitions he actually assigned show that he assigned semantic, morphological and syntactic characteristics, in no determined order. His reliance onnsemantic, rather than formal (morphological, syntactic) criteria led to confusion in his treatment of the verb[4], too narrow a definition of the adverb and pronoun, and especially, confusion of the semantic and formal notion of case, which involves him in contradictory theory and practice with respect to the basic form of the noun declensions.

He takes both formal and semantic features of the verb into consideration in explaining the verb:

> "The meaning of verbs, properly speaking, is that of acting or being acted upon. All verbs that have a complete and balanced declension (declinationem)end either in -o or in -or.
>
> Those ending in -o are of two kinds: active and neutral. The active type always signifies an activity, and the passive verbs are formed from them. Neutral verbs are those which end in -o like the actives, but passives are not formed from them.
>
> The verbs which end in -or are of three kinds: the passive verbs, which are formed directly from the active and always signify 'being-acted-upon', the common verbs, which signify both acting and being acted upon, but have

> only -or endings, and the deponent verbs, which end in -or only and are called deponent, whether because they are used alone and absolutely, or because they 'depose' different meanings and are quite independent, requiring no addition to have meaning."[1]

By giving the semantic criterion priority, Priscian too readily identifies the signalling of the grammatical active-passive opposition with the difference between the -o and -or endings. From the examples he provides himself, it is clear that this opposition is never signalled by the opposition of -o and -or alone, but always by the entire syntactic construction of verb and possible cases of the noun objects. If he had based his classification of these categories on parallel distribution rather than the ideas of activity-passivity, a more consistent and simple picture of the Latin verbs could have been given.[2]

In discussing the noun declensions and cases, both formal and semantic criteria are again mentioned, but there is considerable confusion. He takes account of the Aristotelian and Stoic notion of case in this fasion: 'case' is defined as "the declination of a noun or of other words with case, which occurs especially at the end"; the nominative is called the casus rectus, "either because it 'falls' from the general notion of a mame, but like a pen falling from the hand, remains upright; or it is improperly called a case, since all the others arise from it; or because it makes the other cases by dropping of its own termination." This notion of the nominative being only improperly called a case is stressed: "... the nominative is only improperly called a case, since it makes the other cases... but if it is called a case because all the nominatives 'fall' from the general idea of a name, then it will be seen that all the parts of speech have case."[3]

Just as the order in which the parts of speech are to be stated has some "natural" justification, he finds the same thing

is true of the order of cases:

> "....for the nominative is the first that nature produced and it claims the first place... the genitive has the second place and has a natural link of origin, since it arises (<u>nascitur</u>) from the nominative, and generates the following oblique cases. The dative, which is more appropriate to friends, has the third place... the fourth is the accusative, which pertains more to enemies. The Greeks put the vocative last, since it seems inferior to the others in that it can only combine with verbs in the second person, while the others are used with all three... in like manner, the ablative combines with all three..."[1]

Priscian's own directions about how to form one case from another in the various declensions does not support his express view that the nominative "makes" the others, nor that the genitive generates the rest, since he forms them just as frequently from the ablative singular. His procedure is to state the last <u>letter</u> in which the nominative and genitive singular end, and then to give directions for the simplest way of forming the other cases, by adding, subtracting or changing the spelling of a case most similar to the one to be formed. Only in the fourth and fifth declension, whose members are less frequently used in Latin, does he "make" cases from the nominative singular. The so-called natural order of cases also cedes to whatever order seems simplest for transforming one case into another, in terms of the last letter.

Preoccupation with the last letter in Latin nouns or verbs prevented Priscian from seeing that they were of little grammatical significance, and shows the difference between accurate observation - which Priscian certainly displayed - and informed observation. For in setting up the nominative singular and the first person singular in the verbs as basic forms, he employs a logical or psychological justification, and does not satisfy two other important aims in setting up a "basic form"

for the noun and verb formation. One might consider a form basic on several criteria, but two seem relatively important: the basic form should show the maximal distinction between the different conjugations and declensions, and it should be the form which provides the clearest base on which to form the others within the paradigms. In the verbs, the Latin second person is more apt for this first purpose, as can be seen by comparing Latin amo, moneo, rego and audio to amas, mones, regis and audis. In the nouns, Priscian himself forms only 9 cases from the nominative, 11 from the genitive and 11 from the ablative, so that the choice of the nominative as basic seems unjustifiable on that count.

The last two books of Priscian's grammar deal with Latin syntax, based on the work of Apollonius Dyscolus with additional observations about features peculiar to Latin in comparison with Greek. Priscian points out, as Dyscolus had, that just as there are limitations on the way that letters can combine to form syllables, there are limitations on how words can be linked to form understandable sentences. Priscian proposed to discover this acceptable arrangement by consulting the writings of classic authors, and by listening to Latin spoken by others.[1]

The reason why some forms combine as they do is that some share certain grammatical accidents with others, and when there is an accident (like number) in common, both parts must agree. The case is different in combining indeclinable with declinable parts of speech. The seventeenth book deals principally with the syntax of nouns and pronouns, the eighteenth with that of nouns and verbs in the indicative, imperative, "optative" and subjunctive moods. Then he considers what kinds of words are sociable on a semantic basis, and the voices of the verb.

The principal criticism of Priscian's grammatical method from a contemporary point of view is not necessarily limited to his preoccupation with semantic categories, but with his failure to distinguish formal and semantic criteria, and his failure to establish an order in applying each. He used formal distinctions frequently and with effect, and whenever he did, his distinctions are clearer and briefer than when using semantic justifications. He did not see that a purely grammatical description could be set up first, which could then be shown to agree or disagree with the semantic categories he felt sufficiently important to consider.

His denial that *vires* can profitably be analyzed in terms of"meaning" is the most striking example of this, and his discussion of a Latin "optative" confirms it. Latin does not have a grammatically distinct optative. To call *devenisses* in an expression like *utinam amicus noster devenisses* an "optative" only makes sense when pointing out that this use of the Latin subjunctive must be translated into the Greek optative form γένοιο and not the formally distinct Greek subjunctive γένῃ in εἴθε σὺ φίλος ἡμῖν γένοιο.

The need for such a procedure was doubtless obscured for Priscian because of his familiarity with both Latin and Greek language and culture, and the similarity of structure in the two languages. When dealing with cultures quite different from the European, it has been found that presupposing one will find the same semantic categories grammatically expressed is disastrous, so they have been eliminated by most linguists from the field of formal grammatical description, and when and if they are discussed, it is subsequent to the grammatical description. The strength of the formal approach lies in the fact that it is easier to make someone see what you see than to think what you think. A conceivable weakness may be the impression that formal description eliminates the need to think.

AQUINAS' INTELLECTUAL BACKGROUND

Medieval thought is synthetic and hierarchic in that some sciences were considered subordinate to others, and synthetic in the effort made to unite natural science, the liberal arts, philosophy and theology into a unified intellectual scheme. These syntheses are found in the great *Summae*, such as a *Summa Theologica*, considered top of the hierarchy. Theology was held to be "Queen of the Sciences", philosophy was her "handmaid". Theology and Philosophy discussed and used the other sciences, and set a value upon each.

Both philosophy and theology were practiced as rational sciences, sharing a common method, but not common data. Part of the data of theology was derived from Revelation, while all of the data of philosophy was what reason could discover. This synthetic viewpoint not only had theoretical, but practical consequences as well. It will therefore be helpful to sketch come of the contributions made by Aquinas' predecessors, to enable us to judge his contributions and advances.

The medievals were concerned with much more than the problem of Universals, but for the sake of clarity and brevity, other problems can be discussed in terms of this central difficulty as an illustration of their synthetic approach.

As it was stated in the early middle ages, the problem of Universals concerned the status of the common or universal terms which are used in syllogisms: what do class-names like "red", "redness" and "man" stand for? After some preliminary solutions had been given, and their consequences worked out, it was seen that this question had to be the last of three, although solidary with them: what is there to know? how do we know it? what is the status of that knowledge?

It was soon seen that logic alone could not provide a satisfactory answer, since formal logic only guarantees the

correctness of inferences drawn according to the logical rules from given premisses, while the value, significance or importance of such conclusions would depend on the status of the terms employed. From Augustine to Petrus Hispanus, there was progressive refinement of how to discuss the problem, and this appears in a summary account of their work.

Augustine was one of the most influential Christian thinkers and his efforts to relate and evaluate the findings of natural science, the liberal arts and theology, though tentative, served as a guide to the medievals when a new synthesis was required upon the rediscovery of Aristotle's lost works. Boethius was the link between the Ancient world and the middle ages. He handed on the basic logical works of Aristotle, invented the terms Trivium and Quadrivium, which formed the framework of education to the middle ages, and wrote books for this curriculum. Abelard applied the canon lawyers' sic et non method to theological questions for the first time, and forced a clearer statement of the problem of universality and individuality. Peter Helias was a 12th century grammarian who commented on the work of Priscian. By introducing logical terminology, he facilitated the "logicization of grammar" in the 13th century and paved the way for the work of the Modistae, speculative or philosophic grammarians of the 13th and 14th centuries. Petrus Hispanus was a contemporary of Aquinas. His Summulae Logicales present the formal grammar accepted at that time, and provide a valuable lexicon of terms Aquinas uses without definition...

BOETHIUS

The greatest single influence on medieval thought was Boethius[1], a contemporary of Priscian's. Born 470, he studied in Greece and Rome and conceived the idea of translating the greatest works of Greek scholarship for the Latin West. His influence was principally in three fields, Logic, Education and the statement of the problem of Universals.

Although the translation of the entire Organon of Aristotle is attributed to Boethius in the Migne collection[1], it is probably not his work; certainly his were the translations and commentaries on the Categories and the De Interpretatione, which every medieval library possessed. They were obligatory in the University curriculum until the rest of the Organon and the other logical writings of Aristotle became known in the 12th century. They were discovered principally by contact with the Arabs in the Crusades, in the Saracen civilization in Sicily, and the Moors in Spain; Jewish translators were the mediators in the last two cases.[2]

Boethius invented the terms Trivium and Quadrivium[3], which summarize the scope and aims of education from the Dark Ages through the Carolingian Rennaissance to the 13th century Rennaissance. The Trivium dealt with the ways in which knowledge was to be expressed: grammar, rhetoric and logic. The Quadrivium were the four branches of learning, Arithmetic, Geometry, Astronomy and Music. Boethius wrote books and commentaries which provided the basic materials in all these fields, and these were not only sources of information, but models of a commentary on a unified text. In medieval times, the "Commentary" was the equivalent of today's scientific journal, providing a point of departure for expressing original views and critique.

The question of Universals was framed in Boethius' commentary on the <u>Isagoge</u> or Introduction to the Categories of Aristotle by Porphyry:

> "...whether they subsist, or whether they reside merely in concepts alone, or whether they are corporeal subsistents or incorporeal, and whether they reside separated from sensible things and have some reference to them, I will not say... for this is a profound question and requires more study..."[4]

Boethius' opinion or lack of it[5] is of little importance. What is important is the limited possibilities he saw, the neglect of distinction between the ontological, psychological

and metaphysical problems. As various solutions were proposed and debated, the three levels were gradually distinguished.

AUGUSTINE

St. Augustine[1] (354-430) is of importance to Aquinas chiefly for his position on the interde.endence of faith and reason. His work, as modified and extended by later scholastics, was Neoplatonistic, and held the widest following among the professors in the University of Paris before the rediscovery of Aristotle's other logical and non-logical works.

In a period of ecclesiastical suspicion of secular learning, Augustine had tried to show the importance and justification of dialectic, the need of distinguishing one's own opinions about truths presumably found in revelation from those actually to be found there, especially when such opinions conflicted with the findings of natural science.

Augustine saw a mutual kind of causality between faith and reason: faith enables one to understand, reason enables one to believe. While the paramount authorities are the teaching of the Church[2], the teaching of the Fathers[3] and that of Scripture[4], reason is in some way a prerequisite for faith.[5] Augustine's attempt to establish what that relationship was anticipated the formulas which describe the goals the scholastic syntheses set themselves, "Credo ut intelligam" and "Fides quaerens intellectum".[6] In Augustine, this is all tentative: he does not distinguish clearly between theology and philosophy.[7]

One result of the lack of such distinction may be seen in his account of psychological processes, in whose introspective description he is deeply penetrating. His psychological doctrine was fashioned more to give a basis to faith and morality than to account for the origin of ideas or describe perception. It is clearly Platonic in origin and inspiration; he distinguishes

bodies and sensations, and senses from their reference to external sensible objects, which men and animals have in common. Besides that, men collect and collate what the sense have perceived and make judgments about it. In the act of judgment, the intellect is aware of itself judging. In that awareness, one is conscious of the power of habit, and of the instability of our judgments. The very possibility of preferring the stable to the instable, he finds, indicates some sort of knowledge of the unchangeable, since it could not otherwise be preferred to the changeable.

The activity and position of the soul in Augustine's view is again Platonic: body and soul are radically different, so that the body cannot be properly said to act on the soul or vice versa. The soul is present in the body watches over it, guides it, incites it to action, and takes account of particular or unusual sensations. While admitting the necessity of sensation for knowledge, he also requires some kind of previous knolwedge in the soul, and even seems to suggest that the notions of coherence, truth, equality and inequality have and extra-material source.[1]

Augustine's explanation of knowledge is usually called the Divine Illumination theory. He substitutes exemplary ideas in the Divine Intellect for Plato's subsistent ideas, as the source of our universal and certain knowledge. The ideas in the Divine Intellect are called "exemplary" because they are seen as models and causes of things. Augustine explains that the light of the divine ideas moves our intellect in knowledge, illuminates our own ideas, and so allows us to know the truth, since the exemplary ideas are the ultimate ground for the being and truth of things we know.[2]

Other Augustinian contributions to later scholastic method were the insistence on a clear statement of the point at issue, the use of a methodic doubt and the ordering of problems according to the matter and opponent involved.

Augustine is the author most quoted by Aquinas in the Summa Theologica and Summa Contra Gentiles. This is because his views were the most respected and best known, and Aquinas was at pains to show how his position was continuous with that of Augustine, but clarified ambiguities and weaknesses.

ABELARD

Two contributions of Peter Abelard[1] to the thought of the 13th century were his discussions of the problem of Universals, and his "Sic et Non", a collection of 150 seemingly contradictory statements from the Fathers. This work was meant to give practice in dialectic to students, and although the method was commonly employed by the canonists of the period, Abelard was the first to apply it to theological questions. He recommended five steps in the consideration of opposed statements: (1) establish the genuinity of the text, (2) check for later retraction of the questionable statement, (3) see if the matter in question is canonically or theologically open to discussion or not, (4) see if the various authors use the same definitions of terms in all their own works, or in each other's works, and (5) when real contradiction is established, take the better-founded view.[2]

This method, which insisted on clear definitions and statement of the precise point at issue, can be seen in the developed method of presentation among the scholastics, for instance in the typical arrangement of questions in Aquinas' Summa Theologica: I: The Arguments against (videtur quod... non); II: the Counterarguments (sed contra...); III Body of the Article (Respondeo dicendum...); and IV: Refutation of Objections in order (Ad primum ergo dicendum...).

Taking the text of Boethius already stated, it can be seen that only those possibilities he mentions were originally considered. The question was put in a simple fashion concerning the universal or common terms in propositions and syllogisms

at first, and it was asked what corresponded to terms like "red", "redness" and "man". The preliminary answers were largely ultra-realistic, in a Platonic or Aristotelian vein, or nominalistic.

Ultra-realism in the Platonic tradition would locate subsistent universals in an extra-mental and extra-material world, so that it is to these Forms or Ideas that class-names refer. In the Aristotelian tradition, an ultra-realistic solution would locate universals as such in things. Other possibilities would be to attribute the universality to the mind or concepts or words alone, with or without some theory to provide a justification or extra-mental foundation. All these conclusions had been reached before Abelard's time.[1]

Boethius had reported the basic Aristotelian view, that words like "humanity" stand for a universal or common nature abstracted from comparing the individual members of a species, such as men, and finding what they had in common. The universal "humanity" could only exist in the mind as such, but there is a real foundation for the notion in the natures of men.

Others held that reality and thinking are perfectly parallel, and since we have a concept of the abstract, universal 'humanity', it existed, not apart from men, as Plato thought, but in them. This form of ultra-realism was maintained more or less as described by John Scotus Eriugena (d. 870), Remigius of Auxerre (d. 908), Odo of Tournai (d. 1113) and perhaps St. Anselm (d. 1109). But during the same period, Eric of Auxerre (d. 870) insisted that there was nothing in our experience to which one could point, which would correspon to "red" or "redness"; all one could do was to exemplify the notions by pointing to things which were called red.

Abelard took up the quarrel when his master, William of Champeaux (1070-1120) , taught that a universal essence, such as

"humanity" is a thing which exists, numerically identical, in all the individuals composing the species. Though numerically identical as men, individuals differ by reason of their own individual forms, added to "humanity".

Abelard showed that this is nonsense in terms of the Aristotelian categories, since two substances cannot differ as substances, merely through some accidental form; if Socrates and Plato are numerically identical in their "humanity", which is substantial to them, then wherever Socrates is, Plato must be substantially present. Hence they must differ by reason of something substantial itself, to avoid this inconvenient conclusion.

William then reversed himself, and admitted that only the individual exists in nature, and that Plato and Socrates each have something that is peculiarly their own. But one can abstract from the individual peculiarities and consider only what is denoted by the word "man", and thus Socrates is a Species, a rational, mortal animal; it is then possible to abstract "animality" from this definition, and then Socrates is a genus.

Abelard labelled this mere verbal subterfuge, and proposed his own solution: universality is a property of words only. This is not exactly modern nominalism, since "word" for Abelard was not just _flatus vocis_ or _vox_, but _sermo_ or _nomen_, a word which has a meaningful content established along the lines of Aristotelian abstraction. Abelard did not offer a developed psychological account of this, as Aquinas did, but their positions are fundamentally in accord, and is usually called Moderate Realism.

Abelard is a "realist" in holding that universal concepts have an extra-mental foundation, which nominalism or conceptualism would deny; he is "moderate" in denying that anything can exist outside the mind precisely as universal, either in

things or in a Platonic World of Ideas.

While this dispute started in logical terms, it had direct repercussions on psychological theory and on the understanding of science and scientific method, which was of fundamental importance in the 13th century.[1] In the Platonic tradition, it is the idea or essential structure of things which is permanent or unchanging, not the shadows of our experience. For Plato, only two things seem real, Ideas and formless Matter, out of which all our "shadows" are made. In terms of Matter and Form, both the Ideas and Matter are two different substances, and both are unchangeable. On this basis, change in the "shadows" is not explainable as real.

For Aristotle, matter and form are not substances, but principles of things which are substances. The matter of a substance is its capacity to be what it is, as well as its capacity to become something else, and its form is the actuality or realisation of those capacities at a given moment. When change takes place, it is neither the matter nor the form which changes; matter does not become form, nor does one form become another. It is the thing or substance which changes.[2]

PETER HELIAS

Among the works of Aristotle recovered in the West in the 11th century, the logical works were the first to be absorbed, including the Posterior Analytics, Topics and Sophistical Refutations: added to the Prior Analytics, Categories and De Interpretatione, which had constituted the "Logica Vetus", they formed the New Logic. This renewed interest and prestige of logic had unfortunate results for literature[3] and grammar. Helias' commentary on Priscian reflects this[4].

Other differences besides those of interest in logic encouraged departure from Priscian: medieval pronunciation[5] and usage[6] differed from that of classic authors, and was preferred.

Instead of basing their grammatical rules on the example of classic authors, there was a movement among the medievals to justify them in terms of the inherent logic of their form of Latin. Hence the period is seen as the "logicization of grammar".[1] Helias is of importance to this period, since his commentaries had great prestige, and were obligatory in the University of Paris by the 13th century.[2] By "translating" some of Priscian's terms into the logical vocabulary of Aristotle, he helped logic gain ascendancy over literature and grammar, and this movement resulted in the philosophical or general grammars of the so-called Modistae in the 13th and 14th centuries.

To see what this implies, it is useful to distinguish three types of grammars, descriptive, normative and general. What the first type aims at is deducible from Bloch and Trager's definition of a language: "A language is the way people talk, not the way someone things they ought to talk."[3] A descriptive grammar, then, merely sets out regular features discoverable in the way people do talk; normative grammar lays down rules for the way they should talk. A general grammar is not concerned immediately with a particular language, but will somehow contain features common to all languages. The Modistae claimed to find these general features in philosophic and semantic categories, so that it may be said that their grammars attempted to assign reasons for why people ought to talk in a certain way, because of the nature of the things they talk about. Modern grammarians have largely lost interest in general grammars, but if one could be written, it would probably be based on formal, rather than semantic categories.[4]

Helias gives Martianus Capella's definition of Grammar, as the science which "teaches the right way to write and speak, and whose task it is to lay down rules for the avoidance of solecisms and barbarisms."[5] He recognised that there are as many grammars as there are languages.[6]

In his Commentary on Priscian, Helias restates some of his definitions in logical terms. He follows Priscian's division of Grammar into four parts (Letters, Syllables, Words, Sentences)[1] and generally adopts his account of the Noun,[2] Pronoun,[3] Participle[4] and the Indeclinables[5] with little alteration. But he substitutes a logical definition of the verb from the Boethian commentary on the De Interpretatione:

> "The very is what consignifies time, whose part does not signify something separate, and is always the sign of things predicated of another."[6]

Priscian had distinguished the parts of speech by reason of their proprietas significationis; Helias substitutes a logically derived term, modus significandi, for this expression.[7] The Modistae later extended the term modus significandi to cover what Priscian calls accidentia, and what Helias here discusses in terms of consignification.[8]

Suppositio is another term with more logical than grammatical connotations: Helias does not use it in its logical significance, as will be seen in the work of Petrus Hispanus. For Helias suppositio is opposed to appositio, and indicates the grammatical subject as opposed to grammatical predicate.[9]

The basis and inclusiveness of grammatical congruity is somewhat different in Helias than in Priscian; where the latter used the word constructio for Dyscolus' σύνταξις , the joining of any two words, Helias in one place limits the use of this term on semantic grounds to the joining of two words signifying the union of two things. In this use, a phrase like in domo is not a constructio.[10] But Helias elsewhere uses the term in the wider sense of Priscian, and therefore he is basically in agreement with Priscian and Apollonius Dyscolus in defining the conguitas dictionum as the correspondence of similar accidents in the parts of speech.[11]

While the work of the Modistae[1] is subsequent to that of Aquinas, a brief indication of their method and conclusions is useful, since their speculative grammars are often taken as characteristic of the entire medieval period, and it will be seen how they agree and disagree with Aquinas.

The Modistae conceived the task of Grammar to be the demonstration of the causes of meaningful language. They dealt with words only as signs, and not as phonetic realities.[2]

One cause of meaningful language is the _modus significandi activus_, "the property given a word by the intellect whereby it signifies the property of a thing."[3] To explain why and how the intellect determines a word to be the sign of a thing, they argue that the intellect is a passive faculty which is determined by things outside itself.[4] Therefore one must distinguish three basic types of modes[5], modes of being (_essendi_), understanding (_intelligendi_) and signifying (_significandi_), as follows:

> "The active modes of signifying are derived from the modes of being, through the mediation of the passive modes of understanding; and therefore, immediately from those passive modes of understanding."[6]

In the doctrine of Thomas of Erfurt, these modal distinctions are seen as different aspects of one and the same thing: all three modes are materially identical, but formally distinct when considered from different points of view: as inhering in things, it is a _modus essendi_, as being known, it is a _modus intelligendi_, and as expressed by a word, a _modus significandi_.[7]

This doctrine was rigorously developed and applied to the parts of speech and their accidents, each of which had to have some _modus_. A grammar like this may be considered _descriptive_ of the technical language of a particular philosophy, _normative_ for students of that philosophy, and _general_ or philosophic because of the relation it says holds between objective reality and language. Its terminology is found in Aquinas, but he rejects its basic assumptions.

PETRUS HISPANUS

The field and nature of "logic" has been disputed ever since it was invented. Since the medieval linguistic study has been called the 'logicization of grammar', it is useful to distinguish the different senses in which "logic" was then used and understood.[1] The Summulae Logicales of Hispanus set out the common formal logic of the 13th century.[2] Recent studies have shown that much of ancient and medieval studies have been misunderstood[3], and to clarify some of the confusions, it can be compared to modern mathematical or symbolic logic.[4]

The most obvious difference between modern and medieval logic is the degree of abstractness or formality: both deal with the relation of symbols to each other and to this extent are equally formal; but medieval logic was a formalization of the Latin language, while modern logic employs symbols invented for the purpose. The result is that while medieval logic in Latin was subject to some restrictions in combinatory possibilities by reasonof Latin grammar, modern logic is not subject to any restrictions but the logician's rules, especially when the syntactic rules are established first, and the symbols assigned meanings second.

While the modern use of symbols seems the most striking difference, this is merely a matter of degree; the invention of letters to symbolize variables (terms or propositions) is due to Aristotle[5] and the scholastics followed him in that practice, although neither fully realized or exploited the technique. The extent to which modern formal logic escapes requirements of natural language is still subject to investigation.

Since Bochenski has issued a modern critical edition of the <u>Summulae Logicales</u>, only a few of the central definitions

and distinctions will be mentioned.

Hispanus' logic is basically Aristotelian, with some later Greek accretions as transmitted by Boethius. It is considered to be both an art and a science, which is applicable to the basic principles and methods of other arts and sciences.[1] The modern distinction between language and metalanguage is expressed by Hispanus in terms of material and formal supposition or interpretation, with the resultant distinction of material consequence (by reason of the meaning of the terms) and formal consequence (by reason of the arrangement of the terms according to the rules.)[2] Since medieval logic was strictly formal, it could be and was used by philosophers with quite contradictory views about the status of logical terms.[3]

Logical semantics and syntax are distinguished by Hispanus in the difference between significatio and suppositio, which may be translated as "meaning" and "interpretation". First he distinguishes a simple term from a complex one; homo is a simple homo currit is complex. Simple terms signify substance, quality or one of the other predicaments. A term is defined in two ways, (1) "a vocal sound which signifies a universal or particular" and (2) "that into which the proposition is analyzed, namely subject and predicate".[4] Signification is "the representation of a thing vocally through convention" and if any such term does not represent a universal or singular, it is not a term in the sense in which Hispanus intends to deal with them.[5] There are two types of signification, that proper to the noun (substantial) and that of the adjective or verb (adjectival).[6] Substantive terms are said to supponere, adjectivals and verbs to copulare:

> "Suppositio (interpretation) is the acceptation of a substantive term for something. Signification and interpretation are different, since signification is (effected) through the imposition of a vocal sound to signify this thing, while interpretation is the acceptation of this same term which already means a thing, for another thing, as when

> we say homo currit, this term homo is interpreted for (supponit pro) Plato, Socrates, and so on. Therefore signification is prior to interpretation, and they are not the same thing, since signification pertains to a vocal sound, and interpretation pertains to a vocal sound already composed of the sound and its signification. Similarly, signification is a relation of a sign to the thing signified, while interpretation is a relation of supposit to supposit, and therefore interpretation and signification differ. Copulatio is the acceptation of an adjectival term for something."[1]

Hispanus' use of "supposit" is unclear. Signification, he says, is signi ad signatum, while interpretation is suppositi ad suppositum. The term suppositum generally means a thing, as a principle of activity, and its use for grammatical subject is derivative from this, as is the logical-subject use.[2] But from other contexts[3] it appears that Hispanus uses the term to refer to those substantive terms into which the proposition is resolved, subject or predicate. From one point of view, then, suppositio involves a relation of one thing to another thing, while in formal logic, it is a relation of one term to another term.

Thus, in the sentence "Some man is an animal", the term "man" stands for something for which the term "animal" stands. Here, the expressions "man" and "animal" are taken materially, as names for terms, not objects; the word "something" does refer to whatever these terms designate, but it is not itself a term in either modern or medieval understanding. Hispanus would call it a syncategorematic term, since it functions as a syntactic quantifier, determining the connection in extension of the categorematic terms "man" and "animal".[4]

Other important terms, which indicate how the "meaning" of words was distinguished and subdistinguished, include significatio principalis, significatio ex consequenti and consignificatio,

ampliatio and restrictio, appellatio.

The principal signification is the designate of a word, and consignification is what the accidents stand for.[1] The accidents are distinguished by the figura, the "similarity of one word to another in that part which does not have the same meaning."[2] These similar parts are the casus, some of which are said to belong to the word absolutely (in any use or in isolation) and others belong to it ex consequenti, as a consequence of being used in this particular sentence.[3]

Extension and restriction (ampliatio and restrictio) are dealt with at length elsewhere[4]; restriction is the limiting of a common term from a larger to a smaller interpretation; extension is the enlargement of a common term's interpretation. Appellatio or naming is defined as the "interpretation of a term for an existent thing"[5] and the note of "existence" distinguishes it from signification and interpretation alike. A term which signifies and is interpreted for something non-existent (e.g. Caesar, considered dead) cannot properly name anything. But interpretation and signification are not limited to non-existents.

In discussing Distribution, the "multiplication of a common term by means of a universal sign like omnis"[6] Hispanus makes some observations of interest in light of the Modistic doctrine. He says that universal signs which affect the distribution of terms do not refer to things directly (modis essendi) since of themselves, things are either universal or particular, but rather to their logical aspect, our way of thinking about them (modi intelligendi) or talking about them (modi significandi). An expression like sol stands for one unique thing, the sun; yet it is a universal term, in that what is signified is a form which can be predicated of many. This leads Hispanus to observe that while a universal cannot be exceeded by the individuals

which make it up, nor itself exceed those things it includes, there is nothing odd about there being an equation of individual and universal in an expression like omnis sol.[1]

From this it appears that the modes of existence could be clearly recognized as singular or universal, substantial or accidental, etc., while the mode of understanding or signifying could be singular, universal, substantial, accidental, etc., without any necessary confusion of levels. This is doubtless what Chenu has in mind when saying that it was the task of the scholastics to break down the "semantic unity" of the parts-of-speech analysis they found in the grammarians.[2]

The foregoing may be summarized as follows, as a suggestive orientation, rather than an exact history: the Greek analysis of language proceeded from the study of rhetoric through dialectic and logic to grammar. The first studies relied principally on semantic criteria, but logical dispute called attention to linguistic morphology. Greek grammar developed the notion of linguistic morphology, but retained in the main the syntax and semantics of the logicians. The Roman grammarians took over the Greek analysis of their own language uncritically and further compounded its ambiguities. Much medieval linguistic speculation about the relation of language, thought and reality was based on this faulty analysis of a single language.

In the following pages, Aquinas' life and work will be sketched, with his attitude to the different disciplines concerned with language. His own point of view will be set out and related to his overall philosophic position, particularly his psychology. This will be summarized and criticized. Then the relevance of Aquinas' views to Modern Linguistics will be discussed.

CHAPTER II
AQUINAS' LINGUISTIC DOCTRINE

Thomas Aquinas: Life and Character

Thomas was born in 1224 or 1225 in the town of Rocca Sicca in the province of Naples.[1] His father was Count Landulph of Aquin, and his mother from a noble family as well. At the age of five he was sent to start his elemenatry education at the nearby monastery of Monte Cassino, where his uhcle was Abbot.

At the age of fourteen, he started the Trivium (grammar, rhetoric and dialectic) in Naples, and his instructor in the Quadrivium (arithmetic, geometry, astronomy and music) was a certain Petrus Hibernus, author of commentaries on Aristotle, who therefore was one of the first to introduce Aquinas to the Philosopher.

In 1244, at the age of 20, he entered the Dominican Order in Naples and was then assigned by his superiors to continue his studies at the University of Paris. But his brothers were opposed to an ecclesiastical career for him, and imprisoned him in the family castle of St. Giovanni. Gaining his freedom at the end of the year, he arrived in Paris in 1245, and there studied for three years under the Dominican Albert, known in his own lifetime as "the Great". In 1248, Albert was sent to found a house of Studies for the Dominicans in Cologne, and Aquinas accompanied him there, finishing his studies in 1252.

In that same year he returned to lecture in Paris as a Bachelor, obtaining his Licentiate[2]. At this period there was considerable rivalry between the religious Orders teaching in the University and the secular clerics engaged in the same profession, and as a result of the position he took on this, Aquinas was not admitted immediately to the college of professors. He became a professor of Sacred Scripture first, and lectured in Paris in that capacity for three years, attracting both devoted followers and considerable opposition because of the originality,

independence and progressiveness of his teaching. In 1259 he returned to Italy and worked on the course of studies for the Dominican Order, lecturing also on theology in Naples. It was during this period that he wrote the Summa Contra Gentiles, an apologetic work which became the manual of the Dominican missionaries in Spain. From 1260 to 1264 he was in the Papal Court, held in Viterbo and Orvieto, and there met a fellow Dominican, William of Moerbeke, whom he persuaded to translate Aristotle's works afresh. In 1265 he went to Rome and lectured in theology there for three more years.

Then he was recalled to Paris again in 1268 and became professor of Theology. This was perhaps his most fruitful period of work, and during it he was engaged principally in combatting the interpretation of Aristotle's works advocated by Siger of Brabant and Boethius of Dacia. These were leaders of a group known as "Averroists" because of the preeminence they gave to the Commentator, Averroes, in expounding Aristotelian thought. As a consequence of this, they held doctrines on philosophical grounds which were irreconcilable with revelation, such as the denial of free will, the denial of divine providence, the eternity of the world and the numerical identity of intellect in all men.[1] This naturally brought Aristotelianism into conflict with the Church and with the other philosophical schools which held Augustine's Neoplatonism as the norm in theology and philosophy.

Aquinas' work, De unitate intellectus contra Averroistas, was considered one of the high points of medieval scholarship, since it refuted the Averroist position on strictly philosophical grounds. As a consequence, the doctrine of the Averroists was condemned and Aquinas gained in influence and prestige. But the condemnation of these Aristotelian doctrines reflected the suspicion and opposition of the other parties of the controversy and Aquinas' Aristotelianism, too, met with considerable resist-

ance, not only from the other Orders and the secular clergy, but within the Dominican Order as well. Among his fiercest opponents were the Dominicans Robert Kilwardby, a contemporary, and Durandus (died 1332). Chief among his Franciscan opponents was Duns Scotus (d. 1308).

Probably as a result of this controversy, he was recalled to Italy in 1272, and his Dominican successor was of a more Augustinian bent. Aquinas took up his activities in Naples again, and then was summoned to be a papal advisor at the council of Lyons in 1274, but died on the way. He was forty-eight or forty-nine. Despite the storms he had caused in Paris, he had been universally respected there, and the University appealed to the Dominicans to have the Master who had matured in Paris and brought forth his greatest works in that city, buried there. However, he was finally buried in Toulouse.

WORK: The controversy with the Averroists is typical of Aquinas' whole aim in his work, a synthesis of natural and supernatural knowledge, demonstrating their proper spheres and how they complement each other, and above all, to show that there can be no legitimate conflict between them. This was to be based on the study of what had been done by other thinkers, and supplemented by independent speculation, to provide a logical and metaphysical foundation for the entire synthesis. One consequence of this is his historical research and criticism. He was not satisfied that current translations gave the true thought of Aristotle, and rejected as spurious or corrupt many texts held to be genuine[1] and has been supported in this by subsequent research. He believed that unless the doctrine and errors of the past were adequately understood and evaluated, one would be forced to make the same errors. As a result, he thought that the doctrine, not the source, was what should be considered, and what was true should be accepted without being influenced by personal repugnance or

attraction[1]. While he firmly believed that nothing could be true contrary to revelation or dogma, it was necessary to distinguish one's own opinion from each, and to be careful not to expose oneself to ridicule by claiming the authority of revelation for things manifestly contrary to current science[2]. In his opinion it was clear that the passage of time necessarily brought with it progress, and therefore change[3], in both speculative and practical science. The Ptolemaic astronomy accepted in his day, therefore might be replaced, or the facts better explained[4]. In spite of his belief that man could and did arrive at truths by the use of reason which were not subject to change, he saw that this was a long and painful process, the result of much study and instruction, and that it was more characteristic of the mind to be wrong than to be right[5].

Since much of his writing is in strict scholastic style[6], only a part of the character of the man emerges. His contemporaries certainly had respect for his intellectual attainments, and even those who opposed him paid tribute to his personal qualities. Contemporary biographers portray him as a man of singular humility and innocence, and the former quality is abundantly clear in his writings. As one biographer puts it[7],

> "The writings of St. Thomas... are as anonymous as the architecture of the period... He always seems to be willing to learn and quote from others; he is generous even in his criticisms... It must be confessed that this extreme modesty makes him dull reading. To meet a quotation from St. Augustine, for instance, is like the sight of a silver trout in a clear stream..."

Aquinas' productive period extended over twenty or more years. He produced philosophical, theological, apologetic, exegetical and religious works. Among the strictly philosophical writings there are 13 commentaries on works of Aristotle and about 20 shorter articles. Mostly theological are the extensive commentary on the four Books of the Sentences of Peter Lombard, the <u>Summa Theologica</u> and a short compendium of theology. His

chief apologetic work is the Summa Contra Gentiles.

While Aquinas' stature was acknowledged and he did acquire a following, particularly among the Dominicans, both during his life and after his death, there was lively resistance to his thought, both among Dominicans and from all the other schools[1]. The same parties that had opposed him before still retained their vitality: the Averroists carried on, the Augustinian tradition grew, and Nominalism was more characteristic of later scholasticism than moderate realism. Many of Thomas' theories were included in the lists of propositions proscribed by different Universities. Three years after his death, there were two notable condemnations, one in Paris and the other at Oxford. The latter was due in large measure to the opposition of the Dominican Kilwardby, by this time successor to the Archbishop of Canterbury, John Peckham, who had also disputed with Thomas in Paris.

The Dominicans at Oxford taught his doctrine openly but it never flourished there as a system. In Paris it fared a little better, especially after the canonization of Thomas in 1323 was seen as some sort of guarantee of orthodoxy. But both Thomism and the other scholastic systems fell on hard times in the 14th and subsequent centuries, and men of talent comparable to the doctors of the great scholastic period were rare. What passed for philosophy then became a series of arid, mostly nominalistic debates, "commentaries on commentaries", a degenerate latinity that brought on the scorn of the Renaissance humanists, and a blindness to the developing natural science that merited the radicule of the scientists, particularly in the 17th century.

Where Thomas had commented on Aristotle and retained his independence of judgement, later scholastics swallowed his logic, metaphysics and particularly his astronomy whole,[2] and used Aristotle as a club on Galileo and Descartes.[3]

Aquinas' basic philosophy

What Aquinas found in Aristotle's philosophy was an example of how natural science and philosophy may be synthesized. He set himself the new problem of synthesizing natural science, philosophy and theology. All three have a certain rational procedure in common, but differ in their methods and criteria.

In the briefest terms, the synthesis produced by Aquinas might be sketched as follows: human understanding depends on sense knowledge, but intellection cannot be explained in terms of mere sensation. Both senses and intellect are fundamentally true.[1] But since it is evident that men are more often wrong than right, the causes of error must be explained. Both sense-knowledge and intellection are abstractive, and two cardinal Thomistic viewpoints are allied to his insistence on Abstraction, namely the distinction between Act and Potency and the doctrine of Analogy.

Unless the fundamental objectivity of knowledge be admitted, Aquinas held, the result must be a self-stultifying subjectivism or scepticism.[2] Due to the abstract nature of thought, we conceive things actually composed of actual and potential elements in a manner more simple than their concrete reality, and we also must conceive of things simple in themselves in a manner more complex.[3] All of this is summed up in the term 'Moderate Realism' and the position can be best examined from those three viewpoints, Abstraction, Analogy, and Act-Potency.

Thomas and the scholastics in general considered that science and philosophy were related in terms of three degrees of abstraction. Theology as a rational science need not concern us here, except to remark that part of its subject-matter are facts accepted as true on the evidence of revelation, not of science or philosophy. This implies a hierarchy of knowledge, part of which is illustrated in the degrees of Abstraction seen in the methods of Physics, Mathematics and Philosophy.

Physics (in the medieval sense) studies bodies, animate or inanimate, in the light of the one property common to all, that of change. It abstracts from such particularities as animate-inanimate, animal, vegetable, etc., and studies only the prerequisites and laws of change. This is the first degree of abstraction. Mathematics is the second degree, prescinding from change and considering that aspect which still remains common to all bodies even in change, which is quantity. Abstracting quantity as such by thought and in thought, it deals only with the quantitative relations. The third degree of abstraction is in Metaphysics which prescinds both from the reality of change and quantity of bodies and considers substance, being. The point of view is elusive and will require some further development.[1]

The central viewpoint of Aquinas' philosophy is metaphysical, dealing with the concept of "Being". This for him is neither a univocal nor an equivocal concept, but half-way between them, an analogical one,[2] which abstracts proportionate resemblances between disparate objects. In discussing being, the abstract and analogical concepts of Act and Potency are fundamental. The other well-known distinctions of matter-form, essence-existence, substance-accident, specific-individual essence are all applications of the act-potency contrast, and all are analogical.

Moderate Realism distinguishes between things as they exist wholly in themselves, independent of the mind's consideration, things that can exist only in a mind, such as figments, entia rationis, and things that exist only in the mind according to the way in which they are conceived, but which can be predicated of concrete reality without falling into the error that the concept fits each thing in exactly the same way (univocally) or that there is no more than a subjectively manufactured resemblance (equivocal, metaphoric) but that there is a proportion or analogy in the relationship of object A to the concept and

object B. to the concept.

The analogy or proportion could be expressed as "As A is to B, so C is to D" or, "as A is in B, so C is in D". In the first expression, some sort of Act-potency relationship is said to hold between A and B, and the same is true of the second. This relationship of Act to Potency might be translated as that of the state of being determinable (potency) and the state of being determined (act) or the capacity for a determination (potency) and the determination (act).

The basic notion was derived from observing changes in things, and it was considered that for a real change to take place, the subject of the change must have had the real capacity for it (potency) and that the actual process of change (called motus[1]) or the state attained through it was related to the capacity as determination to determinable. Since this implied a kind of inclusion or composition, the notion was applied to logic, physics, psychology and ethics, analogically.

As applied to the theory of the Categories, Substance, the fundamental category, is related to accident and the others as potency is to act. Accidents were considered determinations of substance, hence perfections of something which had the capacity for this determination or perfection. Thus it can be seen that potency in this instance cannot be considered as something purely passive, inert and amorphous, since substance was taken as what is a being-in-itself, fully constituted, but with the capacity for such accidental determinations as being large or rich or whatever else would not destroy substantial identity.

In physics, the act-potency relationship was seen in the distinction of form-matter, where matter is the determinable and form the determinant when change is considered. It will be recalled that it is change that constitutes something the object of the physicist. Thomas restricts this with Aristotle to corporeal substances, and distinguishes (2) first or prime matter from second matter, (b) substantial and accidental forms and (c) sub-

stantial and accidental changes. Accidental change can be illustrated by the ancient example of the oak carving, where oak is matter and its shape the form. The assimilation of food instances a substantial change. In the first example one spoke of second matter, 'derived' matter, but in a substantial change, "first" or prime matter is involved. Prime matter is that potential element which underlies change universally, second matter is the potential element conceived to underlie a particular change, and comes closer to what we mean by "material".

The difference between these two is easy to see. In the carving of oak, there is only a superficial change in the matter (oak) but the form or shape it possessed is irretrievably lost. In the assimilation of food, the form (physical and chemical properties) of the food persists through the change and could be retrieved. But since a substantial form is considered as the source of all the activities in a substance, and the food-elements now function as integral parts of a new, living substance, their activities are considered integrated into that substance. Quite simply, food is no longer considered to be food, but part of the animal or plant and is no longer a thing-in-itself, substance.

From all of this it can be seen that matter and form, just like act and potency, are not to be considered two things, but principles or elements of things, since neither is conceivable without the other, and the two in union are what constitute an independent thing. Form is considered to be the element or principle (not a separable, physical part) which determines the particular thing to be as it is, gives it its natural character and fixes its degree of being or perfection. Above all it is the principle of unity in a thing, unifying all its disparate activities, by means of which we come to know the form and therefore the thing, and are able to distinguish it from other things. But just as there are substantial and accidental changes, there are substantial and accidental forms. It is an accident, an

accidental form, by which a man is white or black, president or electrician, since he would be still a man were he none of these things. A man, according to Thomas, manifests vegetative, animal and specifically human activities, but for him, there is only one substantial form which is the source and principle of unity for all these activities. Other scholastics admitted a plurality of forms in men - vegetative, animal and rational: it is worth pointing this out, since Aquinas' position on the single substantial form, which in men is rational or intellectual, has important consequences for his treatment of language, for this demands a continuity in human activities, from vegetative to rational, a complete interdependence and interpenetration of the vegetative, sensitive and rational activities involved in knowledge, learning and reasoning. This gives Aquinas' notion of what sensation and intellection are, his explanation of what a concept is, and the relation of soul to body a coloring quite distinct from that of other 'dualist' theories. It is clear that his idea of the soul and its activities are completely at variance with Descartes', which has been termed a theory of the "ghost in the machine".[1]

Since matter and form are two aspects of a single concrete reality, the frequent distinction "_formaliter_" vs. "_materialiter_" in Thomas should be understood in this way: to consider something "materially" is to take it in its concrete totality; to regard it "formally" is to consider a form - substantial or accidental - of the identical thing, and therefore only a particular activity, function, quality or aspect of it. This is the type of distinction which distinguishes phonetics from phonemics. It also founds the possibility of distinguishing between a real and merely a rational distinction.

All scholastics admitted a real distinction between a merely possible essence and its existence, but differed in their positions regarding actual essences and their existence. This is another application of the act-potency relationship and has relevance to

Thomas' view of the problem of Universals. If change is real, act and potency must be really, not just rationally, distinct. Only God is conceived as pure act; in Him there can be no potency whatever. In contingent beings, essence stands to existence as potency does to act. In single beings, this kind of composition results in their individuality and capability for change.

Thomas then distinguishes three problems about essences: the first is an ontological one, the essence ante rem, the second is the physical one, the essence in re, and the third is the logical or psychological one, the essence post rem. An essence can be considered as universal (communicable to many individuals, multiplicable) but this universality is properly in the mind, not in things, which, being concrete, are individual. Because of the abstract nature of our knowledge, sensible and intellectual, Thomas holds that we know things primarilly according to their presence in our conception of them, and not always according to the concrete natmre of the things themselves.[1]

Aquinas' psychology is central to his understanding of language, and a description of those processes requires an explanation of other act-potency notions involved in Causes. The four main causes for him are Efficient, Final, Material and Formal. As in the notion of Being, the term "cause" is analogous. The prime analogate is Efficient cause; causality in general involves a relationship in which a feature of one element is to be explained by the real influence of another. Efficient and final cause are extrinsic to the thing in which their effect is produced, formal and material causes are intrinsic. Final cause is generally an aim, goal or pupose to which something tends, consciously or unconsciously. Matter and Form considered as causes or principles are intrinsic, and their influence immanent within a thing, not transient or extrinsic, as in efficient causes. Only an efficient cause can educe a form from matter.

Other types of cause that Aquinas discusses are exemplary cause (the plan or image according to which an artist works, for instance) and instrumental cause (the knife he uses for his carving). It is clear that the first is a type of final cause, and the second a kind of effieient cause in his system.

With these background notions, a brief sketch of Thomas' psychology can be given[1] and the relationship he posits between sense and intellect explained. This will have to be expanded on other occasions, since it is critical to an evaluation of his theory of language.

Cognition in general, sensory and intellectual, is principally a matter of formal causality for Aquinas. This requires, as we have seen, some sort of efficient cause as well. Physically, all acts of cognition are acts of a man, attributable to his single substantial form, which is called 'soul' in this connection. Thus it is only by abstraction that one can speak of seemingly independent sensory and intellectual operations, but there are important differences in the cognitive acts of men that justify this distinction.

Since he holds that the functioning of the intellect depends on the operation of the senses[2] we can start with his idea of what happens in sensation. The efficient causality involved in the two most important senses for intellectual activity, sight and hearing[3] would be the extrinsic influence of light or sound upon eye or ear. As passive receptors, the usual five external senses are proportioned in their own way to certain activities of other corporeal things, and when acted upon, they are changed. This is an accidental change, and as has been seen, is expressed in terms of an accidental form: it is a change because the sense organ is modified, but accidental because the organ does not lose its identity and independence in being and operation.

Besides the external senses, Thomas discussed internal senses,

such as the _sensus communis_, whose function is to make one aware of external sensations and distinguish among them; imagination and sense memory, which stores traces of past sensations, recalls and combines them into _phantasmata_; and the _vis aestimativa_ which is instinct in the animal, often called _vis cogitativa_ in men, which registers the useful or harmful properties of things sensed.

Both types of cognition are discussed in terms which are derived from vision, as words like _imago_, _species_ and _phantasma_ show. These in turn express one aspect of formal causality, and the whole terminology is used as a conscious analogy, a physical theory similar to that which required the air as a medium for vision. The intelligible species are means, media by which we know, not things that we know, in proportion to that which happens in vision: we need the air to see, but do not see it.

Thus the passive element of sensation is seen principally in the external sense organs, where a _species impressa_ is discussed; the active element in the operation of the sensus communis, imagination and sense memory, which combine sensory images into _phantasmata_, also called the _species sensibilis expressa_. The material condition of the senses and their objects have great importance for intellection, since, if they are inaccurate, proper understanding will be impossible.[1]

The basic principle of Thomas' psychological considerations is that whatever is known, is present within the knower according to the nature of the knower, and not according to the nature of the object of cognition.[2] That means that cognition, which implies a likeness of an object in the knowing power[3] will be present in the material organs of sense according to the material conditions of those organs: extended spatially, temporal, contingent and particular. The soul or _forma substantialis_ of man is said to be spiritual by Thomas, and one of the reasons he alleges for this is the nature of intellectual knowledge: it is atemporal,

not extended, necessary, abstract and universal.[1]

What has been said so far about sensation has a distinct Aristotelian tinge: the latter kind of statement might be considered more Platonic. It is interesting to see how Thomas synthesizes the two. To do this, he makes use of the concept of instrumental causality, the most important notion of which concept is that something can be used to produce an effect of a higher order than its natural activity would call for - the classic example being that of the pen in writing.

The passive aspect of the intellect is called the intellectus possibilis which is related to the intelligible order as materia prima[2], that is, it is capable of understanding anything intelligible at all. In Aristotle's terms, it is capable of becoming anything at all[3]. It is reduced from potency to act by the abstracting activity of the intellect, which, in its active role, is called the intellectus agens 4, whose function it is to abstract an intelligible image from the phantasm[5] and this is accomplished by stripping it entirely of all the conditions of matter, mentioned above[6]. And in all its operations, the intellect must recur to phantasms[7] since its proper object is not subsistent essences of the Platonic type, but forms or essences abstracted from concrete things[8]. The efficient causality required for formal change is thus supplied by the instrumental use made of sensible phantasms by the activity of abstraction, the unlimited capacity for understanding, called intellectus possibilis is the potential element, and understanding itself is conceived as a kind of accidental change, a kind of composition in which the intellect and the thing it understands are one thing[9] something which is consequently distinct from both known and knower[10].

Thomas distinguishes three common types of intellectual knowledge, which can be called simple apprehension, interpretation, and reasoning. Interpretation judges about the truth or falsity of things, simple apprehension does not, but simply accepts something [1] as true. Reasoning proceeds from premisses to conclusions[2].

Because the modern use of the word "essence" seems to insist on the "real", "true nature" of a thing, it is worth pointing out once more that Thomas in all of this is characterizing the nature of our thought as he sees it, and while he holds that abstract knowledge is our highest and most perfect form of knowing[3] and is infinitely superior to sense knowledge[4] it is still an imperfection to know only in the abstract[5] and to be forced to go through discursive reasoning[6]. Still, sometimes we understand, and sometimes we don't, depending greatly on the body's operations, influence of our will, all manner of circumstances. And even when we do "understand", a clear distinction must be made between the kind of relationships we can see as holding between things in our minds only as understood, and those which hold between our understanding and things themselves.[7] Of itself, understanding implies only a relation of the intellect to the thing known, not necessarily relations between things[8]; the fact of understanding says something about the condition of a man, primarily, not necessarily something about things[9]. It is only when we know all the operations of something that we truly know it, since such operations manifest and flow from its nature[10]. Aquinas' position on knowledge and truth is that our knowledge locates us with reference to reality, whereas God's knowledge constitutes it. It is possible to attain to knowledge that is conformed with God's causal knowledge of things, but in a limited fashion, in an inferior way, and only after considerable effort.

Finally, a word about the atemporal, unextended, necessary, abstract and universal nature of concepts which Aquinas thinks peculiar to intellection vs. sensation: He often illustrates this with geometric ideas. A modern example[1] might be seen in the question "Why is a wheel round?" The clue is in the equal length of the spokes. But these can always be set at different depths into rim and hub. To arrive at the definition of a circle, one substitutes a mathematical point for the hub, and mathematical lines for the spokes, and when an infinity of radii are drawn, the "wheel" is <u>necessarily</u> round; it is impossible for the distance from "hub" to "rim" to vary.

But there can be no material image of mathematical points and lines, any more than there can be of impossibility and necessity. In Aquinas' terms, there are no phantasms of such things. But to speak of necessary <u>roundness</u>, some image of center, spoke and rim must be appealed to. A function of intellect is to prepare the best approximate phantasm, then abstract from its limiting imperfections. In this case it is the extension inherent in the material image of a circle.

This illustrates several points: such an intelligible "wheel" can only exist in a mind; it is abstract, unextended, atemporal, necessarily round, has a single content which can be predicated of many things univocally; it is not so much a thing or image as an activity, and this activity always requires reference to some phantasm; being abstract, it prescinds by definition from those aspects of concrete, individual and unique wheels according to which they differ; it is univocal because it does not vary systematically from one application to another, as an analogous concept does, for example when speaking of "healthy" with reference to a man's food, his color, his medicine and his body. It illustrates what Aquinas means by the "potential intelligibility" of the material phantasm, or its "potential immateriality"[2]; as an instrument of intelligence, such an image can be the means of escaping the limitations of matter. The intellect is said to be spiritual, a power of the soul or form, be-

cause its activities in instances like this are not subject to the conditions of matter: temporality, individuality, extension, contingency and so on.

"Being" for Aquinas is then an analogous notion.[1] Its meaning varies systematically when applied to various fields of application. It is not an abstract notion, for there is nothing from which it can be abstracted which is not being. Therefore it cannot be described or defined like a univocal concept. Although it cannot be directly defined, as other abstract, univocal or analogous terms can, there is an indirect definition.

Attempts to define it as a univocal term result in the difficulties of Parmenidies:[2] since whatever differs from it is nothing, becoming, ceasing to be, motion and change are said to be nothing. By confusing the acts of understanding and judgement, Platonism locates the ground of being in an ideal world, completely distinct from the concrete universe. Aristotle, although he locates the ground of being in the concrete universe, still has the same confusion of understanding and judgement, and by putting the cause of being in substantial form, then combinations of substantial form and matter or accidental forms, finds that the content of the notion applies only to substantial form and its implications. What he implicitly was asking for was the cause of being, and since the grasp of form in matter is the grasp of being, he was asking the impossible - what act of understanding precedes the formation of the content of the notion.

Aquinas' indirect definition is in terms of intellect and will. The object of the will is being, called the Good, <u>bonum</u>, and that object is presented by intellect, whose object is also being, called the True, <u>verum</u>. The intellect is potential omnipotence, the unrestricted desire to know, and by nature we desire what we can't achieve[3] and this determines the object of the intellect, since the intellect is capable of becoming everything.[4] Intellect fully in act is necessarily infinite act, and therefore human

intellects are finite and potential only.[1] Being is per se and naturally known to us[2] and cannot be unknown to us[3]. Where Avicenna had thought the active intellect external to us and immaterial, Aquinas finds it internal to us, since it performs the functions described by Aristotle.[4] Augustine had said that knowledge of truth did not originate simply within us, but by means of a divine illumination, in which we regard the exemplary ideas of things in the mind of God; Aquinas agreed to this extent, that our intellects were a participation in divine light, but did not see how we could be said to regard the exemplary ideas of God in themselves.[5] Besides this, our knowledge of being is gained and explicitated by inquiry, whereas God's is *a priori*; our knowledge advances by asking questions, explanatory ("What is it?") and factual ("Is it really so?") For Thomas, then, Being is the whole of what intelligence anticipates; the objective of an unrestricted desire to know, a dynamic orientation. It is whatever intelligent grasp and reasonable affirmation will determine, so that it is open to all the stages of confusion and imperfection from which our knowledge suffers, without ever renouncing its all inclusive goal.

It is in this context that Aquinas' understanding of the infallibility of sense and intellect is to be understood. Error is a fact, and one Aquinas thinks should be accounted for. But the frequent discovery that one has been mistaken, with the consequent awareness of the constant need of revision of our scientific statements, for him, cannot lead to relativism. Just to know that science is a subject of constant revision is to know that some invariant features of human knowledge, and if one knows this, one knows precisely what is not subject to indefinite revision.

This notion of revision is tied to the Thomistic idea of the single substantial form in man and the formal causality involved in knowing. There is no revision without a judgement of fact; no judgement of fact without understanding, and no under-

standing without experience. An act of understanding is not something restricted to soul or intellect, it is the act of a man in Thomas' thought: the act is principally and formally in the intellect but dispositively and materially in the whole unity which is a man[1]. Knowledge, acts of understanding, change a man, he is in process, and is empirically, intelligently and rationally conscious of this. For Thomas, a concept, or rather a conception, is something vital, not static; it is something that is continually becoming rather than something that is frozen.[2] It is the linguistic manifestation of the different states in this process that mainly interests Aquinas in dealing with language.

DEFINITIONS OF LANGUAGE

The typical definition given of "language" by Aquinas is "signum audibile interioris conceptus",[3] and the word for "language" is locutio, which regards principally the spoken form. He finds the fact that language is sound makes it common to men, animals and inanimate things,[4] but only the sounds made by men and animals can be properly called voice (vox).[5] Neither the philosopher nor the logician is interested in the study of the voice as a natural phenomenon, and this study is left to natural science.[6] What is of interest to both philosopher and logician is the meaningful use of voice.[7]

This significant employment of voice is common to both men and animals, but there are important differences by reason of which it is necessary to restrict the name locutio to human language;[8] for the sounds that animals make are meaningful, but have meaning naturally, like the sighs and groans of men, which are therefore the same for all.[9] The meaningful use of vocal soünds which is specifically human is that in which the sounds have meaning through convention,[10] they are thus artificial, and, like everything artificial, are the products of human will and

reason.[1]

Thomas' common definitions of language generally stress the manifestation of intellectual activity: "Language (locutio) was invented to express the concept of the heart";[2] "it is peculiar to man to use language, through which one man may express all his concepts to another... he is thus more communicative than any of the animals called gregarious, like the crane, ant or bee";[3] "language (loquela) is the result of intelligence, since words signify concepts";[4] "the external words are not a sign of the intellect itself, nor of an intelligible species, but of the conception of the intellect, and therefore of the thing with this as a medium";[5] "among us, language is said to be the manifestation of the internal word which we conceive in our minds";[6] "that which is internal to the mind is signified by the external word";[7] "words are formed by men as signs of their intellectual knowledge".[8]

Language is therefore distinguished from non-language on the basis of conventionality, and this is taken to be a consequence of rationality. But rationality is not identical with intellectual activity, though this is an essential part of it. Hence it is that language has functions other than the manifestation of thought processes[9] and it is through his language that man is seen to be a social and political animal.[10]

Rationality consists in the interaction of intellect and will, and any activity can be said to be rational which is not naturally determined to a single goal, and which permits the incentive power of the will. Conventionality distinguishes human language from non-language in its origin, but in its uses, rationality is the norm. In instances where the control of the will is excluded, as in drunkenness or extremes of passion, the use of language is said to be material, not formal.[11] That is, one finds the same physical reality, the articulated sounds, but it is not a rational activity because uncontrollable.

Thomas discusses elicited and imperated acts of the will[1]: elicited acts are those of choosing and desiring, and so acts of the will proper, imperated acts are those of other faculties, particularly the sensitive faculties, initiated or controlled by an act of will. The nutritive powers are not meant to obey the will, are determined in their operation by a kind of natural instinct[2] and are therefore not subject to rationally developed habits.[3] A habit is a kind of disposition that is required when a power has more than one possible object, and when many elements are required for the disposition.[4] Those sensitive powers which can be rationally directed are themselves called 'rational' in a certain sense.[5] This is more true of the appetitive than apprehensive powers[6] but one can develop habits of the internal sensitive apprehensive powers, resulting in better memory and power to think[7] but the same is not true of sight and hearing.

The operation of speaking is then an imperated act[8] and is not in itself an essentially rational act, but one which is rational by participation.[9] Not every such operation requires an explicit rational act preceding it, since determined ends are attained by determined ways[10] and a writer who has mastered the art doesn't have to consider what letters to use.[11] Therefore in matters of little moment, or in affairs such as the arts where the activities are reduced to habits, no explicit consideration is required for the operation[12] which would still be properly called rational: it is rational in origin, since the single substantial form of a man is the source of all his activities; rational control in particular operations is evidently a matter of degree, depending on the difficulty, state of habitual development and freedom from external or internal coercion[13].

SOUND

As a physical reality, language consists of sound. Sound is defined as "a property of the air resulting from a kind of local movement, insofar as the air is disturbed by the percussion of something which produces a movement reaching the ear."[1] This movement is a wave-motion similar to that produced when something is thrown into the water.[2] Thus three things can be seen to be required for the production of sound: an initiator, something capable of sufficient vibration to displace the air, and a medium of propagation. Hard bodies like brass are thus better adapted than soft ones such as a sponge, to produce audible sound, and the medium in which sound travels best is the air, although it is also perceptible in water.[3]

Sounds are not uniform for various reasons. As Boethius points out in his book on Music,[4] there are sounds produced by a single impulse and others by many impulses, and the quality of sound will vary from high to low depending on the frequency of the impulses.[5] Disturbances in the air itself affect the quality of sounds heard[6] and since there can be no sound without a medium of propagation, there is no sound in a vacuum.[7]

VOICE: SPEECH

Voice or speech (vox) is a species of sound. Technically, the term applies to "the sound produced by an animal impelling respirated air through the vocal tract, in association with an image, in order to signify something."[8] While other sounds may have some of the properties ascribed to speech, they cannot be considered speech in the proper sense unless they possess all of the properties demanded in this definition. Thus, certain wind and stringed instruments show three things in common with human speech: melody, continuity through time, and discontinuity due to successive impulses.[9] But they are not properly called speech.

Speech must also be distinguished from the air that is inhaled and exhaled, since it is produced by air stored during respiration. Also excluded by the definition are noises made inadvertantly by the tongue, coughs and hissing noises made without some purpose.[1]

HUMAN AND ANIMAL SPEECH

There are aspects in which human speech is comparable to that of other animals, as well as important differences. For not every sound that animals and men make need be meaningful, and of those that are, some are significant naturally and others only by convention, and this latter aspect is true only of human speech.[2] Human speech is articulated by the tongue and teeth and animal speech is not; human speech can be written, signified by letters, and animal noises nannot be.[3]

Both animal and human speech have this in common, that the noises both make have the root of their significance in the tings that they experience. The effect upon the organisms of such experience is called a passio animae. But there is fundamental difference to be noted:

> "If man were a naturally solitary animal, the passiones animae by which he is conformed to things, would be sufficient for him. But since man is a naturally political and social animal, it was necessary that the concepts of one man should be made known to others, and this is accomplished by speaking. Therefore it was necessary that there be a meaningful sounds, so that men could co-operate. Whence it is that we see men of diverse language have difficulty in co-operating. Again, if man made use only of the knowledge provided by his senses, which have to do only with the here and now, he could live with other men by means of the same sort of significant sounds as the rest of the animals, by which they manifest their concepts to each other. But since man makes use of intellectual knowledge, which abstracts from the here and now, it follows that he is not only concerned with things that are present to him in space and time, but also with things that are distant and in the future. Therefore writing was required for men to communicate their ideas to others who were far away or yet to be born."[4]

WRITING

The letters used in writing stand for the ultimate elements of speech. These are called litterae both in speech and writing, although it would be more proper to call the sounds represented by letters "elements of speech" (elementa vocis) in a vocal utterance.[1] While Thomas takes it as self-evident that human speech is not a continuum, "since a sentence is distinguished into expressions and expressions into syllables, and this is due to the successive impulses of the soul"[2], he does not believe that there can be any further analysis beyond the elementum vocis. The syllable can be further analyzed, he says, because it can consist of a vowel and a consonant, which are different kinds of vocal sounds, but the only difference one can find between different instances of the individual vowels and consonants is in duration. Any further analysis of individual vowels or consonants varying only in the duration of utterance would not resolve them into parts differing in kind, in the same way that division of water into parts only gives smaller parts of the same thing, water.[3]

The utility of writing is that it prevents the distortion of communications: just as sounds can be distorted to the ear over a long distance[4], so too, over a period of time, one forgets exactly what has been said, and no two people agree exactly in their report of it, but this difficulty can be overcome by writing, which is thus in many ways clearer than the spoken word.[5] But it is clear that of its nature, writing is nothing more than symbols of speech sounds.[6]

SPEECH AS A NATURAL PHENOMENON

No one has ever doubted that writing is a sign of speech sounds only through convention: there is no natural similarity between the shape of the letters and the sounds produced[7] since it is evident that different languages use different sounds,

and different letters for them[1]. But there seems to be a sense in which sounds are naturally formed, and "therefore some men wondered if their meaning was not equally natural."[2] On this point Thomas agrees with Aristotle, that the only naturally meaningful sounds that men produce would be such as the groans of the sick, and some manifestations of joy or sorrow.[3] As for the natural production of the sounds of language, it is not impossible for bodily organs to have more than one function, such as the tongue for taste and speech, but not usually at the same time[4]. All the organs of speech have more than that single function: the lungs for respiration, the throat in which the voice is formed, the tongue, teeth and lips, by which sounds which can be written are articulated, so that utterances and the various parts of speech are not strictly speaking natural objects, but artefacts. And since the artisan always determines the nature of what he produces, the meaning of these utterances is not determined by their physical constitution, but by the decision of the speakers.[5] What is strictly natural about the whole process is man's ability to signify his concepts, but the determination of the meaningful signs is conventional.[6]

SIGNS

Letters are the signs of sounds, sounds are the signs of the passiones animae, and these latter are the signs of things. But the relation of sign to signified is not the same. Letters and sounds are conventional signs. The passiones animae are natural signs.

For Thomas, a sign is "something that, besides the impression it makes upon the senses, makes something else other than itself known to us."[7] In the case of a natural sign, there must be a similarity between the sign and the thing itself it stands for, since a causal relationship in the physical order is necessary for anything to be a natural sign of something else. More

specifically, a natural sign is either a principal effect of the thing we come to know through it, or it proceeds from the same cause. Thus smoke is a natural sign of fire because it is one of the principal effects of fire; a rainbow, however, is sometimes a natural sign of calm weather because it can proceed from the same causes that will produce calm weather.[1] Because there is this relationship of causal dependence between natural signs and what they stand for, they are the same for all men, although some recognize them as such more quickly than others.[2]

Conventional signs are quite different from natural ones. Anything at all can be _made_ a sign: actions[3], gestures[4], things[5], but the most familiar and the best adapted for their function are vocal signs.[6] Where some sort of similarity is demanded between natural signs and what they signify, all that is required for something to be a conventional sign of something else is that men agree to consider it as such.[8] Natural signs are not _made_ to be signs, but _are_ signs: conventional signs of themselves are not signs, but only become so through such agreement.[9]

DICTIO

Besides the word _vox_, Thomas frequently uses another general term in discussing these linguistic signs, and that is _dictio_. Where the primary connotation of _vox_ is that of the spoken word, his use of the temm _dictio_ shows that he most often has a written form in mind. The elements of a _dictio_ are letters[10]; it refers to a combination of such elements which can be pronounced with different accents, durations, juncture, or with or without aspiration[11] with a consequent different meaning. It is the shape of a word, independent of its meaning[12], or the shape of a word insofar as it is similar to the shape of another word[13].

Thomas assigns three accents to Latin words: the acute accent, which raises the pitch and lengthens the vowel, as in the second syllable of _Martinus_; the grave accent, which lowers

the pitch and shortens the syllable, as in the second syllable of Dominus, and the circumflex, which rises and then falls, as in the first syllable of Roma. A given dictio may be pronounced with more than one accent, which changes the meaning: e.g. péndere means 'to esteem or prize' but pendére means 'to hang'.[1]

Because of the incomplete phonetic notions he uses, Thomas would say that the two forms pōpulus (the people) and pŏpulus (poplar tree) are one dictio, differing only in the duration of the "same" letter o[2]. Since a dictio is considered as a sequence of letters, the group quies can either be one dictio or two: either quies (rest), or qui es (who are).[3] Again, a given sequence may be pronounced with or without aspirations, as in this fallacious syllogism: "Quicquid hamatur, hamo capitur. Sed vinum amatur. Igitur vinum capitur." (What ever is hooked is caught with a hook; but wine is liked, therefore wine is caught.)[4]

Another notion fundamental to dictio is that it is simple, whereas an oratio is composite. The basis of this distinction is the meaning, so that if the sequence non currit is taken as the negation of a finite verb, one has to do with two dictiones, but non currit as the indefinite verb is said to be a single dictio[5]. Thomas explains this difference in terms of matter and form. Materially, the sequence non currit is identical in both instances, but there are two functions, hence two forms, since the form of anything is the source of its functions. While any dictio is known to be a significant part of the language, it is not being considered as determinately significant when discussed as a dictio; when the determinate signification is discussed, the same expression is called a pars orationis, not dictio.[6] Hence a word considered materially is a dictio, considered formally, it is a pars orationis.

An example of his usage is the following passage:

> "It is said that a single sentence is potentially many because of that fact that the dictiones composing it may be construed in various ways, as in "Quicquid vivit semper est": this dictio "semper" may be construed with the verb "vivit" or separately from it. Now a sentence is constituted

> by the way the parts are put together, so that the parts are regarded as the matter, and the mode of construction is regarded as the form. So we can find that where the same parts are used, but differently constructed, this one and the same sentence can be said to be materially and potentially many sentences while it is not actually and formally so. It is said to be potentially many sentences because any given sentence which is formally one, is still potentially capable of signifying many things."[1]

These remarks are meant to clarify the fallacy of Composition and Division, since the sentence given as an example will have a different meaning, depending on whether the _semper_ is linked to or separated from _vivit_. Here it is possible to choose between two different constructions of the same _dictiones_. But in the fallacy of Amphiboly, Thomas says that there can be different interpretations, even though the _dictiones_ and their construction remain identical. Thus, in _liber Aristotelis_, one could interpret the same construction as "the book that belongs to Aristotle" or "the book that Aristotle wrote."[2]

Thus the tem _dictio_ is used when a form is discussed which is known to be a meaningful part of the language, but in abstraction from the determinate function it has in a sentence, since this can be discovered only in actual use in a sentence. But there is a second common use of this term, and that is to distinguish the use of a single word as a proposition from words as parts of a proposition:

> "A word may have two kinds of meaning, one of which is a simple concept, and the other a judgement. The first kind is proper to a part of a sentence, and the other to the sentence itself...
>
> This amounts to saying that a part of a sentence has meaning in the way that a _dictio_ does, for example, a verb or a noun, but not in the way that an affirmation has meaning, since this is composed of a noun and a verb."[3]

This calls attention to some differences between logical and grammatical form, since a single word may stand for a true or false statement, while some grammarians may wish to require more than one word for a sentence:

> "A noun or a verb is a _dictio_, that is, a _dictio_ insofar as they are not a proposition. And he (Aristotle) speaks this way it seems, because he invented this name for the parts of a proposition. And the reason is that one would not say that someone is making a judgement when he uses a word to mean something in a way that the noun or verb usually have meaning.
>
> To illustrate this, he mentions two ways of using a statement. For sometimes we do so in reply to a question, as when someone might ask "Who is in the school?" and we answer "The teacher." But sometimes we do so spontaneously and when no one has asked a question, as when we say,"Peter runs"."[1]

Another use of the term _dictio_ shows that Thomas considers it as a sequence of sounds which is capable of fulfilling various functions in the language:

> "....therefore he says that a part of a sentence is independently significant, but not that kind of a part which is just one syllable of a noun.
>
> And he shows this in syllables which can sometimes be _dictiones_ with independent meaning; as when I say _rex_, which is sometimes an independently significant _dictio_; but insofar as it is taken as one syllable of this noun _Sorex_, _Soricis_, it does not mean anything by itself, but but is only a sound (_vox_)....
>
> ....But a note that in compound nouns which are used to signify a simple thing by means of a composite concept (e.g. blackbird) the parts appear to mean something, but they do not.... mean anything separate."[2]

In the same way, one must always attend to actual use of a form to decide upon its function. While the _dictio_ _curro_ would appear to be a verb from its shape, it functions as a noun in a sentence like "_Curro est verbum_" and in an employment like this, so would all the other parts of speech.[3]

CATEGOREMATIC AND SYNCATEGOREMATIC EXPRESSIONS

There are two basic kinds of *dictiones*, categorematic and syncategorematic. The former signify something considered as an independent entity of some kind, the latter signify only relations between one thing and another.[1] The distinction arose in formal logic. What we would now call logical variables, such as subject and predicate, are the categorematic expressions; the logical constants or quantifiers are syncategorematic. Thomas uses the terms in discussing sentences that can be true or false, and does not restrict them to formal logic.

A given *dictio* is neither categorematic nor syncategorematic ot itself, but becomes so only in specific instances, since the categorematic expression signifies something "considered" as an independent unit, and this will vary with individuals and from one case to another. In strict logic, of course, the number of syncategorematic expressions is definitely limited, and their functions not subject to whim.

But in more ordinary discourse, an expression like *solus*, for instance, may be either categorematic or syncategorematic. If categorematic, it "assigns the thing it signifies to a subject absolutely", that is, as a property which can be considered apart from the subject; if syncategorematic, it "means a relation of the predicate to the subject, as does a *dictio* like *omnis* or *nullus*." So in "*solus Socrates scribit*", if the *solus* is used categorematically, it means "Socrates is alone and he is writing"; if syncategorematically, "Socrates is the only one writing."[2]

Thomas credits Plato as being among the first to invent such technical terms and illustrates their necessity:

> "A certain number of *dictiones* have been invented to indicate the different modes of predication, and these can be called signs or determinations, for indicating that something is predicated of the universal in one fashion or another. But because people do not generally apprehend

> that universals subsist outside of singulars, there is, consequently, no particular *dictio* in the common usage which indicated that mode of predication.... But Plato, who held that universals subsist apart from singulars, invented some determinations to show that something is attributed to the subsistent universal apart from singulars, and so he called this subsistent universal, in the case of 'man', *per se hominem* or *ipsum hominem*..."[1]

Thomas does not call particular attention to morphological criteria[2] but from what he has to say it is evident that he takes it as self-evident that there is a difference between the logician's use of expressions like Noun and Verb, semantically defined, and the grammarian's, morphologically determined. As he pointed out in Plato's use of words, a particular speaker may have an insight not shared by everyone in the community (*modus intelligendi*) and in order to express this, he uses words which have the same form and similar grammatical behavior as those in common use, but with a different meaning. This external similarity can be a source of deception, and is called the Fallacy of similar Form (*Fallacia figurae dictionis*):

> "... and so in this fallacy, there is not a multiple turth but only apparently so, since one *dictio* does not actually signify many things, but has a single way of signifying (*unum modum significandi*) and seems to have a different one. The cause of this seeming to be so is the similarity of one *dictio* with another dictio; and the reason why it is not the case is the different way of signifying."[3]

On the basis of their form, a grammarian would identify *curro* and *ambulare* and *moveri* as verbs and assign them typical meanings as particular parts of speech. Thomas accepts this, but does not believe that particular parts of speech always function in a typical way:

> "...the verb can only be used as a predicate, while the noun and participle can be used both as subjects and predicates. But we seem to have an exception when the infinitives are occasionally used as subjects, as in *ambulare est moveri*.
>
> But we must say that infinitives, when used as a subject, have the force of a noun, and that is why they take the article in both Greek and vulgar Latin, just like the nouns."[4]

> "If it is objected that verbs in other moods are also used as subjects, as in <u>curro est verbum</u>, it must be said that in expressions like this, the verb <u>curro</u> is not taken formally, in which case its meaning would be referred to a thing, but materially, as signifying the word <u>curro</u> itself as a kind of thing. And therefore all the verbs, and indeed, all the parts of speech, when they are used materially, are taken to function as nouns (<u>in vi nominum</u>)"[1]

Infinitives used with the article are taken formally, as far as their meaning is concerned: that is, <u>ambulare</u> stands for the activity of walking, not for the word <u>ambulare</u> itself, which would be to take it materially. Thomas himself uses the article <u>ly</u> with words to be taken materially[2], or prefixes <u>haec dictio</u> before the word so considered[3].

Although this distinction of categorematic and syncategorematic expressions is basically logical, it is useful in speaking of the grammarians' parts of speech insofar as they have typical meanings in the sort of sentences Thomas considers most, that is, statements which can be true or false. For him the verb and the noun (which includes the adjectives[4]) are typically categorematic, other parts of speech syncategorematic:

> "...Another question might be why the other parts of speech are omitted (i.e. in the <u>De Interpretatione</u>) and only the noun and verb defined. One might say that since he intends to clarify the simple sentence it is sufficient to treat only those parts of a sentence which are necessarily part of the simple sentence. For a simple statement may be made up of only a noun or a verb, but not other parts of speech without these, so it is enough for him to define these two.
>
> Or one might say that only the noun and verb are the principal parts of speech, for under the nomen are also included the pronouns, which, even though they do not name a nature, do determine person and therefore can take the place of a noun. The participle is also included under the verb, although it has affinity with the noun. The other parts of speech are more like links, signifying the relation of one part to another, than parts of speech themselves. Just as nails and things like that are not so much parts of the ship, but serve to hold the ship together."[5]

Although the distinction of parts of speech pertains to grammar, the point of view here is logical:[1]

> "There is question of the noun and verb here only in so far as they are parts of a proposition (<u>enunciatio</u>), for each science defines its own object and the properties of its parts... since the parts of a composite are its causes (<u>principia</u>) anyone who wants to discuss the proposition should be clear about its parts."[2]

Even within Logic there are several ways in which simple words can be discussed:

> "If anyone is surprised that it should be necessary to define the noun and verb again, since simple words have already been dealt with in the book <u>Categories</u>, it should be noted that there are three ways of considering simple <u>dictiones</u>. One is to take them as meaning simple concepts, and that is how they are studied in the <u>Categories</u>. Another is to consider their function as parts of a proposition, and that is how they are dealt with here..... When regarded as elements of a syllogism, they are called <u>terms</u> and that is how they are defined in the <u>Prior Analytics</u>." 3

LOGIC GRAMMAR AND IDEOGENESIS

These three ways of regarding simple words from different points of view are explained in terms of matter and form. The material object in this instance would be a given word; the formal object is the function of this same word in three different viewpoints. Sciences can be distinguished because they deal with quite different things (material objects) or because they deal with the same things from different points of view (formal objects). Thomas says one science differs from another because of its formal object.[1]

The noun and verb, for instance, can be considered as a concept in the mind, or as expressed vocally, or as written forms.[2] Although Logic is concerned with the meanings of words it does not have the spoken or written form as its material object. That is the province of the grammarian[3]. Logic is concerned with the meaning of words, since their immediate meaning is an act of the mind, and only mediately do they stand for things. In other words, linguistic forms are signs but not _signifiés_, but concepts are both signs and _signifiés_.[4]

There is a sense in which Logic can be said to deal with all things, even though its proper material object is an act of the mind[5], and its formal object this mental activity regarded as an _ens rationis_:

> "_Ens rationis_ is applied properly to those notions which reason discovers in considering things, like the notions of genus and species and such, which of course do not exist in nature, but are the result of the mind's activities. It is things like this, _ens rationis_, which is the thing Logic studies. But these intelligible notions are comparable to natural things, in that all _entia naturae_ fall under the consideration of reason. And therefore the subject of Logic applies to everything which can be called an _ens naturae_."[6]

But these acts of the mind are likenesses, natural signs of things experienced, so they are studied in logic, not for themselves, but as helps in the development of other sciences[7], since logic lays down the way in which all sciences should go about their work[8]. It is thus propaedeutic and an instrument of other sciences

and normative with respect to these other sciences[1]. Considered in itself, logic is a science, affording actual, certain and necessary knowledge, deduced from principles[2]; with respect to other sciences, it is an art, a rational organization of determined means for acquiring a particular goal[3], the right way of doing or making something[4].

Logic as Aquinas understands it, extends far beyond the restricted field of formal logic, medieval or modern. For this reason, it will be worthwhile to give his rather lengthy introduction to the Posterior Analytics, since it will bring out the difference between the branches of logic and grammar, which he does not discuss as explicitly as one would prefer:

"As Aristotle says in the beginning of the Metaphysics[5], the race of man lives by art and reasoning, and in this the Philosopher seems to have touched upon something peculiar to man as opposed to the other animals. For the other animals are brought to their acts by a kind of natural instinct, but man is directed in his acts by the judgement of reason. That is why the various arts are helpful in the easy and orderly performance of human acts. For art seems to be nothing other than a determined ordering by the mind of how human acts can arrive at a proper goal through certain means.

But reasoning is not only capable of directing the acts of inferior parts, but can direct its own activity. For this is peculiar to the intellectual part of man, that it can reflect on itself; for the intellect can understand itself, and the reason can consider about its own act of reasoning. Now if the arts of carpentry and building were invented because the mind could reason about the activity of the hand, so that men could carry on these trades in an efficient and easy fashion, by the same token there is required a kind of art which should direct the activity of reasoning itself, so that a man can proceed in his thinking in a simple and orderly manner, without error.

And this is the art of Logic, that is, the science of reason. It is not just a rational science because it proceeds rationally (for that is common to all the arts) but especially because it is concerned with the acts of reasoning as with its own proper matter.

That is why it seems to be the art of arts, because it directs us in the act of reasoning, from which all the other arts proceed. Therefore it is fitting that Logic should take its parts according to the diverse acts of the mind.

But there are three acts of the mind, of which the first two are conceptual.

For one act of the intellect is the understanding of simple or indivisible things, by which it conceives what a thing is.[6] This operation is called by some the 'informatio intellectus' or imagination of the intellect, and the teaching of Aristotle's Categories is concerned with this. The second operation of the intellect is the composition or division of concepts and in this

we already find truth and falsity. The doctrine contained in the Peri Hermeneias is concerned with this act.

The third act of the mind follows frommwhat is proper to reasoning, that is, discoursing from one thing to another, so that one can arrive at something which was not known from something already known. And the rest of the books of Logic are concerned with this activity.

It shouldbe noted that in a certain fashion, the acts of reason are like natural acts. Therefore art imitates nature as far as it can. But one finds three different kinds of natural acts. In some of them, Nature acts necessarily, so that it cannot fail. In others, it acts for the most part, although it can occasionally fail in its proper acts, so that here there are really two kinds of acts, one which is the more frequent (as when a perfect animal is generated from a seed) and the other when nature falls short of what is convenient to it (as when a monster of some sort is generated from a seed because of the corruption of some principle).

And these three are also found in the acts of reasoning. For there is a kind of rational procedure which entails necessity, and in which there cannot be any imperfect truth; and it is through this kind of reasoning that the certifude of knowledge is attained. But there is another kind of procedure in which one arrives at truth for the most part, but without entailing any necessity. The third reasoning process is the kind where one fails to attain the truth because of some defect in one of the principles that had to be observed in reasoning.

The part of logic which is concerned with the first process is called Judicative because the judgement is made with the certainty of knowledge. And because a certain judgement cannot be had about things which are effects except by reduction to first principles, this part is called Analytic, that is reductive.

The certainty which is attained through such reduction is due either to the form of the syllogism alone (and the Prior Analytics, which deals only with the syllogism, treats of this) or it is due to the form as well as the matter of the syllogism, because necessary propositions are dealt with (and that is what this book, the Posterior Analytics, handles, the demonstrative syllogism).

The second act of reasoning is discussed in another part of Logic, called Inventive, for this kind of discovery is not always certain. That is why a judgement is required about the things discovered, in order to have certainty. But just as in natural things which occur only for the most part, one finds degrees (since the stronger a natural principle is, the more

rarely will it fail to produce its effect) so too in a process of reasoning that is not altogether certain we find a kind of scale according to which more or less perfect certainty is approached.

Through a procedure like this, of course, we sometimes do not attain to knowledge, but only belief or opinion because of the probability of the propositions from which it starts: for the reason settles completely for one part of a contradiction although it cannot exclude the other entirely (and this type is dealt with in the Topics or Dialectics). For a dialectic syllogism is based on what is more probable, and Aristotle treats this in the book Topics.

Sometimes a reasoning process does not result in a firm belief or opinion, but only in a tendency to believe or in a suspicion of where the truth lies; one does not settle completely for one side of a contradiction, although there is a tendency to one rather than the other, and this is dealt with in Rhetoric.

Finally, there is sometimes merely a preference for one side of a contradiction because of the way it is presented, much in the way that a man finds some kind of food disgusting if it is portrayed to him as something disgusting. This is the kind of thing dealt with in Poetry since it is the task of the poet to lead to something virtuous through a fitting representation.

All of these pertain to Rational Philosophy, for it is the task of reasoning to lead from one thing to another.

The third reasoning process is dealt with in that part of logic called Sophistics, and Aristotle handles it in his Elenchi"[1].

Just as Thomas speaks here of Logic as both an art and a science, he speaks of grammar in the same way, but there is a fundamental difference between them. "Science" in its proper sense is the actual, certain and perfect knowledge of something, that is, of an effect precisely as the effect of a given cause. As such, it must proceed from propositions which are true, ultimate and immediately evident. These propositions are 'immediate' because they themselves cannot

be demonstrated by more evident ones, they are 'ultimate' with respect to other propositions which are proven by the ultimate ones.[1]

For this reason, we have "Sciences" only about things which cannot be other than they are, therefore about universals, not singulars and individuals[2], and they are not practical, but speculative, such as Mathematics, Physics and Metaphysics.[3] Practical sciences are concerned with artifacts[4] and these are necessary as artifacts only with respect to the purpose to which they are put[5]. In a speculative science, all that is aimed at is knowledge of its object; the purpose of practical sciences is the construction of its entire object.[6]

Now this putting-together of artifacts for a particular purpose is called an art, as was seen above: but any art, once its presuppositions have been accepted, has a demonstrative procedure, and that is why they are called sciences[7]. The 'necessity' of these sciences is due to the fact that a science is to be built up in a logical way in view of its own particular purpose, and because it will be possible to check logically to see if it is being applied according to its own recommended procedures in specific instances[8]: common to all such sciences is the presupposition that contradictories are not predicated of one another.[9]

It is this appreciation of order which marks the wise man, since the senses can only perceive things in themselves, whereas the reason can appreciate their relations to each other. Depending on the kind of order, and its source, the various speculative and practical sciences differ:

> "Order can be compared to reasoning in four ways: There is a certain order which is not imposed by reason, but is only considered, such as the order of natural things. There is another order which the reason produces in its very act of considering, for instance when relating its concepts to each other, or in relating meaningful words, the signs of concepts. A third order is that which reason considers in acts of the will. But the fourth is the order which the reason produces when considering external things of which it is the cause, such as a box or a house. .... natural philosophy considers the order which it perceives but does not impose... rational philosophy the order it imposes in its own activity, such as the consideration of the parts of a sentence to each other, and the relation of principles to conclusions... the order belonging to things constituted by human reason belongs to the mechanical arts."[1]

It can be said that there is one science when the things studied are of the same kind, but there will be different sciences when the point of view changes with respect to the same objects, or different objects; but it is still possible to have a unified science which deals with quite disparate objects. For instance, it is one and the same science of Harmony that studies the human voice and the sounds of inanimate objects, since its principles are identical in music.[2] In Thomas' terms, while the material objects differ, the formal object remains the same. These distinctions are basic to the relation between Logic and Grammar, since no science proves anything about the subject of another unless one is subordinate to the other. Mathematical sciences illustrate one mode of subordination, in which the principles of one science are applied to the subject of another, as form is applied to

matter: several sciences take their principles from pure mathematics and apply them to sensible things. The science of Perceptive applies to a visible line what Geometry proves about abstract lines; Harmony in music applies to sounds what the mathematician studies in numerical proportions; Astronomy applies to the stars the findings of geometry and arithmetic.[1] Another way in which one science is subordinate to another is when it studies what is a species of the genus considered by the superior science, as 'animal' is a species of 'natural body', and therefore to this extent, sciences about animals are subordinate to natural science.[2]

It would appear that Logic and Grammar are subjects which have words as their subject in common. But for Thomas, these two sciences not only differ in their overall purpose, but in their material and formal objects as well.

The overall purpose of logic, the use to which it is put, is to gain knowledge of things, insofar as it lays down the proper procedure for all other sciences[3] so it is not interested in words for themselves. Its material object is not a word, but the acts of the mind, of which words are the immediate signs,[4] and its formal object is an act of the mind considered as a kind of thing, an <u>ens rationis</u>.[5]

The overall purpose of grammar is to insure correct speech[6]. Its material objects are spoken and written words[7] and the formal object is congruity.[8]

The only sentence-types which interest the logician are those which are signs of a judgement which can be true or false. The other types are studied by poets, rhetoricians

and grammarians. As far as the meaning (_significatum_) of vocative, interrogative, imperative and deprecative sentences are concerned, they are the province of the poet or rhetorician. What the grammarian studies is their congruity.[1] It seems that 'congruity' for Thomas concerns only the correspondence of the accidents of declinable parts of speech[2] such as the agreement of gender or number, and the proper case after verbs:[3]

> "A Solecism is an offence against the rules of the art of grammar, in putting together the parts of a sentence, such as _vir alba_ and _homines currit_; and someone might be misled by a sophistry like 'Tu scis hoc. Hoc autem est lapis. Ergo tu scis lapis' which is not said grammatically."[4]

In order to speak grammatically, it is necessary to apply the rules of grammar consciously, not just by chance or by mimicking a grammarian.[5] Of course, the rules of grammar are not needed for anything but speaking as a grammarian: when the rules are unknown or not observed, one can still speak intelligibly and even effectively, as is evident in our ability to see through fallacies. Even when the rules of grammar are observed quarrels can arise, but here -

> "It is a quarrel not about things, but about the meaning of a word, which is conventional; thus in such a dispute, usage is of the greatest importance, since we ought to use words as most people do.... and when there is no difficulty about the things concerned, it is vain to have a controversy about words."[6]

In arguments like this, a decision must be reached by looking at the facts, not at the words. Thomas uses the expression "_proprietas vocabuli_" to indicate some feature which is suggested by its use or structure, and whenever this

is mentioned it is usually to point out that the apparent meaning of the word does not conform to its real meaning, or that the real meaning is supported even by the form. It is also frequently pointed out that disagreements cannot be settled by appealing to the forms. E.g.

> "Sacramentum secundum proprietatem vocabuli videtur importare sanctitatem active, ut dicatur sacramentum quo aliquid sacratur, sicut ornamentum quo aliquid ornatur..."[1]

In discussing the text "Nemo novit Patrem nisi Filius" he concludes -

> "... melius potest dici quod haec dictio 'nemo' habet aliquid ex proprietate significationis et aliquid ex usu nominis. Ex proprietate significationis habet quod 'nemo' significat idem quod nullus homo... Ex usu loquentium habet quod 'nemo' distribuat pro omni intellectuali natura..."[2]

So the kind of 'meaning' that the grammarian deals with is the kind that words of a given structure usually have, and what would therefore expect to find in a given instance.[3] It is not the task of a single science to investigate both words and things[4], and

> "There is no science which demonstrates that this word means this thing. For words have meaning by convention, and so we have to presuppose this according to the intention of the one who made up the word (secundum voluntatem instituentis)"[5]

Setting aside the definitions of words for particular sciences then, how does one know what a given word means? The grammarian is of no help here, aside from giving the typical usage, as, for instance, in defining the noun as signifying substantia cum qualitate:

> "When it is said that a noun signifies substance with a quality, it is not understood as quality or substance in their proper sense for the logician who is distinguishing among categories. The Grammarian takes substance as a way of signifying (secundum modum significandi)

> and similarly, quality. And thus, whatever is signified by a noun, is signified as existing independently, inso far as something can be predicated of it, even though in actuality it does not exist independently, like albedo. What is stated is that it signifies substance as opposed to the verb, which does not mean something as independently existing."[1]

The meaning of words "is to be taken from what speakers commonly intend to signify by the word"[2]. Even those who are not grammarians would accept their terminology, so that "according to common usage, a word which means time is called a verb rather than a noun."[3] And even when one speaks in a manner that distorts words considerably, either through ignorance, or some defect of the tongue, the meaning would be acceptable usage, as long as the word is not distorted so much as to make it mean something different; in Latin, for instance, corruptions of the endings are more tolerable than those of the first part of the word, since that would change only the consignification, whereas alteration of the first part of the word would change the meaning[4], but in Greek the reverse would be true, since change of the beginning of the word would alter only the consignification.[5]

A practical way of finding out what a word means, like 'magnanimity', would be to observe those men to whom the term was applied, to see what they had in common and how they differed, since the best way to know something is through something more evident[6].

Normal usage shows regularities, and attention is called to this in dealing with the fallacies of composition and division: "...adverbs more generally modify verbs than participles, and the main verb rather than the subordinate verb."[7]

Despite this radical conventionalism of the external expressions of language, Thomas follows Aristotle in holding that there are self-evident and indemonstrable principles whose truth is manifest merely by knowing the terms in which they are expressed, such as being and non-being, whole and part in principles like "A thing cannot be and not be at the same time", or "A whole is greater than its parts". Here, "knowing the terms" of course means more than just being acquainted with the particular words in the language. The various branches of logic and Metaphysics as well deal with such principles:

> "...there are other sciences which use these ultimate principles in a manner different from what has been described. Dialectics is about basic things (de communibus) and so is another science, that is Metaphysics (philosophia prima, basic philosophy)...
>
> But Logic, Dialectics and Metaphysics concern themselves with basics from different points of view. For Metaphysics is interested in the basic Things themselves, that is, Being, its parts and properties. Since reason has to deal with everything that is in things, Logic on the other hand deals with the operations of reason, so what Logic deals with are the notions (intentionibus[1]) of reason which apply to all things, but not in such a fashion as to have the things themselves as its subject.
>
> For the subject of Logic includes the syllogism, the proposition, predicates and such like. And while in teaching, that branch of logic which is called demonstrative is concerned with these basic notions, its use does not consist in starting with them to prove something about things which are the subjects of other sciences. But that is what the dialectician does... so Dialectics is about these common principles, not just because it handles the common notions of reason, which is true of the whole of Logic, but because it also is concerned with the common principles of things..."[2]

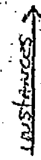
These first principles are indemonstrable since there is nothing to which they can be related which is more clear: they can be 'proven' only by pointing out the contradiction involved in denying them[3]: they are a habitual cognitive power and orientation which rational beings have intellectually, and all

animals in their senses, since they naturally judge about sensible things. All perfect animals have sensory memory as well, but only men have the power of reasoning, by which they abstract universals, features common to individual objects of sensation, through their memory of, and ability to imagine, what they have experienced. Not that there are any complete and determinate cognitive habits which preexist sensation in us: these first principles arise from our reflection upon previous experiences, but since universal knowledge involves an independence from the conditions of the material world and sensible perception, one concludes that it is the nature of the soul which makes such knowledge possible.[1]

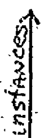
The following diagram sketches Thomas' idea of what there is to know, how man knows it, and the resultant status of that knowledge, and indicates the difference between intellection and sensation, and the differences between the three intellectual acts as well. It is upon these distinctions that he bases his treatment of language from the viewpoint of one step or another.

ACTS	OBJECTS
SENSATION (concerned with)	THE CONCRETE, unique, intrinsically mutable, spatio-temporal
MEMORY and IMAGINATION	TYPICAL CONCRETE UNITS alone or in juxtaposition spatially, temporally, still intrinsically mutable
UNDERSTANDING	ABSTRACT UNITS AND RELATIONS, inextended, atemporal, immutable, universal
JUDGEMENT	RELATIVE NECESSITY of Abstract Units and Relations
REASONING (results in)	KNOWLEDGE or HYPOTHESIS

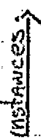
via
Sensus Communis

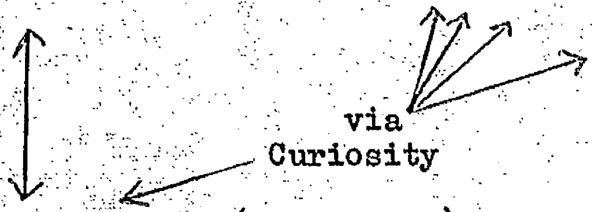


via
Abstractive Intelligence



via
Comparison





via
Curiosity

This chart represents the cognitive activity of man in Thomas' doctrine, an activity which responds to the impressions received from the external world in both a receptive and creative manner, with sensation as its indispensible initial step and reasoning as its highest function.

Sensation is concerned with external things in their concrete existence, an inseparable part of which is change. External things are therefore unique at each moment of their existence, and successive sensations of them equally unique. Through the <u>sensus communis</u> the impressions of the external senses are combined to form an image of the object of sensation which can be recalled. Subsequent sensations of an object can be considered instances of this remembered image, or new images can be formed for objects which differ from former experiences significantly. These images themselves are particular and individual, and therefore as unique and intrinsically mutable as the concrete things which are instances of them.

But Understanding is only of things which cannot be other than they are, unchangeable, necessary, atemporal, and inextended. No particular thing and no image has these properties. This 'universal concept' is a product of the activity of intelligence, abstracting those elements from images which makes them particular. The images and concrete things are instances of what is understood. The concept of water does not contain the particulars which are necessarily a part of particular water - temperature, pressure, location, purity, density and so on, but an image is of particular water, and only water here or there with these properties or those actually exists. In a concrete situation <u>what</u> is known is this water, not the universal concept (except by reflection upon this activity of abstraction) but the <u>means</u> of knowing is the concept. What is understood is not this

particular water, but this water as an instance of the universal concept (except by reflecting on the activity by which the concept was produced) although the means of knowing the universal concept is its concrete instance. Both sensation and understanding are activities of a man, but sensation is more something that happens to a man, and understanding is more something a man does than what happens to him. Understanding is always dependent upon the imagination, but what the intelligent man does is to arrange the images now in this order, now in that, until one arrangement "makes sense". Universal concepts are "intelligible images" and it is not profitable to speak of them as true or false, terms applicable only to judgements. But in use, they will be found to be adequate or inadequate.

Truth and falsity are applied to judgements which affirms the degree of connection between things as understood. They are said to be, or are denied to be, necessarily connected, or probably so, or dubiously. When evidence is wholly lacking, judgement is suspended. In this connection, truth is said to be the conformity of the mind to reality, and verification will depend on the object affirmed. If it is a sensible object, sensation is appealed to; if it is a speculative object, such as a mathematical notion, one can only appeal to the understanding, since Thomas holds that mathematical, metaphysical and <u>physical</u> (in the medieval sense)[1] notions are related to the understanding in exactly the same way as the objects of sight are to the eye: you either see or you do not.

When one has understood, and then judged things to be as they are understood, and found that they actually are as understood and affirmed, curiosity causes one to wonder why. Reasoning then takes the results of experience, understanding and

verified judgements and performs many functions upon them, among which would be deduction of facts implicitly contained in what has already been found to be true, the construction of a science which accounts for all the actual connections discovered, or the proposal of such a construction as the basis of further reasoning. Curiosity is not satisfied, and reasoning continues, until an ultimate principle is found which explains all about a given field of inquiry and which does not itself require further justification, or for which no further justification can be given.

With the aid of this explanation and the chart, several points about scientific procedure, the relation of different sciences, the origin of man's knowledge and his expression of it can be illustrated.

For instance, the arrows that indicate the mutual dependence of one act upon another show the consequences of Thomas' opinion about a single substantial form in man. A man does not consist of independently operative, watertight compartments or faculties: he is a single unit whose co-principles are body and soul, neither of which is complete without the other. Although a logical progression of activities has been presented, all of these can be simultaneous and mutually stimulating: sharp sensation can stir the imagination, call for understanding and judgement and may lead to a theory. Even the absence of expected sensations can be a challenge to understanding and theory.

Read in different directions, the order of discovery and exposition can be distinguished. Either can start with or result in an explicit theory, or an implicit theory. From bottom to top, one can see that an implicit theory dictates different kinds of questions for the imagination, understanding and

judgement, and that it conditions our ability to understand or judge the evidence, or even our ability to observe accurately. Starting with an explicit theory, the criteria of relevance are already predetermined.

The various steps distinguished show how the same things can be considered actual or potential, depending on the point of view. Sensation is of the actually existent, and whatever is actually existent is potentially knowable. Memory and Imagination can deal with what is actually known, and anything actually known is potentially intelligible. It is in understanding that things actually known become actually intelligible, and potentially verifiable as understood. Judgements, affirm that some things are actually verified as understood, while others are not. Such judgements are actually certain, probable or dubious, and are potentially justifiable by reasoning.

In terms of matter and form, a difference between description and explanation is suggested. In its most general acceptance, Matter is that which is capable of some determination, and Form is that which determines. Since Prime Matter is conceived as completely undetermined, it cannot actually exist, since whatever does exist does so by virtue of its form; 'second matter' is what does have some determination, but is considered as capable of further determination: it is therefore actually described in terms of the determinations it possesses, and potentially explainable in terms of a further form. Thomas says that matter is to form as form is to use, so that description of a thing would be the listing of the determinations of 'second matter' and explanation the assignment of its function. Also to be noted is, that just as the same thing can be materially or formally considered, depending on the viewpoint, so too the same things can be descriptive or explanatory, depending on the point

of view. It is this shifting point of view which constitutes the various sciences for Thomas, and their hierarchy is correlative with their explanatory power. One science is subordinate to another when it must take its basic principles from it, and all are subordinate to that science which is required to justify their principles. The same science can therefore be truly explanatory of a subordinate, yet be related only descriptively to the science which is required to justify its own principles.

Thomas discussed this explicitly in the examples of the applied mathematical sciences, and implicitly denies that Grammar is subordinated to Logic in the same way. What these two sciences have in common are the linguistic forms which in Grammar are the subject of study, and in Logic, the signs of the subject of study. Within Grammar, there is a descriptive procedure provided for, insofar as the letters are said to be signs of sounds, whose combinations form words. This procedure would describe the words, whose congruous combinations are explained by the rules of grammar.

The notion of categorematic and syncategorematic expressions is clearly reflected in the distinction Thomas puts between Imagination (or Memory) and Understanding. Categorematic expressions stand for units which have some sort of independent status, while the syncategorematic expressions stand for the relations between them. But while there can be an intelligible image of such units, Thomas would hold that there can be no image of relations, which can only be understood. The actual image of a circle, for instance, is potentially intelligible when we have made it as fine and as accurate as possible, as a reminder that the source of limitation for its perfect universality is extension. So while the image itself is not the universal, it is potentially intelligible as such.

But in considering equal circles, there is no image at all of equality, nor of other relations such as similarity, or necessity, or causality and so on, but only of things which can be understood in this manner. In a case like this, Thomas would say that the notions of equality or necessity and so on are just as clear to the mind as the sight of a circle is to the eye.

VERBUM, PSYCHOLOGICAL, PHONETIC, LINGUISTIC

Paralleling some of the distinctions above (p. 94f), there are three main uses of the expression Verbum which are central to Aquinas' conception of language:

> A word (verbum) has three meanings for us in a proper sense, and there is a fourth which is improper or figurative. The most obvious and common meaning is that which we pronounce vocally, and this proceeds from within us with respect to two things found in this external word, namely, voice itself and the meaning of the vocal sound. For the meaning of the vocal sound... is the concept of the intellect and it proceeds from the imagination... Any vocal sound that is not meaningful cannot be called a word. And it is from this that the exterior word is so-called, because it signifies the interior concept of the mind. So it is this interior concept of the mind that is primarily and properly called Word, and the vocal sound that stands for it, secondarily. Thirdly, the image of the vocal sound is also called word...
>
> There is a fourth way of using 'word' which is figurative, for whatever is effected or meant by a word, as we have come to say "This is the word I have spoken to you", or "that the king commands", when pointing out something that is signified by a word... Thus Augustine says, "Anyone can understand a word, not only before it is spoken, but even before the images of its sounds are associated with the thought..."[1]

The rest of this citation from Augustine is quoted approvingly in another context:

> ...the thought formed of the thing we know is the word we speak in our heart and it is neither Latin or Greek nor of any other language.[2]

These three 'words' are called the verbum vocis, verbum cordis and verbum phantasticum or imago vocis, and they are separated out, for one of other reasons, to distinguish the vocal activity of men from that of animals: this differs in the number and kind of concepts manifested, in the degree of self-determination and deliberation involved, and in the mediation of the verbum cordis between experience and expression.[3]

> These three words, the <u>verbum cordis</u>, <u>verbum vocis</u> and the <u>imago vocis</u>, are necessary because, since our speaking is a kind of bodily operation, it requires all those things that are necessary for any bodily activity.
>
> In order that there be a bodily activity of a man insofar as he is a man[1], that is, a deliberate act, then previous deliberation and judgement on the part of the intellect is required. But because concepts concern universals and (bodily) operations have to do with singulars... there must be some particular power which apprehends the intention of the particulars of a thing with which the operation is concerned. Thirdly, the bodily activity should follow through the motive powers attached to the muscles and nerves; so that it can be thought of as a kind of syllogism whose universal major is found in the intellectual part, and the particular minor in the sensitive part, and then follows the conclusion of particular operation inspired by the motive power. For an operation in practical affairs is like a conclusion in speculative matters...
>
> So if we take <u>verbum</u> as referring only to the intellectual aspect, it is the <u>verbum cordis</u>, which others call the <u>verbum speciei rei</u> because it is the immediate likeness of a thing. Damascene calls it the natural act of the intellect... Augustine calls it the <u>verbum animo impressum</u>. Insofar as it is in the imagination, that is when one imagines the words by which the concept of the intellect is able to be expressed, it is then the <u>verbum</u> which has the image of vocal sound, which others call the <u>verbum speciei vocis</u>. Damascene calls it <u>verbum in corde enuntiatum</u>, and Augustine calls it <u>verbum cum syllabis cogitatum</u>.
>
> Insofar as it is in a corporeal activity, through the movements of the tongue and the other natural instruments of the body, it is called the <u>verbum vocis</u>. Damascenecalls it the <u>verbum quod est angelus</u>, that is messenger, <u>intelligentiae</u>, and Augustine terms it <u>verbum cum syllabis pronuntiatum</u>.[2]

Aquinas himself changed his idea of what the <u>verbum cordis</u> was during his teaching career. In the earlier stages, he said that it was "only the image which is understood, or perhaps the operation of one who understands, itself"[3]. Later, he rejects the opinion that the <u>verbum cordis</u> is the intelligible image:

I would reply with Augustine that *verbum cordis* implies something proceeding from the mind or intellect (*XV De Trin*), and something proceeds from the intellect insofar as it is constituted by its activity.

But there is a double operation of the intellect... one of which is called the understanding of indivisibles, by means of which the intellect forms a definition of something in itself, or the concept of something uncomposed; the other operation is that of the intellect combining or separating, by which propositions are formed.

The products of both these operations are called *verbum cordis*, and the first of them is signified by a simple term, the second by a proposition.

It is obvious that every operation of the intellect proceeds from it insofar as it is actualized by an intelligible image, since nothing acts except insofar as it is actualized.

Whence it is necessary that the intelligible image, which is the principle of the operation of the intellect, should be different from the *verbum cordis*, which is formed by the operation of the intellect, even though the *verbum* itself can be called the form or intelligible image as constituted by the intellect, in the manner that the form of an art that is discovered by the intellect is called a kind of intelligible image.

To the first objection, then, I would say that the intellect understands things in two ways: first, *formally*, and thus it understands by means of the intelligible image by which it is actualized; then, *instrumentally*, when it uses something to understand something else; and it is in this manner that the intellect understands by means of the *verbum*, because it forms the verbum for this very purpose, to understand something.

To the second objection, I would say that the cognition of external senses is accomplished by the mere immutation of the sense by its object; whence, through the form which the sensible object imprints upon it, it senses. But the external sense does not form for itself some sensible form; that is the function of the imaginative powers, whose form is similar in a way to the *verbum* of the intellect."[1]

"...a person understanding, when he actually does understand, can have a relation to four things, i.e. to the thing he understands, to the intelligible image which actualizes the intellect, to his own understanding, and to the concept of the intellect.

Now this concept differs from the other three things mentioned: (1) from the thing understood, because sometimes what is understood is outside the intellect, while the concept

of the intellect is only within it; and besides this, the concept of the intellect is related to the thing understood as to its purpose, since the intellect forms its concept in order to understand a thing. (2) it differs from the intelligible image, for the intelligible image by which the intellect is actualized is considered as the principle of the intellect's activity... (3) it differs from the activity of the intellect, because the concept discussed here is considered as the term of an activity, and as a sort of thing constituted by it, for the intellect by its activity forms the definition of a thing, or even a positive or negative proposition. This concept of the intellect is properly called verbum, for it is this which is expressed by our external words: the exterior vocal sounds signify neither the intellect itself, nor the intelligible image, but rather the concept of the intellect, by means of which it is referred to things.

So the verbum or concept of this kind, by which our intellect understands something other than itself, arises from this other thing, and represents this other thing. Of course it arises from the intellect as a result of its activity as well, but it is a likeness of the thing understood. For even when the intellect understands itself, this verbum or conception we have spoken of is still a likeness and a product, that is, a likeness of the intellect understanding itself... And therefore the verbum which arises from the intellect is the likeness of the thing understood, whether it is the same as the intellect itself or of something different from it..."[1]

All concepts arise initially from the experience of the senses, and those which are formed in order to understand physical things are therefore verified through the senses; those which are 'pure ideas' such as the notions of mathematics, are verified by the understanding itself, perceiving their internal coherence, etc.:

"Understanding is accomplished through thought, that is through reasoning... and thought is accomplished through meditation, that is, through imagination and the other sensitive powers within us which assist human reason; and meditation is accomplished through the senses, because imagination is brought about by the activity of the senses."[2]

"...in demonstrative syllogisms there can be no paralogism, that is, a syllogism faulty in form, as in dialectic syllogisms...

In the fallacy of equivocation, the middle term is the same vocally, but not actually, and when it is pronounced vocally, this fact is concealed. Thus the word 'cycle' (circulus) isused equivocally of a figure and a poem... and there can be deception in Omnis circulus est figura; poema Homeri est circulus; ergo poema Homeri est figura. But if a circle is described to the senses, there can be no deception...

But just as this sort of deception is excluded by presentation to the senses, so in demonstration, it is excluded because the middle term is presented to the intellect. For when something is d efined, it is in the same relation to the intellect as something sensibly described is to the sight... and since in demonstration one proceeds from definitions, there can be no deception from the fallacy of equivocation, much less from the other fallacies indiction..."[1]

"When I want to understand the nature of a stone, I have to arrive at it by reasoning, and that is they way with everything else we understand... So there is no perfect formulation, as long as the intellect in reasoning, is tossed this way and that, until the nature of the thing is perfectly conceived: then only does one have the nature (rationem) of a perfect thing, and only then the nature of a word..."[2]

"Understanding itself is not perfected unless something is conceived in the mind which is called a word, for we are not said to understand, but to be thinking in order to understand, until some sort of concept is firmly in mind (antequam conceptio aliqua in mente nostra stabiliatur.[3]

From these texts, the basic notion of the verbum cordis and its importance to the various ways of explaining language can be gathered.

First, it is the result of thoughtful inquiry and reflection, the expression to oneself of what is understood. During this inquiry, we do not understand but are seeking to do so.

Secondly, since the <u>verbum cordis</u> is the result of such an inquiry, the identical vocal sounds which express both will have to be discussed in different ways. The notion of <u>concept</u> will therefore vary accordingly.

Thirdly, "intelligible image" is deliberately analogous.[1] As seen in the example of understanding a circle (p.~~135~~ 65), an act of understanding is 'triggered' by a suitably arranged image, but the image itself remains particular, hence only potentially intelligible.

Fourthly, the only parallel that can be expected between imagined or vocal words and concepts of any kind is that supplied by arbitrary convention. But the connection between adequate concepts and deliberate judgements is 'natural' to this extent, that the degree of parallel is a measure of the accuracy of understanding. Aquinas holds that the universe does have a determinate structure, and that we can know it, however inadequately.

Fifthly, whatever the division of external or imagined words may be, concepts and propositions are the two types of <u>verba cordis</u>. Concepts are abstract and judgements are logically true or false, but natural things (<u>entia naturalia</u>) are neither. Concepts and judgements are the products of the mind (<u>entia rationis</u>) and are known as such. They can therefore be the objects of thought and the tools by which things are known, and dealt with.

Sixthly, as a consequence of this, Thomas holds that words we speak signify concepts immediately, and things mediately through them. He uses <u>conceptus</u> and <u>conceptio</u> frequently for both 'concept' and 'judgement', but our 'concept' for him is <u>simplex conceptus</u>. The most common term for the expression of a simple concept is <u>nomen</u>, and the expression of a judgement <u>enunciatio</u>.[2]

CHAPTER III

THE NOMEN

The notions developed above can now be related to the three ways in which Aquinas says simple *dictiones* can be studied:

> "...first, showing how they signify simple concepts in isolation (*absolute*) and then their consideration is proper to the *Categories*. A second way is to study them as part of a judgement (*enunciatio*) and that is how they are treated here. Thus they are given as *nomen* and *verbum*, whose function is to signify with or without reference to time and other things of this sort, which are proper to the nature of expressions insofar as they make up an *enunciatio*. Thirdly, they are considered insofar as they are constituents of the syllogistic order, and thus they are defined as *terms* in the Prior Analytics."[1]

Taken in the first manner, then, any meaningful expression in the language whatever can be called *nomen* if it is the sign of a concept, and the *Categories* describe the typical kinds of concepts words in isolation are said to arouse. When discussed from this point of view, *nomen* is not distinguished against the other 'parts of speech' established by the grammarian or logician:

> "...when we say *homo est justus*, this nomen *est* is added... and even this *est* can be called a *nomen* just as any expression (*dictio*) at all can be called *nomen*."

When *nomen* is taken as part of a judgement, it is differently defined. Aristotle's definition was, "A *nomen* is a vocal sound which has meaning by convention, without reference to time, no part of which signifies something separately." Aquinas comments on this as follows:

> "He (Aristotle) is principally interested in the *enunciatio*, which is the subject of this book, and since each science should be clear about its constituent parts, he first deals with the parts of the *enunciatio*, and then with the *enunciatio* itself...

> First he defines the nomen...making vocal sound the genus, which distinguishes the nomen from all sounds that are not vocal. For a vocal sound is one produced from the mouth of an animal with some sort of image... The first (specific) difference is significant, to distinguish it from other non-significant expressions, whether written and articulated, like 'biltris', or unwritten, non-articulated sounds, such as a hissing sound made for no purpose...
>
> Then he adds a second difference, when he says that it is conventional, that is, according to human institution, derived from man's arbitrary choice. This is how the nomen differs from naturally significant sounds, such as the groans of the sick and the noises animals make. Then he adds a third difference, without reference to time, by which the nomen is distinguished from the verbum...
>
> ...then he adds a fourth difference when he says that its parts are not significant separately, that is, apart from the whole nomen and thus the nomen is distinguished from the oratio, whose parts do have meaning separately, as for example in this oratio, homo justus."[1]

This definition applies to those dictiones which can appear as the subject of a logical proposition. It does not apply to the same form in isolation, and it is insufficient to characterize the same form considered as a term in a syllogism:

> "... a universal and an integral whole are alike in this, that both are confused and indistinct. Just as one who apprehends a genus does not apprehend the species distinctly, but only potentially... a thing which is defined is related to the things that define it as a sort of integral whole, insofar as the defining principles are in the 'man' or 'circle' for example, does not immediately distinguish the defining principles, whence a nomen is like a kind of whole, yet indistinct, whereas a definition divides it into singulars, that is, it sets out the defining principles.."[2]

Thus a dictio in isolation, without any context, is meaningful, but only potentially a nomen or verbum. In a proposition, a nomen is meaningful, and determinately so, with reference at least to the verbum of the proposition, but it is only potentially a definition.

In a syllogism, the nomen stands for a definition. It is now actually a definition, but only potentially a proposition:

> "A definition is called a term because it totally includes the thing defined..."[1]

> "... a definition is a kind of oratio, but...'is' or 'is not' is not added to it, so that it is not as yet an oratio enunciativa."[2]

> "Since a definition is not a proposition that means existence or non-existence, it might be asked why it is an immediate subdivision of 'proposition'. But it can be said that in this subdivision he is not taking 'proposition' to be subdivided, but 'principle', for it is not only the proposition that is called a principle of the syllogism, but definition as well. Or one can say that although a definition is not in itself a proposition actually, it is so virtually, since once the definition is known, it is evident that the definition is truly predicated of a subject."[3]

Considering the strong position taken about the impossibility of deception from terminological ambiguity in demonstration as one extreme[4], and the vagueness of what can be made out of a word in isolation as the other[5], the progress in the various stages of conception that Aquinas distinguishes shows that we must interpret his general statements about language, such as "language is the audible sign of an internal conception"[6] in more than one way. Such 'conception' is evidently variable, from a very loose imprecision to the extremes of definitive precision.

DIVISIONS OF THE NOMEN

Since the nomen is a vocal sound which stands for things through the mediation of concepts, there will be several ways of distinguishing types: one can count up the number of dictiones in the vocal form, compare the vocal form to the concepts from

which it is derived, to the concept it signifies immediately, and to the thing it stands for through the mediation of concepts.[1]

Simple and compound nomina

In the De Interpretatione and quite generally, the nomen is always identified as a vocal sound. Vocal sounds as such are to be investigated by the natural scientist who will decide upon their simplicity or complexity from this point of view. The same vocal sounds are studied by the grammarian as dictiones. He concerns himself with the letters which stand for vocal sounds, how they combine into syllables, dictiones and so forth, and he pronounces upon their simplicity or complexity from that viewpoint. But the nomina are said both to derive from, and to stand for, concepts. The terms Aquinas uses to distinguish these are (a) conceptus a quo nomen imponitur ad significandum and (b) id ad quod nomen imponitur ad significandum. The nomen is imposed to signify concepts immediately, and things mediately, as we have seen. Apparently it is the logician and psychologist who will decide about the simplicity and complexity of concepts, and the natural scientist and the philosopher about the simplicity and complexity of natural things. In this way, one and the same vocal nomen can be said to be both simple or compound, according to the different criteria of the various sciences.[2]

Nomina are compound for the grammarian if they can be analysed into at least two parts, each of which can themselves be dictiones, otherwise they are simple. Irrespective of their grammatical status, nomina are simple or compound for the logician according as they stand for simple or compound concepts. The same holds for a nomen derived from many concepts, but used to stand for a simple concept. In terms of the four elements involved in the discussion,

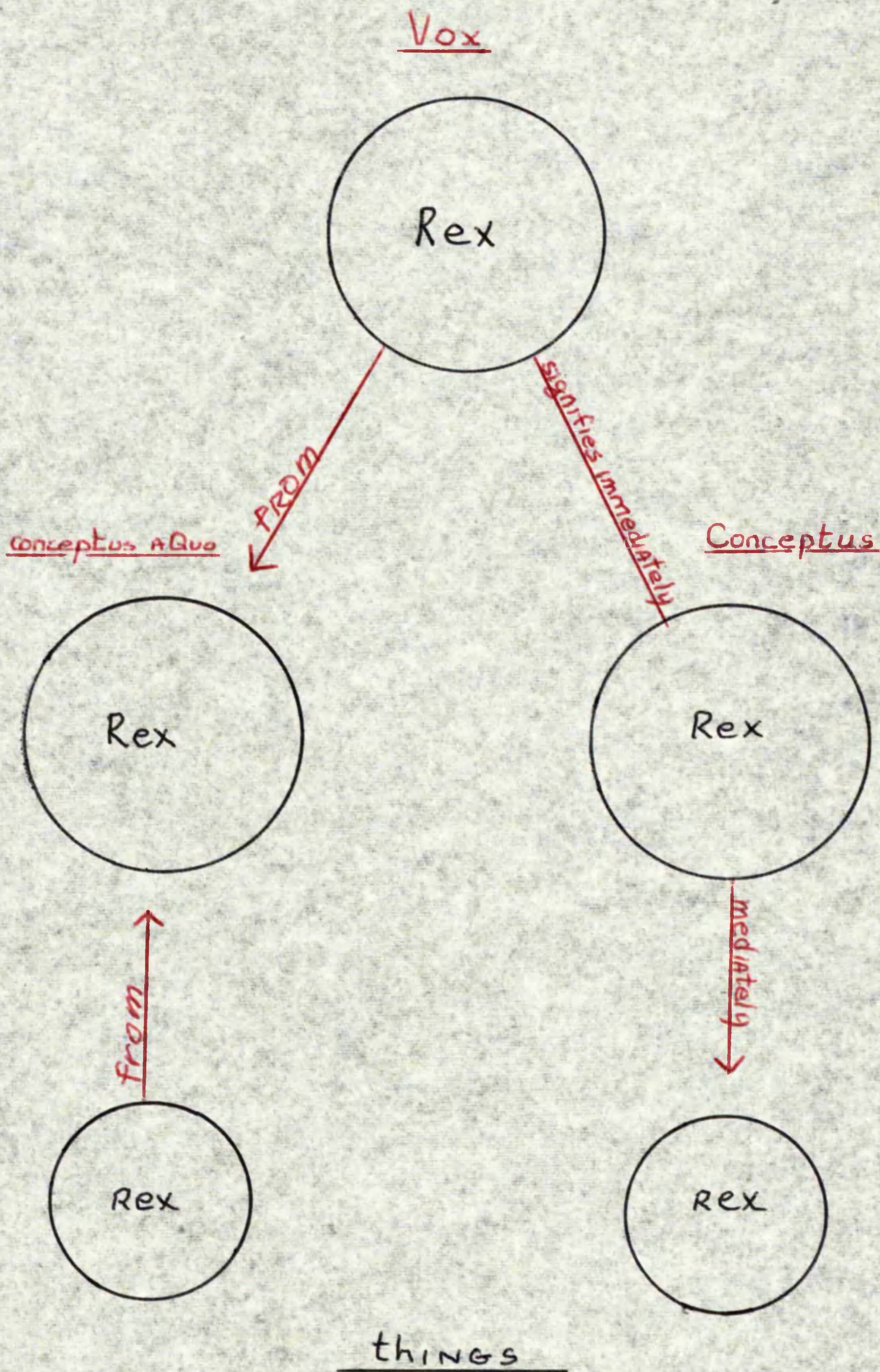
Aquinas discusses the following examples. Here, s stands for 'simple' and c for 'compound':

	Conceptus a quo	Grammatical Word	Conceptus, id ad quod	Thing, id ad quod
(a)	s	s	s	s
(b)	c	s	s	s
(c)	c	s	c or s	(c) or (s)
(d)	c	c	c	(c)
(e)	c	c	s	s

(a)	rex, sorex	(king, mouse)
(b)	lapis	(stone)
(c)	tunica	("manhorse")
(d)	hircocervus	(goatstag)
(e)	equiferus	("wildhorse")

From the appended sketches (112 , 113 , etc.) it can be seen what Aquinas has in mind. The following texts illustrate some of the points in his words:

> "(Aristotle) shows that a part of the nomen taken alone does not mean anything by taking compound nouns as an example, since the point is clearest in them. For in this nomen 'equiferus'[1], this part ferus of itself does not mean something in the same way as it would in the oration 'equus ferus' (wild horse). And the reason is that one nomen is imposed to signify one simple concept; and there is a difference between that from which a name is imposed to signify something, and the thing for which the nomen stands; for just as the nomen 'lapis' is imposed from laesio pedis (hurting the foot) which it does not signify, it is nevertheless imposed to stand for the concept of a certain thing. And that is why part of a compound noun, which is imposed to signify a simple concept, does not stand for part of a compound concept from which the nomen is imposed. But an oratio stands for a compound concept and therefore its parts stand for the parts of a compound concept... the difference between simple and compound nomina is seen in this, that in simple nomina, the parts are in no way significant, neither actually or apparently, but in compounds the parts appear to have meaning... and the reason for the difference is that simple nomen is imposed to signify a simple concept from a simple concept, but the compound is imposed to signify a simple concept from a compound concept, so that it appears as if its parts have meaning."[2]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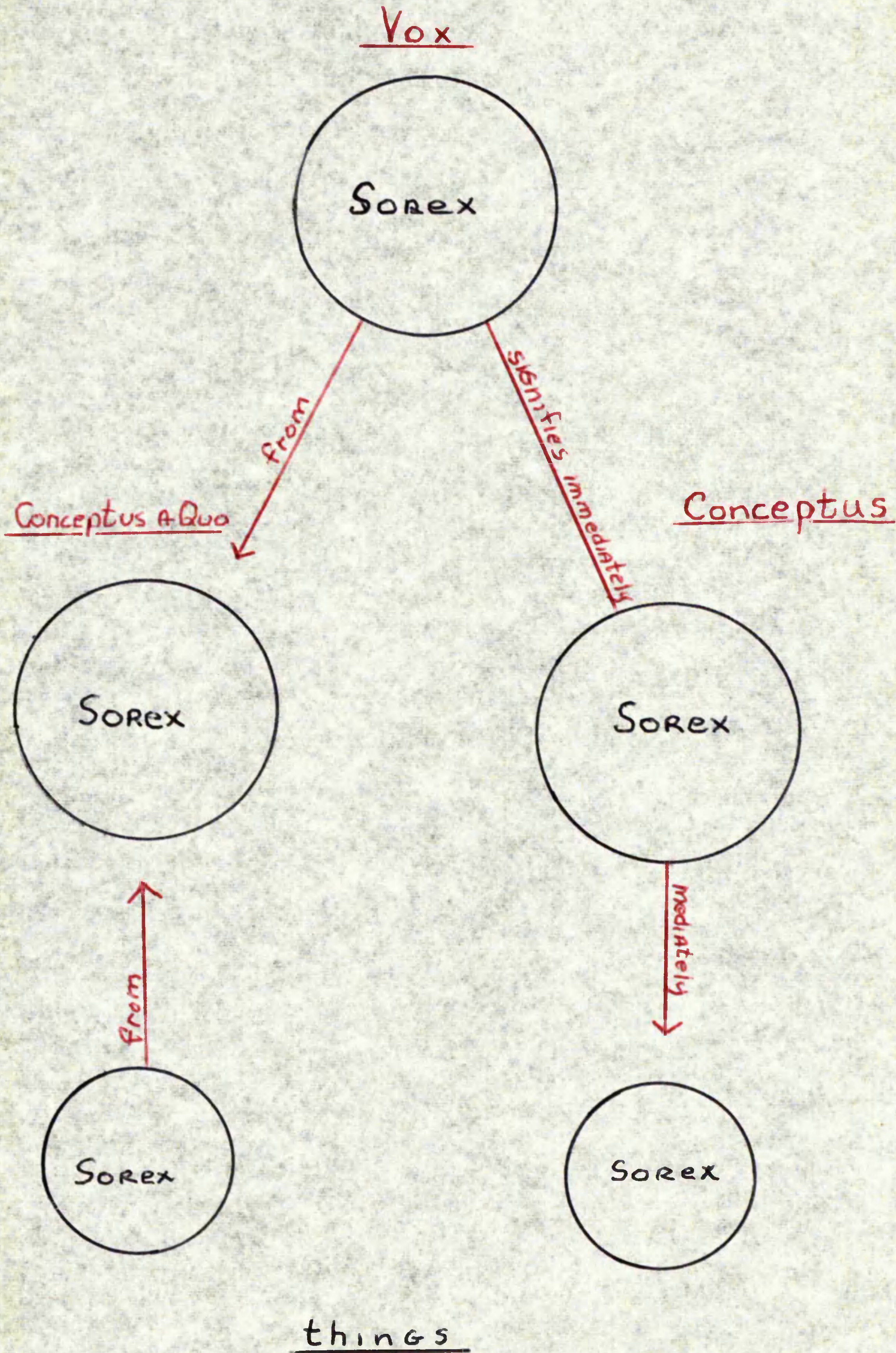
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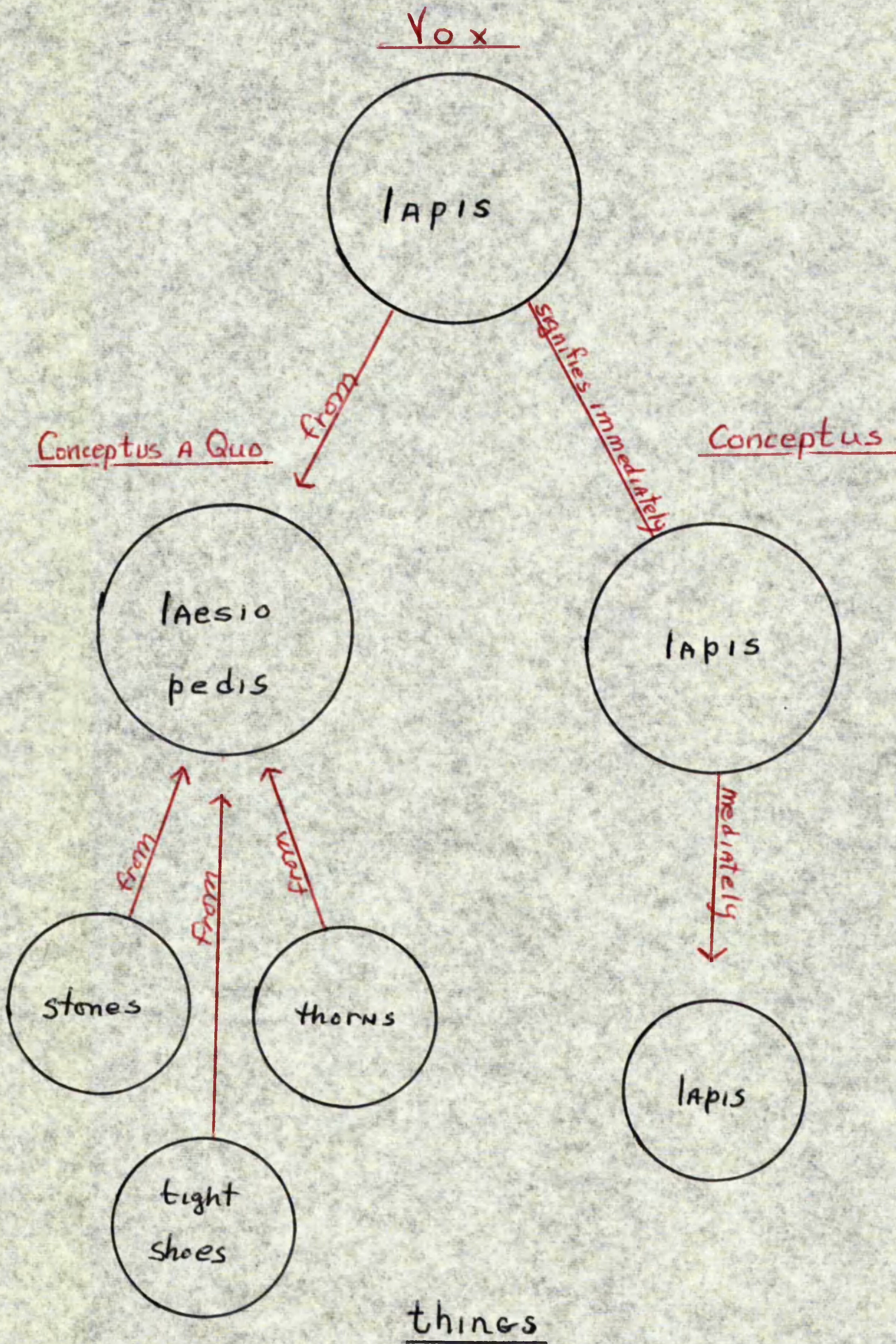
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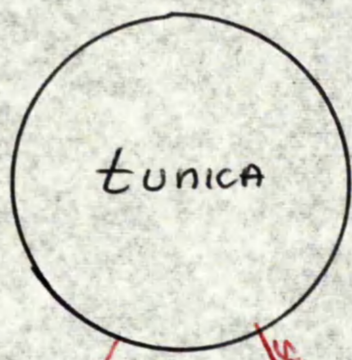

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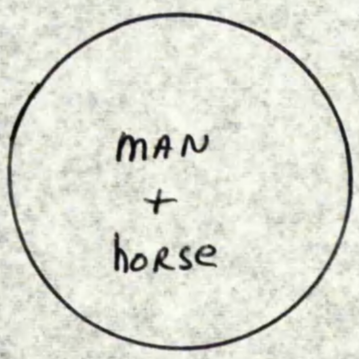

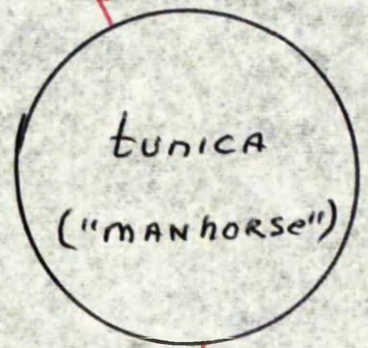

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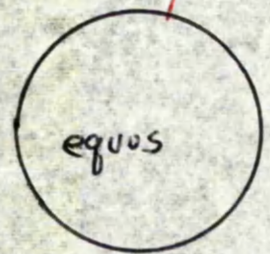

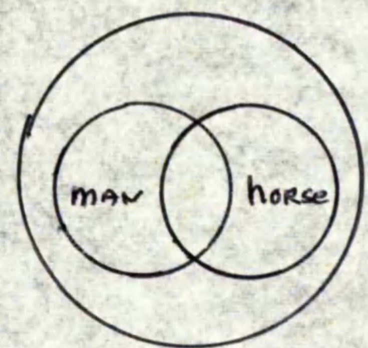

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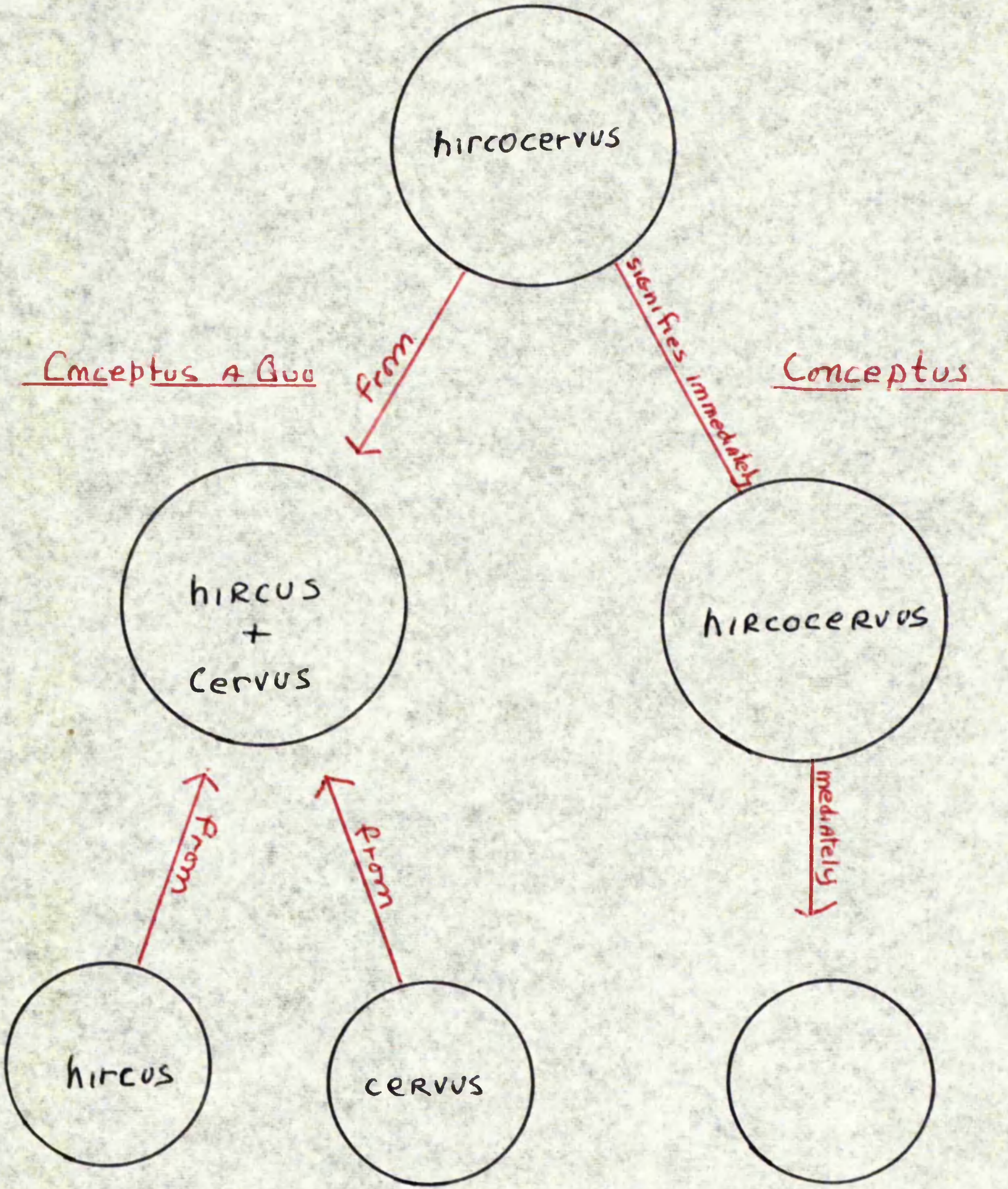

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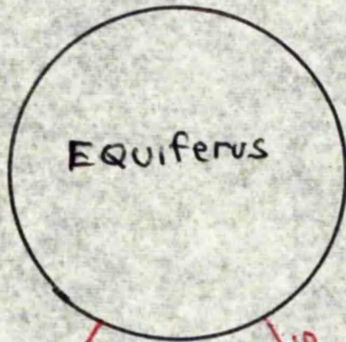

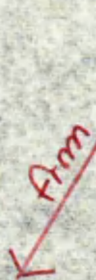

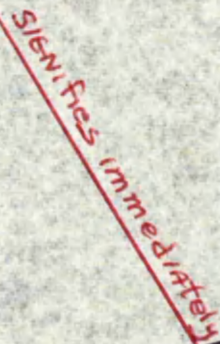

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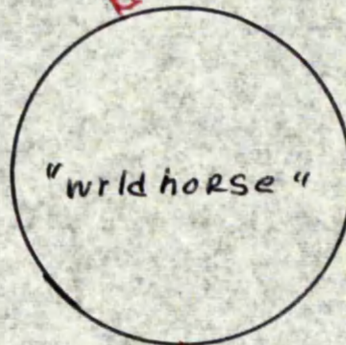

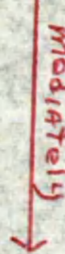

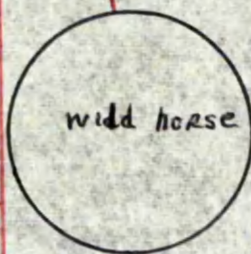

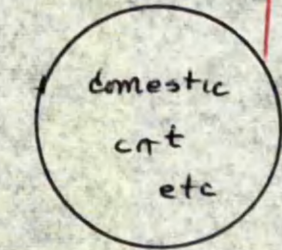

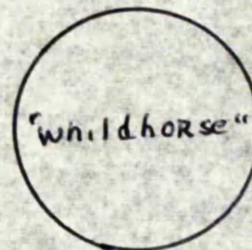

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"It must be kept in mind that in compound <u>nomina</u>, which are imposed to signify simple things from some compound concept, the parts appear to mean something, though in truth they do not. And this is why he adds that in compound <u>nomina</u>, the syllables can be <u>dictiones</u>.. and he shows this in syllables that can be <u>dictiones</u> sometimes that mean something by themselves, like the vocal sound <u>rex</u> which is sometimes independently significant, but when taken as one syllable of <u>sorex</u>, <u>soricis</u>, it does not mean something of itself, but is only a vocal sound. For there are words which are compounded of several <u>voces</u>, but in meaning, they are simple, insofar as they stand for a simple concept."[1]

"...he gives a proof from the compound <u>nomen</u>, <u>hircocervus</u> which is made up of <u>hirco</u> and <u>cervus</u> and is called <u>tragelaphos</u> in Greek: for <u>tragos</u> is <u>hircus</u> and <u>elaphos</u> is <u>cervus</u>. <u>Nomina</u> like this do signify something, namely certain simple concepts, even though of composite things, and so they are neither true nor false until 'exists' or 'does not exist' is added... he uses this example of a <u>nomen</u> for something that does not exist in nature, so that falsity can be immediately apparent, and to show that there can be no truth or falsity without composition or division."[2]

"...as an example, if someone should impose this <u>nomen</u> <u>tunica</u> to signify a man and a horse; thus, if I say <u>tunica est alba</u>, there is neither a single affirmation or negation... and this is the case if it means man and horse as different things; but if it means man and horse as composing one thing, it does not mean anything, for there is no thing which is composed of man and horse."[3]

From these texts and the sketches, it can be seen that the simplicity or complexity of meaning of all the expressions discussed is determined by use, not by their conceptual origin or grammatical constituents. <u>Rex</u> is said to be derived from a single concept, from which the grammatically simple <u>rex</u> is imposed to signify the simple thing, <u>king</u> through a simple concept. The syllable <u>rex</u> is not used in <u>sorex</u> to mean anything as it may be elsewhere, and <u>sorex</u> is said to be derived from a simple concept; <u>sorex</u> is grammatically simple, and means both a simple thing and concept.

Lapis is grammatically simple on the norms employed, but its derivation from the compound concepts Laesio and pedis relies on one of those extraordinary medieval etymologies[1] which, however, do not affect the main point, which is that neither the grammatical word nor the concept it stands for need be the same, in nature or constitution, as the concepts from which they arise. The id ad quod and the conceptus a quo are said to coincide when those things are concerned which are 'immediately known to us' as opposed to those things to which we have to reason. Considered "immediately known" are hot and cold, heavy and light, etc.[2] so that the conceptus a quo and ad quod, the concept of heat and heat itself, are the same.

There are, however, several unresolved ambiguities. The first concerns the status of such etymologies as lapis from laesio pedis, or sobrius from servans briam (observing a measure: sobriety). The medievals did not know enough about the historic development of language for such etymologies to be considered subsequent forms of earlier expressions, but it is not clear how they did consider them. If they were thought to be some sort of contraction of the longer expressions, a case could be argued for the grammatically compound treatment of lapis and sobrius. But lapis is certainly treated as simple. Such etymologies have at best only a mnemonic value. Aquinas himself rarely gives any etymology[3] without such expressions as "seems to be derived from", "appears to be from" although he occasionally gives such things as servans briam straightway without qualification. Most often, he links the word to be explained and its so-called etymology with 'quasi' (like, as if, as if to say), and this might be understood in the light of his teaching elsewhere, where he says that once the meaning is known, one should ignore the spoken or written word, since their task is done. Since the same meanings can be expressed

both by other words (of the same class) and by other parts of speech, there is no point at all arguing about mere words, except to insist that the more common and clear expression should be used.[1]

Another ambiguity is seen in the treatment of the compounds <u>hircocervus</u> and <u>equiferus</u>. Although Aquinas evidently holds that there are four <u>dictiones</u> here, he only seems to handle <u>cervus</u> and <u>ferus</u> with confidence, since these correspond to the nominative, but he leaves <u>hirco-</u> and <u>equi-</u> unexplained, and there is no indication that he saw the problem.[2]

A third ambiguity is seen in the difference between the decision that neither <u>hircocervus</u> nor <u>tunica</u> 'mean anything', that is, they do not refer to something actually existing, or in the terms of Petrus Hispanus, <u>non appellant</u>.[3] Assuming that goats and stags are not interfertile, one could accept the biologists' judgement that there is not and cannot be an animal with the characteristics of both: in Aquinas' terms, this is a pure <u>ens rationis</u>, a unit which can only exist as a concept. The same might be said of <u>tunica</u> as a unit composed of man and horse, for the <u>biologist</u>. But <u>mythologists</u> can discuss centaurs confidently and meaningfully, and, in a more modern vein, <u>tunica</u> is what the racing public bets on at the Grand National: the jockey would be hard put to win the race without the horse, and an unmounted horse is disqualified, but no matter how good the horse or inept the jockey, the science of racing must consider them as a functional unit. The better who does otherwise can experience very real effects on his pocketbook.

All these ambiguities meet in the underlying problem of description and explanation. Description supplies the data to be explained, and 'adequate' description requires a rigorously defined point of view along with clear descriptive criteria,

categories and techniques. As techniques of analysis develop, previous explanations can be shown to be often mistaken, and at least premature in the light of newly demonstrated units, and in this way, the insufficiencies can be pointed out. The medieval physicist though he could safely analyse physical things into the ultimate elements air, water, fire and earth. The modern physicist finds this analysis laughable, since he can reduce them to a handful of ultimate particles. But in both cases, one has to do with the current limits of observational techniques, and there is no guarantee that the modern _meson_ will not prove to be as complex as the medieval _earth_. In this sense, "ultimate explanation" is always premature.

The limits of medieval phonetics stems directly from their limited physics, and the consequent ambiguity seen in the analysis both of compounds and etymologies will also be seen in the analysis of case and consignification. But the methodological principles Thomas uses are sound enough: for him, existent thing (_ens_) is convertible with unit (_unum_), true (_verum_) and good (_bonum_). All are analogous terms, which while preserving the identical intelligible relationships among the elements discussed, vary systematically with each distinct field of application. This enables each science, each point of view, to define its own units independently of any other, except those which are directly derived from and dependent upon a superior science.

Nomen in isolation

It has been noted that any meaningful expression, usually called a _dictio_ when considered outside of any context, can also be called a _nomen_. But the term _nomen_ is properly used to identify a vocal sound in a particular use, as subject of a proposition, where it is always distinguished against the _verbum_,

and one normally expects that both are expressed. But since the meaning of any vocal sound is due entirely to the arbitrary choice of the speakers, the grammatical description of a vocal word gives only the proprietas vocabuli, not its actual meaning, but its expected or usual meaning, by reason of its similarity to other expressions. But there are circumstances which help indicate the meaning, beyond the evidence of the proprietas vocabuli:

> "... a man who signifies something by a nomen or verbum does not utter a judgement in the same fashion as one who is answering a question, or like one who spontaneously offers a judgement when no one has asked a question.
>
> He brings this up because the simple nomen or verbum seem to signify truth or falsity when given in answer to a question, whereas this is proper to the enunciatio. But this is not peculiar to the nomen or verbum except insofar as they are understood to be linked with the other part brought up in the question. So when someone asks: 'Who is lecturing in the schools' and the answer is 'The Master', one understands 'is lecturing there'.
>
> So if someone who says something by means of a nomen or verbum is not making a judgement, it is evident that the enunciatio does not mean one thing in the way that nomen and verbum do."[1]

Other divisions of the Nomen

We name things in order to know them[2] and only insofar as we do know them[3], so that in considering words as meaningful, it is not sufficient to compare them to the things named, but as well with the way in which they are conceived:

> "... for vocal sounds are signs of concepts, and concepts are likenesses of things.
>
> It is evident that the unity or diversity of a vocal word (vox) insofar as it is meaningful, does not depend on the unity or diversity of the thing signified, otherwise there could not be an equivocal nomen; for on this presupposition, there would be as many different nomina as there are things...
>
> So the unity or diversity of a meaningful vocal sound, whether simple or compound, depends upon the unity or

> diversity of the vocal sound or on the concept, and of these, the vocal sound is only a sign and not something signified, whereas the concept is both something signified as well as a sign, just as things (can be).
>
> In this way, a _nomen_ or _enuntiabile_ can be this or that, eitherbecause of the different vocal sounds alone, as is the case with synonyms, where there are different sounds, but one and the same thing signified; or it is possible to have different sounds and different concepts, due either to the diversity of the things understood, or to the diversity of the ways in which they are understood (_modum intelligendi_); and this is always the case when there is a different way of signifying them (_diversitas consignificationis_) which is consequent upon a different way of understanding one and the same thing..."[1]

As a result of this point of view, _nomina_ are variously divided: univocal, equivocal, analogous or synonomous, proper and common, abstract or concrete, relative or absolute. There are other descriptions as well, such as _nomina primae_, and _secundae impositionis_ and _nomina infinita_.

A _nomen_ is used univocally when it applies to several things through the mediation of exactly the same concept, as 'animal' is predicated of 'cow' and 'horse'. A _nomen_ is used equivocally when one and the same vocal sound is applied to several different things through the mediation of diverse concepts, as _canis_ is applied to the animal and to the star. A _nomen_ is used analogically when it is predicated of several things through the mediation of a concept that is at once the same and different: 'different' because different relationships are involved, 'same' because these different relationships are referred analogically or proportionately to the same thing. This 'one thing' to which the relationships are referred is said to be numerically one, not just conceptually one, as is the case with univocal _nomina_.[2]

There are two main types of analogy that can be considered, depending on whether several things are said to be related to one, or merely one thing to another thing:

> "... as 'healthy' is said of medicine and urine, insofar as both of them have a relation and proportion to the health of an animal, of which the former is a cause, and the latter a sign; or from the fact that one thing has a relation to another, as when 'healthy' is said of the medicine and the animal, insofar as the medicine is the cause of the health that is in the animal... ... and this mode of sameness is a mean between pure equivocation and pure univocation. For in analogical terms, there is neither a single concept, as in univocal, not totally diverse concepts, as in equivocal terms; but the nomen which is used in many ways (quod multipliciter dicitur) signifies different proportions to the same thing..."[1]

As examples of univocal expressions, all the species of a genus can be given, since while 'being' is predicated of all the ten supreme genera (Categories, predicaments) in ten different but proportionate ways, analogically, each and every genus among them is divided univocally into its species and does not have a peculiar mode of predication proper to them.[2] In modern terms, any scientific definition or formula, such as that for water, H_2O, would be univocal in its use.

Among equivocal nomina, one can distinguish related and unrelated equivocations:

> "There are some equivocations which are wholly unrelated, in which nothing by a common name is expected, as when 'dog' is said of the star in the sky and the animal that barks.
>
> But there are others which have a certain resemblance, as when this word homo is applied to a real man and to a picture of one, insofar as it resembles a real man.
>
> There are others which are very close, either because they are in the same (logical) genus, as 'corpus' is used of the heavenly body and of the corruptible body equivocally, since they do not have the same matter in nature. But they are in the same logical genus, so that they do not appear to be entirely equivocal. Or they are related because of some similarity, as the man who teaches in the schools and

> one who is in charge of a house are both called 'magister' equivocally, but still a related equivocation because of this similarity, since both are directors, the first of schools, and the other of a house. So because of this relationship, either of (logical) genus or similarity, they do not appear to be equivocations, even though they are."[1]

Words are not of themselves either univocal, analogous or equivocal: it is their use. Thus "acutus" (sharp) is used equivocally of a pencil, the voice and testes, but not of voices that are more or less sharp.[2]

Nomina are proper or common (singular or universal) depending on whether they can be predicated of one thing only, or of many things. This is independent of the fact that a particular nomen in actual practice is applied only to one thing, as in the case of sol, 'the sun', and the reason for this is that with Aristotle, Aquinas holds that words stand for things through the mediation of concepts only, and a universal concept is not just one that is predicated of many things, but one that is of such a nature that it can be predicated of many.[3] Thomas discusses this in terms of matter and form:

> "Since every form is apt to be received in matter as such, it is communicable to many matters: but there are two cases in which it could happen that what is signified by a nomen would not be predicable of many. First, when the nomen signifies a form insofar as it is limited to this particular matter, like the name Plato or Socrates, which signify human nature insofar as it is in this matter; then the other case, when the nomen stands for a form which is not apt to be received in matter, so that it must remain singular and unique. So if 'whiteness' were a form which did not exist in matter, it would be unique and singular. And that is why the Philosopher says that if there were separated ideas of things, as Plato held, they would be individuals."[4]

In answer to the objection that many men could be called 'Plato'

or 'Socrates', it is explained that the division into universal and singular is not a division of nomina, but of things, and that something is said to be universal, not just when a word can be predicated of many things, but when that which is signified by the word is such that it would be found in many things. And this is not the case in the examples cited,

> "...for this name Socrates or Plato signify human nature insofar as it is in this matter. But if the name were imposed on another man, it will signify human nature in different matter and thus the meaning will be different, and as a result, it will not be universal, but equivocal."[1]

The case is slightly different with synonomous nomina, which are those different vocal words which refer to one and the same thing through one and the same concept. As examples, Aquinas mentions vestis and indumentum (clothing)[2], but does not distinguish their relative frequency or clarity, as he does elsewhere.[3]

The basis for distinguishing synonomous expressions thus seems to be physical things signified; this is also true of pure equivocal expressions, while for univocal terms, the basis is (specific) differences, and for analogous terms, modes of predication.[4]

The distinction of concrete and abstract nomina is based on the distinction of substance and accident, or matter and form, or subject and 'passion', all of which are instances of the act-potency opposition. Another way of discussing it is in terms of thing and property, but as "thing" (res) is a transcendental term predicated indifferently of all the genera, it appears that it is not words themselves, but their use, which is concrete and abstract.

Homo is concrete, as opposed to humanitas, but as has been seen, homo can also be used to signify 'humanity as abstracted from individuals"[5], which would be the meaning of humanitas

in an expression like humanitas est essentia hominis. Taken as a dictio, in no context whatever, homo would probably be taken more often as concrete, humanitas as abstract, since all that can be dealt with is the proprietas vocabuli. In a judgement, the use of homo as concrete or abstract would be determined by its opposition to the predicate, the verbum. In a syllogism, home or huminatas are nomina which stand for definitions agreed upon, and thus their use is readily discernible.

Thomas suggests a (linguistically) formal practice by which these two uses should be kept apart:

> "...since in the definition of all accidents, the subject (of the accident) should be included, it is necessary that if any nomina signify an accident in the abstract, the accident should be put in recto[1] as a sort of genus, but the subject (of the accident) should be put in obliquo as the difference; as when we say simitas est curvitas nasi (snubness is a curvature of the nose). But if some nomina signify an accident in the concrete, matter or the subject is put into their definition as the genus, and the accident as the difference, as when we say simum est nasus curvus ('snubbed' is a curved nose)."[2]

The distinction of absolute and relative nomina seems clear enough, but on closer investigation is as complex and subtle as Thomas' teaching on Relations[3], and this cannot be dealt with here in its entirety. Since the basic idea of relatives is that they mutually imply and define each other, they will be best understood when used as terms in a syllogism, where the nomina stand for such definitions. Since the nomina as subjects of propositions are only potentially definitions, their absolute or relative status will be less clear; and when taken as dictiones out of all context, a decision is even less satisfactory. But since all that can be expected in this last case is a kind of expectancy or probability, the examples Thomas gives as relativa secundum esse as opposed to relativa secundum dici may serve as

examples to introduce the way he would discuss the problem:

> "...some names are imposed to signify relational connections themselves, like master and servant, father and son, and these are called relativa secundum esse. Others are imposed to signify things upon which certain relationships follow, like mover and moved, head and headed (caput et capitatum) etc., and these are called relativa secundum dici."[1]

Relations are said to be real or rational, mutual or non-mutual. The relation which is real secundum esse is one where the essence of each term consists entirely in being related to the other; real secundum dici where this is not the case, but where a relationship to the other is contained in the essence of each term. Thomas holds all relations can be reduced to three types of fundament or basis: (1) quantity and number (2) action and passion, (3) measure to thing measured (not quantitatively,[2] but in being or truth). A simple set of each type would be (1) both terms are entia rationis like mathematical notions, and the relation of double to half is mutual, but rational only; (2) both terms are entia naturae, and the relation of father to son is both real and mutual; (3) one term is an ens naturae, the other ens rationis: thus in the relation of knowledge to thing known, sensation to thing sensed, the relations are non-mutual, only rational from the part of the ens naturae, and real from the part of the ens rationis. The relations are generally rational, non-mutual, when the terms are in different orders, as here between knowledge and thing-known, for a knowable thing does not presuppose knowledge, (so the relation is rational) but knowledge presupposes a thing known (hence real). For a real relation, a real fundament must exist. Among other examples, Thomas cites the relation 'left' and 'right'. In order to be real, they required real fundament or basis, and in animals,

this is the power of locomotion. But inanimate things lack that power, so that while there is a real relation of 'right' and 'left' between an animal and a pillar of stone, there is only a rational relation of 'right' and 'left' between the stone and the animal, or between two columns, and in this case, the fundament is that they are observed by a man.[1]

A nomen as a dictio is then neither absolute or relative, and usage can be confusing for this reason:

> "It must be noted that although scientia nominally (secundum nomen) refers both to knowledge and to the thing known, since we say scientia scientis and scientia scibilis, and intellectus seems to refer to both a man who understands and a thing understood, still, insofar as intellectus is said relatively to something, it is not said relatively to the thing known as if it were its subject... since it is obvious that intellectus is said relatively to intelligible as to its object... and the same thing is true of visus.
>
> But this can be expressed correctly, namely visus est videntis. For here, visus is referred to videntem not as an act of vision, but insofar as it is an accident or potency to see. For a relation regards something without, but not the subject (in which it is) except insofar as it is its accident."[2]

Those nomina which, even as dictiones are most likely to be relative rather than absolute, then, will be those concerned with quantity, number and the things which can be reduced to them (motion, time)[3] or which exemplify active-passive relationships as their very definition. Other nomina are indeterminate, since 'tide' could be so defined as to include 'lunar phase' or without any reference to these or other coordinates, as scientia, intellectus and visus can be.

Nomina are said to be primae impositionis and secundae impositionis in two ways. The 'first imposition' is considered the 'original' or normal use, and since things are usually named

from what is more familiar, and then these names are transferred to signify less familiar things[1], it is said that it is "customary to twist names from their first imposition to signify other things".[2] In the same vein, while it is customary within a linguistic community to restrict some common nomina to stand for the things that are of particular importance to that community[3] popular usage or a particular usage can employ words in a manner not justified by their 'first imposition': thus one would accept Patrias and Filias in sacramental formulary from the latitude allowed by popular usage, for Patris and Filii[4] even though they do not mean anything "ex virtute impositionis". Again, Spiritus Sanctus is two dictiones "in virtute vocabulorum considerata" and as such is applicable to the Trinity as a whole, but "quantum ad impositionem Ecclesiae" it signifies only one Person.[5]

The second use of the terms prima and secunda impositio points out the difference between terms that stand for entia naturae and entia rationis. Since the things most immediately known and best understood are material things, these are the first things named, and all other names, like our knowledge, derive from sensible things. Names mean things through the mediation of concepts: if the concept is that of an external thing, it is said to be primae intentionis or impositionis, and such would be names like horse and dog etc. But if the name stands for a concept like genus, species, difference, it is secundae intentionis or impositionis, since all of these "intentions" are said to be secundae intentiones[6]. It would not be unjustifiable to distinguish them as "first and second looks", since Thomas compares intellection so closely to vision, and it is the "second look" that finds the common elements called genus, species, etc.

There are many other distinctions about _nomina_ of less importance, such as the _nomen collectivum_[1] and _privatuvum_[2], but the _nomen infinitum_ is of some interest, since it reaffirms Aquinas' view that little is to be expected from inspection of _dictiones_ alone in inquiring about meaning:

> "The indefinite _non homo_ is not a _nomen_, since a _nomen_ signifies a determined nature, like 'homo', or a determined person, like pronouns, or both determined like 'Socrates'. But this _non homo_ signifies neither a determined nature nor person... and can be said indifferently of what does and what does not exist in nature..."[3]

He would apply the same principles to this as to the _verbum infinitum_, which recalls his discussion of simple vs. compound _nomina_: if the expression is taken as a single _dictio_, it is indefinite, if it is taken as two _dictiones_, it is the negative _verbum_. Evidently the only way one would decide this would be to inquire about such an expression in a particular use, a proposition already understood, or to be explained.

NOMINA ADJECTIVA and PRONOMINA

Under the _nomina_ Aquinas includes what grammarians now call adjectives and pronouns. Distinguishing _nomen adjectivum_ and _substantivum_ requires the distinction of substance and accident[5]. To understand what he has to say about the _pronomina_, one must understand the distinction of _supposit_[6] as opposed to nature. As a logical category, substance is equivalent to the modern 'unit' and includes only those things which are relevant to such a unit from a particular point of view. Accident compared to substance is a property of such a unit which is not indispensible to its definition or identification. "Point of view" is of cardinal importance here, since that is what constitutes the _formal_ object as opposed to the _material_ object; it is what permits us to have more than one science about the same thing. According to the point of view, what is considered accident in one science may be considered substance in another:

"Since accidents are related to substance in a certain order, there is nothing inconvenient about having something that is an accident with respect to one thing as the substance (subjectum) in respect to another, as in the case of 'surface', which is an accident of a corporeal substance, while 'surface' is still the first subject of color. But what is subject in such a way that it cannot be the accident of anything at all, is substance. Therefore in those sciences whose subject is some substance, that which is substance (subjectum) can in no way be a property (passio), as in metaphysics (philosophia prima) and in natural science, which concerns changeable subjects. But in those sciences which deal with certain accidents, nothing prevents us taking what is the subject with respect to some property, as the property of some anterior subject as well. But this cannot go on indefinitely. In a given science you have to arrive at something which is basic (primum) in that science, and which is therefore taken as substance (subjectum) in such a fashion that it cannot be a property at all: we see this in mathematical sciences, which deal with discrete and continuous quantity; for in these sciences those things which are first in the genera of quantity are presupposed, like unity and line and surface, etc. Presupposing these, we inquire through demonstration about certain other things, like equilateral triangles or a square in geometry, etc. And that is why demonstrations in these are called 'operative', such as 'draw a triangle on this straight line'; and when we have this, we can demonstrate certain other properties, such as the fact that its angles are equal and so on. So it is clear that in the first mode of demonstration, 'triangle' is regarded as a property, and in the second, as substance (subjectum). So Aristotle is here giving an example about a triangle insofar as it is subject, when he says that 'we should know beforehand what triangle means' ".[1]

It is with these things in mind that one must understand what Aquinas says about the difference of nomina substantiva and adjectiva:

"It must be said that the difference between nomina substantiva and adjectiva is this, that the substantives contain (ferunt) their supposits, whereas adjectives do not, but they add the thing they mean (ponunt rem significatam circa) to the substantive. That is why

> the Sophists say that the substantives supponunt (stand for something), but the adjectives do not, but merely copulant (i.e. link a property to a subject)."[1]

It is also in this relationship of accidents or properties to their subjects or substance that Thomas finds the explanation of agreement in number:

> "...substantives signify something per modum substantiae, but adjectives per modum accidentis which inheres in a subject. But just as a substance has being in itself (per se), so too it has unity or multitude of itself. Hence singularity or plurality are to be expected according to the form signified by the nomen. But just as accidents take their being from being in a subject, so too, they take their unity or plurality from the subject, and therefore in adjectives, singularity or plurality are to be expected according to the supposits.
> But in creatures, a single form is not found in several subjects, except in the unity of relations, as the form of an ordered multitude. Thus the names signifying such a form are predicated of many in the singular, but not if they are adjectives. For we say that multi homines sunt collegium or exercitus, but still we say that plures homines sunt collegiati."[2]

Two kinds of pronomina are discussed, demonstrative and relative. Pronouns are said to take the place of a nomen because they can at least determine a person, even though they do not name a nature[3]. They are included among the nomina because

> "Every nomen signifies a determined nature, like homo or a determined person, like the pronomen, or both determined like Socrates."[4]

Relative pronouns and demonstrative pronouns are said to be referred (referuntur) to a person, substance or supposit "for no one would say ego curro, alio currente, except in the case where someone else was running for him"[5], but they are also said to 'bring up' or 'refer' (referunt) the same supposit.[6] Mentioned in this text as relative pronomina are ipse and ipso and as relativa verba, apparently, the entire phrase primogenitus ex mortuis. Mentioned elsewhere as relative

pronomina are se[1] ("dicendum quod ly se est reciprocum, et refert idem suppositum") and qui[2].

Demonstrative pronouns are said to point out or demonstrate something, either to the sense or intellect.[3] Besides the hic and hoc mentioned in these texts cited, iste is discussed, first in answer to the question "Is Christ, as man, God?", then in general:

> "...when we say iste homo, the demonstrative pronoun attaches (trahit) the nomen homo to the supposit, and so this is true, Christus, secundum quod iste homo is God, rather than Christus, secundum quod homo is God."[4]

> "When we say iste homo, the only thing this demonstrative pronoun can demonstrate is what the nomen homo stands for. (non potest demonstrare nisi id quod supponitur per hoc nomen homo.)"[5]

CASES OF THE NOMEN

All the notions discussed under dictio, impositio nominis and the functionof propositions to signify something true or false come up again in Aquinas' discussion of Casus nominis and verbi. For him, the casus are forms other than the nominative of the grammarians, and they are said not to be 'simply' nomina, since they do not signify according to the first intention of their author[6], although the concept signified by all the cases and by the nominative is the same[7]. Case itself is said to be something "that happens to a dictio insofar as it is in a construction with another dictio."[8] The purely logical basis of these ideas is seen in the fact that he assumes no more discussion is required other than to point out that the casus nominis do not form a proposition signifying something true or false, even when the verb 'est' is added.[9] But an exception must be made immediately for the impersonal verbs, like poenitet Socratem, which is explained thus,

> "...the action of the verb is understood to bear upon the oblique case, as if one were saying poenitentia habet Socratem."[10]

From Aquinas' own practice, it is evident that these restrictions are not merely logical, but normative for logic rather than descriptive: that is, one should avoid using any other than the noninative in subject-position in order to avoid ambiguity. For, to take only one example, Aquinas frequently writes "Sapientis est ordinare[1], sapientis est judicare[2], sapientis est principari et praeesse[3], Sapientis est omnis debito modo et ordine disponere[4]. All of these certainly can be considered propositions about something that is either true or false.

The quarrel between the Peripatetics and the Stoics about the notion of the case (ptosis) has already been discussed[5]: this is how Aquinas comments on it in the De Interpretatione:

> "So when he says Catonis and Catoni (are not nomina) he is excluding the cases of the noun (from the definition of the noun) and says that Catoni and Catonis and others like them are not nomina, but only the nominative is said principally to be the nomen, through which the imposition of the nomen is made to signify something. But oblique forms of this sort are called cases of the nomen, because they fall (cadunt) as it were, through a sort of origin of declination from the nominative, which is called rectus (upright) because it does not fall. But the Stoics said that the nominative is to be called a case as well, and the grammarians have followed them, from the fact that they do fall, that is, they proceed from the interior concept of the mind. And (the nominative) is called rectus from the fact that nothing prevents something from falling in such a way that it remains upright, like a pen can fall and stick in the wood."[6]

As has been noted, the nominative and the other cases are not said to be simply different, since they do agree in one important respect, for

> "the concept which a nomen signifies is the same in all the other cases of the nomen, but they differ in this, that the nomen (in the nominative) joined to est or erit or fuit always signifies something true or false, which does not happen with the oblique cases."[7]

Aquinas has next to nothing to say about the individual cases. What has been said about the nomen in general may be taken to apply primarily to the nominative form, since he evidently considers it the base, the absolute, to which other relationships of a contingent or accidental sort can be added. This implicit appeal to substance-accident accounts for his idea of the unity yet diversity found between the nominative and the other cases: the signification is substantial, the consignification accidental to the signification, and 'relationship' is what is principally consignified by the cases.

For example, the Ablative case is said to express the relationship of accompaniment, origin or instrumentality[1]; of sign, formal causality or formal effect[2]. The genitive alone can signify form, or with a double genitive, a form and its modification, as in ista mulier est egregiae formae, iste homo est perfectae virtutis[3], Petrus est magnae virtutis, and a single genitive may express what is ordinarily conveyed by a souble genitive, since effusor multi sanguinis is said to be equivalent to vir sanguinum est iste.[4] In passing, he mentions that the Greeks sometimes use the genitive where the Latins employ the ablative[5], and that the Vocative cases either provokes the mind of the listener, or excites his attention.[6]

CONSIGNIFICATION and MODI SIGNIFICANDI

The notion of consignification,[1] touched upon in the cases, and more explicitly developed in the other accidents of the nomen, such a gender, and number, is intimately linked to that of the *modi significandi*. These, in turn, must be considered in their relationship to the *modi cognoscendi* or *intelligendi* and the *modi essendi*. In less formidable terminology, these distinctions seek to correlate the ways in which things may be said to exist, the ways in which they can be known, and the ways in which they can be talked about.

All the distinctions about signification can be best understood in terms of the root-and-affix analysis which Priscian denied was possible for *vires*: the distinctions of signification, principal signification, consignification and mode of signification represent the medievals' implicit appreciation of the possibility of such an analysis. The following definitions are derived from Aquinas' and Hispanus' *use* of them: Aquinas does not define them at all, and Hispanus defines only some.[2]

Signification is a general term referring to the meaning of an entire word or part of a word.

Principal signification refers both to (a) the meaning of the root, and (b) the lexical meaning of a word whose word-class has been established.

Consignification refers principally to the meaning of the affixes of inflected words in Aquinas. Hispanus also called the parts of speech other than the *nomen* and *verbum* "syncategoremata et consignificantia."[3]

Although this should apply to all the distinguishable accidents of either nominals and verbals, it is used both by Aquinas and Hispanus to refer principally to the *time* reference of verbs, and gender and number in the nominals.

Modes of Signification: Two things differ modally when they are partially identical, partially distinct. The feature in which they differ is called a determination or modification. Two words differ modally when their meaning is partially identical, partially distinct. Aquinas distinguishes some word classes because they have the root-signification in common, but differ in consignification: the nominal *cursus* and verbal *curro* have the root-meaning "run" in common, but differ in the consignification of each, (person, number, mood, voice and tense in the verb, number

gender and case in the noun).

While principal signification is generally used to discuss lexical differences between words of the same class, modal distinctions usually are said to hold between words of different classes.

Since the distinction of mode of signification is clearly dependent on a difference in consignification, it should follow that wherever there are modal differences, there will be differences of consignification, but the converse need not follow. Within a given word-class, there can be differences of consignification, in tense, case, gender, etc.

Linguistic categories were not consistently and exhaustively classified in terms of modes of signification until a period subsequent to Aquinas, by the so-called Modistae. The terminology was being developed in his time, and he uses it without definition, apparently assuming it as known. His interest is not strictly grammatical, but logical, psychological and philosophic, so that his use of these terms for grammatical distinctions is not consistent. To show how Aquinas approached these problems, it will be useful to indicate his approach to the question of modes, and show the sort of problems he considered were involved.

A mode is a determination added to a thing[1], usually of an accidental sort.[2] Assuming that we want to signify something as absolute,[3] that is, free from any accidental determinations or modifications whatsoever, difficulties arise both in language and in thought. For everything in our experience has accidental determinations, and is never something absolute.[4] Whenever I know something, it is hot or cold, here or there, and it has to be one thing, or I know nothing[5], but in order for it to be "one something" I have to be able to distinguish it from those things which resemble it and differ from it, and this raises considerable problems in definition.[6] So when I try to signify anything that I cannot adequately define, I must carefully distinguish between what my words say, and the way they say it: it is possible for me to be aware of these differences, and provide for safeguards. In other words, I can distinguish between modes of signifying, understanding and being.

These modes are studied in different ways, and by different disciplines. The grammarian studies the modes of signifying[7]

but can only establish the <u>proprietas vocabuli</u>, a kind of statistical expectation of what word-classes mean. These categories are not binding on the logician, who studies modes of predication, and neither study binds the philosopher, who is interested in modes of being, which concern neither the grammarian or the logician.[1] The basic reason for this is that "names do not follow the mode of being which is in things, but the mode of being they have in our cognition."[2]

Aquinas employs distinctions of mode in grammatical, logical and philosophic problems. The following texts illustrate these various applications:

> "The third thing that he stresses is that the <u>verbum</u> is distinct from the <u>nomen</u>, and from the participle as well, which also signifies with (<u>consignificat</u>) time... But it is peculiar to the <u>nomen</u> to signify something as existing independently (<u>per se</u>) while the verbum signifies <u>actio</u> and <u>passio</u>.
>
> <u>Actio</u> can be signified in three ways: first, <u>per se</u> and in the abstract, as a kind of thing, and that is how it is signified by the <u>nomen</u> in words like <u>actio, passio, ambulatio, cursus</u> and the like; in another way, in the mode of activity (<u>per modum actionis</u>) as emanating from a substance and inhering in it as in a subject, and that is how it is signified by verbs in other moods (than the infinitive) which are attributed to predicates. But since even this process of an action inhering can be apprehended by the intellect as a sort of thing, and can be signified as a sort of thing, the result is that the same verbs in the infinitive mood, which signify the inherence itself of an action in its subject, can be taken both as <u>verba</u> and as <u>nomina</u>, insofar as they signify quasi-things."[3]

> "... *cursus* signifies an action, but not *per modum actionis* (not in the manner of an activity), but as a thing existing in itself. This, as a *nomen*, does not consignify time. But *curro*, which, since it is a verb signifying an activity, consignifies time; for activities are known to us in time... to consignify time is to signify something measured in time. Thus it is a different matter to signify time as something, principally (*principaliter*) a sort of thing, which can be proper to the *nomen*, and it is another matter to signify with time, which is not proper to the *nomen*, but to the *verbum*."[1]

> "...then he adds the third difference, by which the *nomen* differs from the *verbum*, 'without time'. But this seems false, since the *nomina* 'day' and 'year' signify time.
>
> But it must be pointed out that with reference to time, three things can be considered. First time itself as a sort of thing, and as such it can be signified by a *nomen* like any other thing. In a different way, something can be considered which is measured by time, as such, and since what is first and foremost measured by time is change, which is what makes up *actio* and *passio*, a verb which signifies *actio* or *passio*, signifies with time.
>
> But a substance considered in in itself, and as it signified by the *nomen* and *pronomen*, need not be measured by time except insofar as it is subject to change, and then it is signified by the participle. And therefore the verb and participle signify with time, but not the *nomen* and *pronomen*. The third way would be to think of the relation of time as a measure, which is signified by the adverbs of time, like 'yesterday' and 'tomorrow'."[2]

Here, the *modi significandi* and *consignificatio* can be seen together and in contrast: for it is said that the *nomen* like *cursus* and the *verbum* like *curro* differ both in their mode of signification and in their consignification. The *nomen* and *verbum* are said to signify the same thing in nature in this

instance, but (1) the nominal signifies it as a sort of static thing, in abstraction from its actually being measured in time, while (2) the verb signifies it as actually measured in present time. The signification is therefore said to be essentially the same and modally different, in that the verb adds a determination to a common meaning found in the noun.

Another example of this sort is Aquinas' discussion of donum and datum. They are said to signify the same thing, but donum has no time-reference, and datum consignifies past time.[1]

In the work on the Fallacies, Aquinas says that a difference in consignification is to be expected in all the accidents of the parts of speech, such as gender, number, person and tempus[2] and that these must be taken into account to avoid the fallacy of equivocation. His explanation of an example of this shows that he confuses time with tense and does not consider aspect. The paralogism he gives is: "Quicumque surgebat, stat. Sedens surgebat. Ergo sedens stat." This is roughly "Whoever got up is standing. The man sitting got up. Therefore the man sitting is standing." He says that the fallacy consists in taking sedens in the minor as an imperfect tense, and in the conclusion as a present.

Another use of the notion of consignification in Logic is to distinguish identical and different terms on formal grounds. A difference in consignification destroys identity of terms. In syllogisms using Socratem currere, Socratem cucurisse, and Socratem fore cursum as terms, the only difference is said to be in the time consignified. Now unless difference of consignification destroys identity of terms, it would follow that, one of these being true, the others must also be true. Since the terms are not identical in consignification, they can be true or false independently of each other.[3]

Although he had said there is a difference in consignification to be expected in all the accidents of the parts of speech, he appears to consider declinable words in two ways. First, as analyzed into signification and consignification, then as two unanalyzable words differing in the mode of signification only. For example, _alius_ and _aliud_ are said to differ _only_ in their mode of signification.[1] This is possibly due to a confusion of logical and grammatical _genus_. Grammatically, _aliud_ would signify "other" and consignify "neuter" in Aquinas' terms. Of gender itself, he says "neuter gender designates something indeterminate and imperfect, masculine and feminine, something perfect and formed."[2] And again,

> "... neuter gender is indeterminate, masculine and feminine however, formed and distinct, and therefore a common essence is conveniently signified by the neuter, but a determinate supposit in a common essence, by the masculine and feminine."[3]

Elsewhere, he distinguishes the grammatical and logical categories, as well as their logical, grammatical and existential applications:

> "... the word _person_ is a common term but with a generality of meaning unlike that of _genus_ and _species_, since it indicates a vague indivdual. For the _names_ of genera and species, like _man_ and _animal_ are imposed to signify the common natures themselves, not the notions of common natures, which are signified by the names _genus_ and _species_. But a vague individual like "some man" signifies a common nature in a determinate way as befits singulars, that is, that it exists in itself as distinct from others."[4]

Consignificatio ex consequenti

The consignification and modes of signification discussed in the examples above appear to belong to them as _dictiones_, members of a word-class. In discussing the verb _est_, whose principal signification is said to be _existence_ without qualification, a different kind of consignification is discussed. _Est_ is used in Logic as the _copula_, simply a link between subject and predicate, and then it is said to consignify composition as

well as time, but composition only ex consequenti, that is, it has "a resultant consignification". Other verbs are said to consignify time and composition of themselves, as dictiones[1], but the fact that est consignifies composition is a consequence of this particular use of it in this particular sentence. Aquinas explains this in terms of the notion of composition itself:

> "...the composition which est signifies cannot be understood without the components. For if they are not put in, there is no perfect understanding of the composition."2

Modi significandi, intelligendi and essendi

One of the principal uses Aquinas has for the terminology of modes is concerned with language about God. Defining God is subject to all the difficulties of defining an absolute, something with no accidental determinations. Similar problems arise in speaking of anything we cannot adequately define.

The case of the primeval atom can illustrate this: assuming it to be both unique and inert, it could not be defined in terms of size, weight or location, since these require comparison with non-existent bodies. Assuming it to be unique but not inert, it still could not be defined in terms of energy, heat, color, movement, etc., since this still requires non-existent coordinates and light-source. But while this seems to be true from a "simultaneous" viewpoint, we are able to define or describe if from its presumed effects in our known universe. The same procedure can be used rationally with respect to God.

Aquinas would define Him in terms of His presumed effects, then distinguish what is signified, the mode of its signification, how this must be understood, and how those things we understand can conceivably exist in a Being with no accidental determinations. The process requires removal of imperfections, denial of limitations, and predication in an eminent way. This is a typical discussion of the problem:

"Some names do not imply any imperfection, as far as what the name was imposed to signify is concerned, but with respect to the way in which they signify, every name is defective, for by words we express things in the fashion in which we conceive them, and knowledge which starts in the senses cannot transcend that mode, where matter and form are distinct.

Unum, verum and bonum and so on signify simple forms, but as such, they are imperfect, for they cannot subsist, and something which has a form (habens formam) is not simple. Therefore whatever our intellect signifies as subsistent, it signifies in the concrete, and what it signifies as simple, it signifies not as what it is, but as that by which it is (non ut quod est, sed ut quo est). And so in every name we use, as far as the mode of signification is concerned, an imperfection will be found which is not true of God, even though the thing signified does pertain to God in some eminent way; for example bonitas and bonum. But bonitas signifies as non-subsistent, and bonum as something concrete, and so neither of these apply to God as far as the way they signify, but only insofar as the thing which the name is imposed to signify..."[1]

Aquinas says it is the Mode of Signification that distinguishes different genders[2], substantives and adjectives[3], abstract and concrete nomina[4] and, as has been seen, the noun and verb.

Consignification and Connotation

In modern use, the term "connotation" indicates the particular associations of emotional overtones which attach to a word, either in one style than another, or for a particular person. Aquinas' use of consignificatio suggests none of this. He uses one word, importat, which can be translated in more than one way, and in some instances, this approached the modern meaning of connotation.

Of the verb, he says "...verbum importat compositionem in qua perficitur oratio..."[5] but this can be taken in two ways: as a dictio, alone, a verb may "imply" or "call"for" or "connote" composition, but its function in an actual sentence is to "close"

or "bring about" the composition.

In other uses of importat there is a closer approximation to our "connote": "Praesumptio videtur importare quandam immoderationem spei..."[1]; "Amor qui est in intellectivo appetitu etiam differt a benevolentia. Importat enim quandam unionem secundum affectus amantis ad amatum."[2] "Modus importat quamdam mensurae determinationem."[3] "Misericordia importat dolorem de miseria aliena."[4] "Acedia est quaedam tristitia aggravans...et ideo importat quoddam taedium operandi."[5]

Modes in Aquinas' Philosophy

The dinstinction of modes of signification, understanding and being, for Aquinas, is an anti-platonic thesis involved in his position on the question of Universals:

> "To anyone who considers Plato's arguments carefully, it is clear that his error was in believing that the mode of a thing understood is the same in being as it is in the mode of understanding the same thing. And so, because he discovered that our intellect can understand abstracts in two ways, as universals abstracted from singulars, and as mathematical abstractions from sensible things, he held that to both these abstractions of the intellect there corresponds an abstraction in the nature of things, and that is why he held that mathematical Ideas and species subsist separately... but it is not necessary that these species be in the intellect in the same way as in the thing, for everything that is in something, exists in it according to the mode of the thing in which it exists.
>
> So from the nature of the intellect, which is different from the nature of the things it understands, it is necessary that the mode of understanding be one thing, and the mode of being by which its object exists, be another. And even though the intellect understands mathematical (notions) without understanding sensible things at the same time, and universals apart from particulars, it is not required that the mathematical (notions) or universals subsist apart from sensible things or particulars. For even the sight perceives color without smell, even though colour and smell are found together in sensible things."[6]

VERBUM

Like all meaningful expressions, the verbum in a proposition is said to have a threefold existence, in the conception of the intellect, in the vocal pronunciation, and in writing.[1] Discussing the verbum, Aquinas' principal intention is to distinguish it from the nomen in propositions.

The verbum differs first from the nomen, by consignifying time.[2] As was noted above, the verbum properly so-called consignifies present time, while the future and past are considered "cases" of the verbum.[3] Secondly, the verbum is always a sign of something predicated of something else. It can therefore only stand as predicate, while the nomina and participia can be both subject and predicate.[4] A sentence like curro est verbum does not invalidate this, since what has been said so far applies to the verbum, taken formally and in this example, curro is taken materially. The fact that any part of speech can function as a nomen in material use is shown by the possibility of using the article with them, both in Greek and in Vulgar Latin.[5] The third difference between verbum and the nomen is that the verbum implies, or calls for, or brings about "composition".[6] The Latin has importat compositionem, and the meaning of importat will vary, depending on whether the verbum is discussed in isolation or in a proposition.

It is this function of bringing about the composition required in judgements that principally distinguishes the verbum from the nomen:

> "... because the verbum brings about composition which constitutes a sentence which signifies something true or false, it was seen to be more like the sentence, as a kind of formal part, than the nomen, which is a kind of material or subjective part of the sentence..."[7]

A single verbum is more like a sentence than two nomina[8], and even though a single nomen can signify something true or false in answer to a question, even then, a verbum is understood.[9]

This distinction is based on the notion that propositions are those statements which are true or false. Since truth is a relation requiring at least two terms, there can be no truth or falsity without composition or division of the terms. The *nomen* as such does not imply composition, the *verbum* does, so that even if there is 'truth' when a single nomen is given in answer to a question a *verbum* is said to be understood in order for there to be something composed.[1] Similarly, in *verba* like *tonat* and *pluit* which are often uttered alone, and truly, (it's thundering, raining), and in verbs in the second and third person uttered alone, and truly, the 'implicit composition' is between the expressed verbum and a *determinatus nominativus*.[2]

Like the indefinite *nomen*, the *verbum infinitum* is said not to be included in the notion of *verbum* proper, for it is a part of the *verbum* to signify something as *actio* or *passio*, which the indefinites do not. Rather, they simply negate *actio* ar *passio*, and so they can be said indifferently of what does or does not exist, and for this reason, they are simple negations, not privations, which presuppose a determined subject. Such indefinite verbs, such as *non currit, non laborat*, differ from negative *verba* in being taken as a single *dictio*, whereas the negative *verba* are taken as two *dictiones*.[3] But there is this great difference between the indefinite *nomen* and indefinite *verbum*: in a proposition and outside of a proposition, an indefinite *nomen* is always taken as such; but while the indefinite *verbum* outside a proposition may be taken as a single *dictio*, within a proposition, it makes no difference in the truth of the proposition whether the negative particle is taken as making the verb a negative or an indefinite, so it

is always taken in the simpler and more obvious meaning suggested, that of the negative.[1]

Verba taken alone, apart from the nomina with which they form propositions, are like the nomina in signifying a simple concept[2] and in being neither true nor false logically.[3] Since it has already been shown that a nomen or verbum (and presumably any part of speech) can signify something true or false when uttered alone, this is not now being retracted. For the other parts of speech signify something true or false when a verbum is understood from the question or circumstances of the situation. But a verbum alone, in order to signify truth or falsity, must signify composition or division of two elements, and in every verbum, a "determinate nominative" is 'understood': this is doubtless an allusion to the analysis of currere as currentem esse, with the implied analysis of curro as currens est.[4] But the verbum taken strictly alone, is the verbum as a dictio, which cannot signify the existence or non-existence of what it signifies principally, even though it might have "existence" as its principal signification:

> "He proves this consequently through those verba which especially seem to signify truth or falsity, namely, the verbum which is esse, and the verbum infinitum which is non esse[5]. Neither of these taken alone signifies either truth or falsity in things, and therefore, much less the other verba. Or this can be taken quite generally of the other verba. Since he had already said that a verbum does not signify if a thing is or is not, he goes on to explain this, that no verbum is significant of the being or non-being of a thing... Although every verbum implies (implicet) being, for currere is currentem esse, and non currere is non currentem esse; but nevertheless, no verbum signifies this whole thing, namely, that a thing exists, or that a thing does not exist."[6]

Aristotle had said that verba taken alone are nomina , and this had been interpreted by some as applying to the verba

in examples like currere est moveri, or taken materially as curro est verbum, but Aquinas does not think this was Aristotle's intention, or that it fits in with what he says later. So he prefers to interpret nomen here as applying to any dictio whatever which is imposed to signify some thing. Insofar as the verba name something, therefore, and in this case, it is agere or pati, they can be included under the nomen.[1]

If someone takes objectionto Aristotle's criterion of what "means something", Aquinas thinks this can be defended too, It was suggested that since words stand for concepts, when a speaker intends to signify something by a meaningful word, he arouses teh same concept in his hearer, and then the hearer is satisfied. But, Aquinas adds, since there is a double act of the intellect, "satisfy" must be taken in two ways, one of which is proper to the simple understanding of a term, and the other to judgements, and of course, a simple dictio does not "satisfy" in this second respect.

Cases of the Verbum

The verbum proper consignifies present time, and Aquinas defends the notion that the future and past are 'cases' of the verbum, since it is essential to the verbum to signify agere and pati as actual, or absolutely, and they are such only in present time, but only "after a fashion" (secundum quid) in the past or future.[3]

But the 'cases' of the nomen differ from those of the verbum in an important respect: the present is that with regard to which the past and future are said, since the past is what was the present, and the future what will be the present.[4] As a consequence, the present, as the casus restus to the past and

future, the casus obliqui, is contained in the oblique cases, whereas the casus rectus in the nomen is not contained in the oblique cases; only the signification is identical to the nominative and the oblique cases of the nomen. That is why a true proposition cannot be formed with the oblique cases of the nomen, whereas a verbum in any 'case' whatever - in any tense - can form a true proposition with the nomen.[1]

The moods of the verbum are also considered 'cases' but there is little more than the affirmation of this, and very little discussion of the various moods. The imperative is said not only to signify, but effect something[2], and since the intellect can not only conceive the truth, but order others to act upon it as well, the imperative will be used for this purpose to inferiors, but the optative to superiors.[3]

But while the tenses and moods are considered "cases", person and number are not:

> "But although the declination of the verbum is varied through moods, tenses, numbers and persons, the variation of number and person do not constitute cases of the verbum; for such variation is not from the part of the action, but from the part of the subject. But that variation which is through moods and tenses regards the action itself, and therefore constitutes cases of the verbum. For verba in the imperative and optative mood are called cases in the same way as verba in the past and future tenses. But verba in the present indicative are not called cases, no matter what person or number they may be."[4]

Voice

Just as he held that the difference between the masculine alius and the neuter aliud was one in the mode of signification, so too Aquinas holds that active and passive voice differ in

the mode of signification, not in consignification. It is evident on Aquinas' definitions that alius-aliud and active-passive do differ in consignification. To differ modally, they must signify 'the same thing', but differently. This implies the notion of 'other' which is neither masculine or feminine, and 'activity' which is neither active nor passive. No form of the language has this signification[1a]. To discuss alius-aliud and active-passive in this way, then, has no basis in his grammar or logic. It can be useful in distinguishing a modus-significandi and modus intelligendi or essendi, as is the distinction of transitive-intransitive:

> "Even though intelligere and velle and amare are signified as transitive with objects (per modum actuum transeuntium) they are immanent in their subjects, but in such a fashion that a relation is implied in the subject itself to the object. So love, even among us, is something that remains in the subject, and the verbum cordis remains in the speaker, but there is still a relation to the thing expressed by the word and to the thing loved."[1]

In this regard he also says that since only transitive verba can have a passive, the two elements of a transitive construction must be different, if not actually, at least conceptually, and this is sufficient difference for the grammarian.[2]

The individual accidents of the verbum are little discussed. The confusion of tense with time has already been noted, also the restriction of the verb-proper to the signification of present time. So it is a little odd to find that Aquinas makes an exception for those verbs which signify acts of the mind, which, he says, are free of the limitations of time, so that an expression like homo laudatur can be understood of the past, present or future.[3] This is certainly correct, but not consonant with his insistence on the principal signification of the verbum being present time. The restriction is one of logic, not ordinary usage, as will be seen in the enunciatio. The imperfect is said to signify something which began in the past and still continues to exist, so its use in the beginning of St. John's Gospel, "In principio erat Verbum..." is found very apt.[4]

Number in the _verbum_ will vary with the number of persons involved, and thus Aquinas explains the grammar of Christ's saying "_Pater et ego unum sumus_" since there are two Persons, Father and Son, but only one substance.[1]

Infinitive and Participle

What Aquinas has to say about the Infinitives has already been mentioned, and can briefly be repeated here: they signify the inherence of an action in its subject, and therefore can be taken either as _nomen_ or _verbum_ according to the mode of signification. When used as a _nomen_ the infinitive in Greek and vulgar Latin takes the article.[2]

The Participles are included under the _nomen_ and _verbum_, like the infinitives,[3] and they signify a substance insofar as it is subject to change[4]. Since it is included under the _verbum_, a participle signifies some thing as measured in time, and since it is included under the _nomen_, it can be both subject or predicate, while the _verbum_ can only be predicate.

It is in discussing participles that Aquinas shows a practical awareness of the difference between time or tense and aspect:

> "Granted that this participle _praedestinatus_ implies priority (_antecessionem_), just like the participle _factus_, it still does so differently..."[5]

And in discussing the text "_Accipiens panem, benedixit dicens_", he says:

> "The participle _dicens_ implies a kind of concomitance of the words pronounced with what has preceeded..."[6]

But the confusion of tense and time is again seen in two well-chosen examples:

> "Words are true in the last instant of their being pronounced, like _nunc taceo_, _nunc bibo_..."[7]

A few other examples would immediately invalidate this, such as "Nunc incipio loqui." What prompted this observation is a very special case, the moment in which the words of Consecration in the Sacrament of the Eucharist can be said to be "true", that is, when they have produced their effect. Also in the back of his mind is the unity of signification proper to the proposition, which is not the same as the unity of signification proper to a single word.[1]

Other pates orationis

All of the expressions which Aquinas has so far considered are categorematic: the nomen, pronomen, participium and verbum. These are considered the principal parts of an oratio[2], and the others, the syncategorematic terms, are considered binding elements rather than principal parts, and all parts are considered as such with reference to the whole of which they are parts, namely, the oratio perfecta.[3] None of these are interpretationes[4] or enunciationes, which are the same thing[5], and they are not nomina or verba.[6]

The difference between categorematic and syncategorematic expressions has been seen to consist in a logical and psychological distinction: logcially, the categorematic expressions are the variables, the syncategorematic expressions are the logical constants. Psychologically, the categorematic expressions signify something that can be imagined and understood; the syncategorematic expressions express what can only be understood. In general, relations are only objects of understanding, the relata, objects of both imagination and understanding. The parts of an oratio which signify relations above all are the prepositions.

Aquinas gives no definition of prepositions, but discusses their signification. Two prepositions frequently discussed are de and ex. These are used fairly interchangeably, and the difference

between them is that _de_ more often denotes _consubstantiality_, while _ex_ more often means a relation of origin, an _ordo principii_.[1] Denoting consubstantiality principally, _de_ will apply to a material cause or consubstantial agent, in expressions like "_Homo filius generatur de patre suo_" (a man-child is generated from (the same substance) as his father) and _cultellus de ferro_ (a knife made of iron).[2]

_Ex_ more often denotes a relation of origin: e.g. temporal origin, as in _ex mane fit meridies_, which is explained as _post mane fit meridies_ (noon comes from morning)[3]; or origin from an efficient cause, like _artificialia ex artifice_ (artifacts made by an artisan); or material cause, as in _cultellus ex ferro_.[4]

The caseof the _nomen_ signifies relations, too[5], but not as explicitly as the preposition:

> "This preposition _ex_ denotes the relation of an efficient or material cause, but in the genitive case, any causal relationship can be understood, as in _ejusdem essentiae_ as opposed to _ex eadem essentia_[6]."

The preposition _per_ can denote a causal relation, a situation or mediation:

> "This preposition _per_ designates a relationship of cause. But sometimes formal cause, as in _corpus vivit per animam_, sometimes material cause, as when we say that a body has color _per superficiem_, since surface is the first subject of color. It also designates an extrinsic, especially an efficient, cause, as when we say that water is heated _per ignem_."[7]

> "In all expressions in which it is said that someone acts through someone else, this preposition _per_ designates in the causal (term) some sort of cause of principle of his action. But since _actio_ is mid-way between the doer and the deed (_inter faciens et factum_), sometimes the causal term, to which this preposition _per_ is added, is the cause of the action insofar as it goes out of the agent. And then it is cause with respect to the agent in order that he act; whether this be a final or formal cause, whether effective or motive: a final cause, as when we say that an artisan works _per cupiditatem lucri_; formal when we say that he works _per imperium alterius_. But sometimes

> the causal expression to which this preposition is joined is the cause of the action insofar as it terminates in the product (factum), as when we say artifex operatur per martellum. For we do not mean that the hammer is a cause as far as the artisan is concerned, required that he may act, but that it is a cause with respect to the artifact, so that it can be produced by the artisan... and this is what some mean when they say that the preposition per sometimes means 'authority' in the nominative, as in rex operatur per ballivum, and sometimes in the oblique, as in ballivus operatur per regem."[1]

Other prepositions he discusses are a, ab, which designate the agent directly, and more strictly than the other prepositions;[2] in has almost as many meanings as uses[3]; ad can signify an approach to a distant object, the relation of exemplary cause, or the term of an operation[4]; propter can signify the relation of formal or final cause, or any cause.[5]

Conjunctions are mentioned in passing, but usually with no more than the assignment of an equivalent expression. Enim is used "because of the continuity with the preceding words"[6]; secundum quod in the many questions about Christus, secundum quod homo, can give rise to the fallacy of composition[7], since in the examples cited, it can modify relationships principally on the part of the subject or predicate[8], can show a condition or a cause[9], or a condition of the nature or equality of the supposit.[10] In precepts like "Love thy neighbour as thyself", the sicut does not mean "equally" as it may elsewhere, but "in the same way."[11]

Adverbs are said to modify verba, but either from the part of the subject or object. In asking if it is possible to say that we can truly know something as it is in the knower, (sic cognoscere aliquid sicut in cognoscente) Aquinas says the adverb sic can apply either to the thing known, or to the knower: we can know something in the same manner as someone else, but we cannot know it precisely as it is in his intellect.[12]

The same distinction is used to decide questions about whether infidels or animals eating the sacramental species of the Eucharist would truly be said to receive Christ sacramentally. The Latin is clearer here:

> ".. etiam si infidelis sumat species sacramentales, corpus Christi sub sacramento sumit. Unde manducat Christum sacramentaliter, si ly _sacramentaliter_ determinat verbum ex parte manducati. Si autem ex parte manducantis, tunc, proprie loquendo, non manducat sacramentaliter, sed ut simplici cibo..."[1]

Aquinas names the adverbs _forte_ and _fere_ (perhaps, almost) adverbs of a dubitative and tempering mood when speaking of the vices of old age.[2] The adverb _bis_ (twice) is said to number an act.[3] And where had dealt with _sicut_ as a conjunction above, he once calls it an adverb in discussing "_Videbimus sum sicuti est_", employing the same kind of distinction mentioned in the first two examples: _sicuti_ can modify (_determinat_) _videbimus_ either from the part of the thing seen, or from the part of one seeing.[4]

I find only one explicit mention of interjections. In discussing the language of men and animals, Aquinas notes that the other animals get to the point of uttering their joys and sorrows vocally, and in place of these, we have interjections.[5]

O R A T I O

Aquinas comments on Aristotle's definition of the *oratio*[1] as follows:

First the resemblance and lack of parallel is shown to the *nomen* and *verbum*, which are both significant, but only the *oratio* signifies a composite concept.[2] The parts of a *nomen* or *verbum* taken separately are not significant, but the parts of the *oratio* are: this is an allusion to the compound *nomina* whose parts are significant of something, but not as separate, whereas the parts of the *oratio* are each significant, and each significant of something as separate.[3] And Aquinas says that this is put in this fashion because of the negations and other syncategorematic expressions, which are meaningful of themselves, but not of something separate (*absolutum*), but only of the relations of one thing to another.[4]

Since there are two kinds of signification that vocal sounds can have, one which stands for a simple concept, and another which stands for a composite concept or judgement, the parts of an *oratio* are significant like any *dictio*, of a simple concept, not of a judgement, which requires a *nomen* and a *verbum*.[5] The parts of an *oratio* are therefore not actually affirmations or negations, but only potentially so.[6] This, of course, is primarily true of the simple *oratio*, whereas a compound *oratio* like "*Si sol lucet super terram, dies est*" does have a part which signifies as an affirmation (*dies est*). But although all parts, as parts, are referred to a perfect whole, some are immediate, and others mediate, like the roof and walls of a house are immediately referred to the whole, and the stones mediately to the whole through the wall, of which they are parts. Similarly,

all the parts of an oratio are so-called in view of the perfect oratio, part of which is an imperfect oratio, which itself has significant parts.[1] An oratio like homo albus is part of the oratio perfecta, like homo albus currit[2] , it does not signify something true or false like the oratio perfecta[3], and only the oratio perfecta satisfies the intellect[4] and has complete sense.[5]

The principal parts of the oratio perfecta are only the nomen and verbum[6]. It has five types: the declarative, imperative, interrogative, vocative and request.[7] Of these, only the declarative signifies something true or false. The vocative cannot consist merely of a vocative case of the nomen, but requires the addition of more parts, as in o bene Petre.[8]

The different types of sentences are interrelated. Basic is the declarative type, which manifests the intellect's judgement of what is true or false. But it is the business of the intellect not only to judge about the truth and falsity of things, but to see to action consequent upon it, and that why the other sentence-types are required: the vocative demands another's attention, the interrogative requires him to answer, the imperative orders inferiors to carry out commands, and the request, to which the optative type is reduced, does the same with respect to superiors. Sentences that are of any type, but which can be considered true or false, are reduced to the declarative, and a dubitative sentence is reduced to the interrogative.[9]

The Logician is interested only in the declarative sentence (ennunciatio). The other four types are left to the study of Rhetoric and Poetry, insofar as what they mean is concerned (significatum,) since poets and rhetoricians seek to move others, not merely through the truth of things, but through the dispositions of their auditors. The Grammarian pronounces upon their congruous construction.10

A sentence of any type, complete or incomplete, or in any mood, has meaning by convention, like any part of language, and not naturally:

> "There were some among the Ancients who held that the <u>oratio</u> and its parts have meaning naturally, and not by convention... and this argument, which is said to be Plato's in the "Kratylos", is denied by Aristotle, who says that every <u>oratio</u> has meaning, not as the instrument of a power, that is, a natural faculty; for the instruments of the natural powers of expressing judgements (<u>interpretationis</u>) are the throat and lungs, by which the voice is formed, and the tongue and teeth and lips, by which it is articulated and distinguished into sounds. And the <u>oratio</u> and its parts are the products (effectus) of the power of expressing judgements through the aforementioned instruments. For just as the power of movement uses natural instruments like the arms and hands to perform artificial works, the power of expressing judgements makes use of the throat and the other instruments to make the <u>oratio</u>. Therefore an <u>oratio</u> and its parts are not natural things, but a kind of artificial product. That is why he adds that the <u>oratio</u> has meaning by convention, that is, according to the institution of human reason and will, just as all artifacts are caused by human reason and will."[1]

Since judgements are not a necessary consequence either of the structure of the things we experience, nor of the body by which we experience them, Aquinas concludes that the power of judging is not corporeal. It is reason, he says, that moves the motive powers of the body to perform all artificial works, and reason can use the faculties themselves, since the artifacts are not instruments of any corporeal faculty either. Bythe same token, the intellect can use the sentence and its parts as instruments, even though they do not have meaning naturally.[2]

<u>PROPOSITION</u>[3]

A proposition is a sentence in which there is truth or falsity.[4] A proposition is said to be 'true', not in the same way as other things, but true or false as a sign, since brass may be called false gold, but it is true brass.[5] A proposition must consist of at least a <u>nomen</u> and case of the <u>verbum</u>[6], but not of the other parts of speech without these[7], and not of a case of the <u>nomen</u> with a verbum.[8] Although an indefinite <u>verbum</u> is indistinguishable from a negative <u>verbum</u> in the meaning of a proposition, the substitution of an indefinite nomen for another nomen would make a different proposition.9

Propositions are divided in several ways: first, they are simple or complex, and this can be decided, either from the side of the proposition itself, or from its meaning. Petrus currit may be complex, since it is composed of two dictiones, but the unity or plurality of a proposition does not depend on the number of expressions employed. For propositions, two types of unity and two types of plurality are distinguished, depending on the predicate.[1]

A proposition is called simply or absolutely one, when a single predicate is applied to a single subject (unitas simplex or absoluta). The unity is relative (secundum quid) when the predicate involves several terms which may be considered as functionally one, as is the case with definitions which employ several terms; e.g. Petrus est homo would be called simply or absolutely one proposition, Petrus est animal gressibile bipes is one proposition relatively, since the predicate is not simply one, but one by conjunction.[2]

Absolute vs. relative plurality is distinguished in the same fashion as absolute vs. relative unity, and the divisions overlap. For Petrus est animal gressibile bipes is a complex predication, absolutely considered, but it is a single or simple predication relatively, secundum quid, that is, insofar as animal gressibile bipes is a definition of a single thing. A proposition is absolutely or simply complex when the predicate involves elements that cannot be considered as forming the unity found in definitions, as in Petrus est homo albus musicus.[3]

These questions of simplicity and complexity are developed at length, but they are of more logical than linguistic interest. What is linguistically important is the insistence that unity or complexity of signification is not the same for propositions as it is for the nomen and verbum, since it consists in saying "one thing" about "one thing.[4]

Aquinas assigns some conditions for the unity of signification in a definition such as animal gressibile bipes: it must be pronounced continuously, without the insertion of conjunctions or other interruptions, and without the pauses which the orators use

in place of conjunctions. The reason given is that a conjunction inserted between parts of a sentence prevents the succeeding part from modifying (determinans) the preceding. But it will be recalled that Aquinas considers "secundum quod" as a conjunction[1], and that he discusses how this expression does affect the relationship of what precedes and follows it to the predicate, as well as the relationship of the first and second member of such an expression to each other. His principle therefore has no general validity whatever.

Propositions are further divided on the basis of form, subject, predicate, tense, matter and type. Much of what is said about these distinctions are of little linguistic interest, so attention will be called only to those details which are directly involved in his understanding of language.

Propositions are said to be positive or negative in form[2] and in categoric propositions, that is, predications[3], this is determined by the form of the verbum.[4] According to the subject, propositions are divided into universal, particular, indefinite or singular.[5] This division is based on things, not directly on their expression in words, since things are considered either singular or universal (common).[6] "Things" of course here means things as known, and named according to that knowledge, since the intellect can distinguish the common element in singular things, and decide upon what is unique to the singular. The common or universal element so distinguished can exist as universal only in theintellect.[7]

According to the predicate, propositions are divided into propositions de secundo adjacente and de tertio adjacente. An example of the first is Petrus currit, of the second, Petrus est currens. The difference is in the number of dictiones added to (adjacens) the subject, therefore, the number of dictiones in the predicate proper. Both currit and est currens

are considered the predicate proper, but currit is only the "second (expression) added" to the subject, while est is the "third expression added" to the subject, after currens. The distinction draws attention to the difference between the examples cited, and Petrus est, where est alone is the predicate.[1]

Propositions employing present, past and future tense are distinguished, since one of two contradictorilly opposed statements in the present or past must be determinately true or false, while those in the future will be variously true or false depending on the matter involved.[2] This is how Aquinas understands the different kinds of matter about which propositions are concerned:

> "There is a fifth division of propositions according to their matter, and this division is tobe seen (attenditur) according to the relation of the predicate to the subject. For if the predicate pertains necessarily to the subject, the proposition will be said to be about necessary or natural matter, as when we say homo est animal, or homo est risibile. If the predicate is necessarily repugnant to the subject, as it were excluded by its very nature, the proposition will be said to be about impossible or remote matter, as when we say homo est asinus. But if the predicate is neutral with respect to the subject, so that it neither pertains to it of necessity, nor is repugnant to it, the proposition will be said to be about contingent or possible matter."[3]

Aquinas discusses three types of propositions, the categoric, hypothetical and modal. The distinctions so far mentioned apply principally to categoric propositions, and are altered in some respects when applied to the other two kinds.

Hypothetic or conditional propositions differ from the categoric in not being absolutely true or false, in being composed of more than a single categoric proposition, and in being insufficient for demonstrative science. They are true or false, depending on the verification of the condition affirmed or denied, and positive or negative depending on the affirmation or negation of the conjunction of the parts.[4]

Modal propositions are opposed principally to the categoric. A categoric proposition is said to be de inesse, that is, about "what pertains to what". A mode is a determination or modification added to something, and this is indicated by an adjective, as in homo est albus, or through an adverb, as in homo currit bene.[1]

Modes can determine either subject, predicate, or the relation of subject to predicate. A modal determination of the subject is exemplified as homo albus currit, of the predicate in homo currit bene or Socrates est homo albus. A modal determination of the subject-predicate relationship is seen in Socratem currere est impossibile.

Six types of this last modal determination are given: true, false, necessary, impossible, possible and contingent. Of these, "true" and "false" are said to add nothing to the meaning of propositions de inesse, since both Socrates currit and Socratem currere est verum are said to mean the same thing. This is not true of the other four modes, since it is not the same thing to say Socrates currit and Socratem currere est possibile.[2]

Now since the predicate modifies (determinat) the subject, but the subject does not determine the predicate, in order for a proposition to be modal, one of these four modes must be the predicate. The subject must be a verbum implying composition: this is proper to the finite verbum, but in modal propositions the infinitive is substituted for the finite form, and the accusative of the nomen is used for the subject of the verb. These two together are called the dictum of the modal proposition, so that in the modal proposition Socratem currere est impossibile, the dictum Socratem currere is subject, and the modal impossibile, the predicate. This is an example of a modal proposition de dicto. A proposition de re inserts the modal into the dictum, as in Socratem possibile est currere[3]. All propositions de dicto

are singular, those _de re_ will be singular, universal, particular or indefinite according to the quantification of the subject of the _dictum_, as in categoric propositions. Thus the proposition _omnem hominem possibile est currere_ is universal. Depending on whether the mode itself is affirmed or denied, the modal proposition as a whole will be called affirmative or negative, without reference to the affirmation or negation of the _dictum_. _Socratem non currere est possibile_ is therefore affirmative, and _Socratem currere non est possibile_ is negative.[1]

There are other similarities of the modal propositions to the categoric. Just as possible and contingent matter are taken as equivalent[2], the modes of possibility and contingency are also taken as equivalent.[3] The necessary mode is comparable to a categoric proposition with a universal affirmative sign, the impossible like a categoric with a universal negative sign, and the contingent like a categoric with a particular sign.[4]

Aquinas makes no explicit mention of word-order in assigning these distinctions, but it is clear that only word-order will distinguish a modal proposition about a statement from a modal proposition about a state of affairs in such examples as _Socratem possibile est currere_ vs _Socratem currere est possibile_. As in his restriction of the _nomen_ to the nominative form in the categoric propositions[5], the difference between such modal propositions _de dicto_ and _de re_ as those quoted above is based on the logician's arbitrary rules, not on normal usage.

Much of what has been developed here on the notion of modes is of importance to the understanding of features involved in the notions of _Ampliatio_ and _Restrictio_, which willnow be explained.

AMPLIATIO and RESTRICTIO

Aquinas does not define ampliatio and restrictio explicitly but uses the terms as though they were self-evident. His use of the terms shows that he understood them in the same way as his contemporary Petrus Hispanus[1], and the similarity of language both employ in discussing them suggests that the definitions Hispanus gives were commonly known at the time.

Ampliatio is "the extension of a common term from a lesser to a greater interpretation"[2]; restrictio is "the limiting of a common term from a greater to a lesser interpretation"[3]; suppositio personalis, of which extension and restriction are divisions, is "the interpretation (acceptio) of a common term for its inferiors"[4]; and suppositio in general is "the interpretation of a substantiv e term for something."[5]

The interpretation of a common or universal term is extended when nouns (including our adjectives), verbs, participles and adverbs of a particular type are used with it;[6] the interpretation of a common term is restricted, when nouns, adjectives, participles adverbs and relative clauses of a particular type are joined to it.[7] Such relative clauses are equivalent to adjectives.

Hispanus does not characterize those 'particular types' of nouns, verbs, participles and adverbs which have the power of extending the interpretation of a common term with which they are used. But all the examples he gives of the ones that do have vim ampliandi are modal[9], such as potens, possibile, potest and necessario.

Aquinas would evidently include the modals among those words which have vim ampliandi, as he remarks in passing that potest "Habet vim ampliandi"[11], but besides the modals, he points out a particular class of words which also have vim ampliandi:

> "This participle praedestinatus pertains to an act of the soul, and from this fact has the vim ampliandi to any time whatever, just as when we say homo laudatur, it can be understood of the present, past or future..."[12]

> "This participle _factus_ is different from _praedestinatus_ because it designates a real act, while _praedestinatus_ designates an act of the soul. For the soul, according to its understanding and reason, can distinguish those things which are joined in reality, and can think and talk about a white wall separately as _white_ or as _wall_.."[1]

As a consequence of this distinction between mental and physical acts, these two conditional propositions will be treated differently: "If the sun moves, the grass will grow" and "If the soul understands something, that thing is immaterial", for whenever the antecedent contains some word referring to an act of the soul, the consequent is to be taken according to the way it is in the soul, and not as it is physically in itself. Thus the second example can be considered true, since whatever is in the soul, is in it immaterially, even though it is physically material in itself.[2]

Both Hispanus and Aquinas say that verbs and participles as predicates do not restrict the subject term with respect to its signification, but only as far as the time consignified.[3] On this basis, any participle in the past should restrict the interpretation of the subject term for those things in the past, but, as has been seen, Aquinas makes this exception not discussed by Hispanus, that words designating mental acts, even if they are in the past, do not restrict the interpretation of the subject term, but rather extend it to all times, and it is because of this that _factus_ and _praedestinatus_ differ.[4]

Usage can either restrict or extend the interpretation of a term, according to Aquinas. The word _judicum_, in its first meaning (_in prima impositione_), means the correct determination of what is just, but by usage, has been extended to mean any correct determination at all, in both practical and speculative affairs.[5] The first meaning of _habere_ seems to apply only to those things of which we are the complete masters, but it is extended by usage to meny others, as when it is said that a man

has a wife, or clothes, or health and so on; in the same way, avaritia has been extended to designate immoderate desire of having anything at all.[1]

By usage, names which can stand for many things are often restricted to apply to one among them which is outstanding. In this way, Urbs has become the proper name of Rome[2], fortitudo has come to mean especially that virtue by which firmness of mind is preserved in difficult circumstances, and temperantia is applied especially to that virtue which moderates what is most pleasurable.[3] Similarly, among the Greeks, the word hypostasis could mean any individual substance at all, but usage restricts it to stand for human individuals, because of their excellence.[4]

Although Aquinas does not develop the notion of the mutual restriction of terms found in Hispanus' work[5], it would be a simple development from his understanding of how material and formal causes are related.[6] Forms are educed from the potency of matter by an efficient cause. Since the potency of things is limited, the number and kinds of forms which can be educed is limited by the matter, and in this sense, matter puts a limit upon form, though it does not perfect it. It is the function of form to perfect matter, to make a thing what it is, since form is the principle of being and activity of each thing, whether it be a substantial form or accidental form, and in this sense, form determines matter. Hence it is that each determines the other.[7]

Linguistic elements in conjunction are compared to each other as matter and form. In predication, the subject is matter, the predicate form;[8] in a definition, the generic expression is matter, and the specific, form[9]; the noun and verb are material principles of a proposition, since their signification is of simple concepts, while the oratio itself is the formal principle, since its signification is a composed concept or judgement.[10]

A more detailed examination of what is implied in the notions of restriction and extension brings to light several important features of Aquinas' understanding of language. The first thing to note is that both restriction and extension concern interpretation, not signification. As an activity of the speaker, <u>significatio</u> is the imposition of a name on a thing and <u>suppositio</u> is the acceptance of an already significant expression for a thing.[1] This could be 'the same thing', or, more importantly, a different thing. As a property of a term, <u>significatio</u> is the fact or possibility of standing as the sign of something. It stands immediately for a concept, and mediately for things. <u>Suppositio</u> as a property of a term is the fact or possibility of being applied to a number of things, and this is based upon the concept which mediates between meaningful expressions and the things to which they are applied. The relation of a linguistic sign to its significate requires only agreement among speakers, not a natural or necessary proportion between sign and signified; interpretation however requires similarity between the things signified by the same conventional sign, and this would seem to put a limit upon the radical conventionalism of language which appears when the relation of a single sign to a single thing is considered. It also seems to suggest that it was this that Hispanus' had in mind in distinguishing signification from interpretation:

> "Significatio prior est suppositione et non sunt idem, quia significatio est vocis, supponere vero termini jam compositi ex voce et significatione. Ergo suppositio non est significatio. Item significatio est signi ad signatum, sed suppositio non est signi ad signatum, sed suppositi ad suppositum, ergo significatio et suppositio differunt..."[2]

For Aquinas, this kind of consideration was doubtless the basis of his doctrine of analogy, since similar things are understood similarly, and this will appear more clearly in considering his notion of the truth of propositions.

Secondly, extension and restriction concern categorematic,

not syncategorematic, signs. This is consonant with Aquinas' understanding of logic, where the syncategorematic expressions are constants, and the categorematic variables. It is also founded in his psychology, since the syncategorematic expressions stand for relations which are constant in different acts of understanding and cannot strictly be the objects of imagination, while the categorematic expressions stand for the _relata_, the imagination and understanding of which is variable.

Thirdly, to discuss the extension and restriction of interpretation seems to presuppose a basic interpretation capable of being extended or restricted. For Aquinas, this is conceivably based in the difference between analyzing an expression as a _dictio_ and as a part of a sentence. On this basis, restriction is easier to allow than extension. If an expression is taken as a _dictio_, in no context whatever, it is not unreasonable to see it as being capable of all the interpretations found in given contexts. But in a given sentence, the same expression always has a given use[1], and in this sense, it might be thought of as "restricted" compared to the same expression as a _dictio_. A _dictio_ as such abstracts from concrete employment, therefore from extension and restriction found in the concrete use. Hispanus' principle was that the addition of any expression to another restricts it, with the exception of those few expressions which he said had the power of extending.[2] The addition of an expression to another constitutes concretion, and the consequence is that extension cannot be the extension of the interpretation of a _dictio_, which is abstract, but rather, it is the cancellation of restriction otherwise found in concrete employment.

Fourthly, a distinction must be drawn between the quite general problem of extension and restriction discussed above, and the historical question involved in the use of particular words like _judicum_, _fortitudo_ and _avaritia_. What is 'basic' here is the use of a word at one time, compared to its use at another.

The way that Aquinas speaks of this sort of extension and restriction shows that he was not unaware of the difference.[1]

Fifthly, it has been noted that the Medievals accepted the ancient notion that Air was an unanalyzable physical element, and that this was partially accountable for their failure to reach a satisfactory phonetics, and resulted in their confining themselves to the written word, denying that any analysis below the level of the 'word' could be carried out.[2] An analysis into stem and affix would have brought with it a clearer appreciation of syntactic relations, and would therefore have illuminated not only restriction and extension, but the notions of Modes of Signification, Consignification and Principal signification as well.

For instance, Aquinas held in one place that _alius_ and _aliud_ differed only the mode of signification, and in another, that gender difference founds a difference in consignification as do all the accidents of the parts of speech. He is clearly comparing the unanalyzed _alius_ to _aliud_ in the first case, and implicitly aware of a possible analysis _ali_ - _us_ vs _ali_ - _ud_ in the second. Again, in saying that _cursus_ and _curro_ differ both in Consignification and the Mode of Signification, Aquinas seems to base the difference of Mode in the different sum of meanings: (_cursus_: 'run' plus 'masculine' plus 'singular' equals 'Substantial' or 'Principal Signification'. _Curro_: 'run' plus 'first person' plus 'present active' equals 'Verbal' or 'Signifying _with_ time'). But the difference is not one that is determinable merely on such a sum-of-meanings analysis, which is basically morphological, since _curro_ can stand as a _nomen_ in a proposition, while _cursus_ could not stand as a _verbum_ alone. To determine the mode of signification, the syntactic function must also be examined, and it is absolutely basic.

Sixthly, the restricted number of accidents and the syncategorematic expressions like prepositions and conjunctions compared to the categorematic expressions as an open class

should have reversed the importance attached to the categorematic expressions. It is certainly true that the syncategorematic expressions are "*magis colligationes partium orationis... quam partes*"[1], but without them, language would fall apart as surely as a ship without nails: they are the constants, and the categorematic, variables. A successful stem and affix analysis with determination of syntactic rules would have founded a more suggestive formalization for Logic as Aquinas saw it. The really "absolute" form in Latin, of which all others are "cases" or "modes" or "accidental determinations", is not the nominative of a noun, but its stem or root: *alius* must be singular, nominative, masculine, and *aliud* singular, neuter. But a root like *ali-* in Aquinas' terms, would have signification which abstracts from any particular mode of signification or any particular consignification. Even in his Psychology, such an analysis would have pointed up one of the sources of conflict between the *modi intelligendi* and *significandi*, since such a highly abstract and indeterminate notion of "other" which a root like *ali-* would signify is a typical object of understanding for Aquinas. Part of the conflict he discussed is due to the fact that any expression in Latin must follow the grammatical rules of Latin, whatever their basis.

Finally, had Aquinas been able to analyze forms into root and affix, he would certainly have discussed their composition in terms of matter and form, just as he analyzed the composition of noun and adjective, subject and predicate. The root or stem would be the material, determinable part, and the affix the formal, determining part. This would have led to a better foundation for syntax, since the "determination" added is less concerned with semantic than syntactic relations.

THE TRUTH OF PROPOSITIONS

The differences between human and animal language can be seen in their origin and use. Human language is conventional in origin, animal language natural; human language in use is at least reductively, since habitually, rational, whereas animal language is physically determined, despite the degree of self-determination animal activities display.[1] For this reason, the Vocative, Interrogative, Imperative, Optative and Request types of sentences are reducible to the Declarative[2], and all human activity, insofar as it is specifically human, is based ultimately on some sort of rational activity.[3]

For Aquinas, then, the truth of propositions is of importance to all human activity, both linguistic and non-linguistic. He bases the truth of propositions on the structure of things, not on man's estimation of what appears true to him alone.[4]

A true proposition is one that asserts the existence of something that does exist, or denies the existence of something that does not exist. A false proposition is one that affirms the existence of something that does not exist, or denies the existence of something that does exist.[5]

Truth is always a relation of things to an intellect.[6] Things are only called true when they are known as true by an intellect.[7] Truth is said differently of things, however, of things as objects of human intellects, and in themselves.

Things are either natural or artificial. Natural things are those which come into being, develop and corrupt without requiring human activity.[8] Artificial things are those produced by human activity, not that they owe their being as such to the artisan, but that they are this sort, rather than another sort of thing, as a result of his activity.[9]

In the case of artifacts, the problem of their truth is settled in one fashion by the fact that the thing produced either does or does not attain the form and purpose the artisan intended to produce.[10] The human intellect is here the cause of their truth. The situation is different with natural things, for

they are what causes the truth of our judgements in one sense, insofar as they can produce a true or false impression of themselves in me.[1] That is, there are some things that I cannot understand, either because of my own incapacity, or because of the nature of the things themselves[2]. Of these, the truth about things in the future presents a particular problem, since for me, things in the future only exist now in their present causes, and this relationship may be one of necessity, impossibility, or contingency.[3]

Truth and Being are convertible terms[4] so that if it is true that something exists, the affirmation of it is true; if an affirmation is known to be true, then what it affirms exists.[5] That is why propositions about things in the present or past can be "determinately true", since what is affirmed is, or has been, completely determined by all its causes, and it is possible in principle for me to know this determinately. Since things in the future exist for me only potentially, in their causes, the truth about them can be known determinately only when they are necessarily and determinately contained in their causes, and this is known to be the case.

Cause, Principle and Element.

Causes are of very many kinds[6] but all of them can be reduced to four types, material, efficient, formal and final.[7] A Cause is something that (which) involves a relationship between things upon which something necessarily follows[8], an influence upon the being of the thing of which it is the cause[9], and it differs both from an element and a principle of a thing.

An element is one of the ultimate, intrinsic constituents into which something is divided, and of which it is immediately and primarily composed. For example, a letter is said to be an element of a sentence. It differs from a cause, since a cause

can be extrinsic to a thing. But not every element is a principle of a thing. The syllable BA is composed of the elements B and A, and they are a syllable by virtue of their form or arrangement, which is an intrinsic principle, which is neither A nor B, nor any other element of the same kind as A and B[1]. In artifacts, such as syllables, the figure or form or arrangement takes the place of form in natural things.[2]

Sometimes a principle and a cause are materially identical but they still differ formally, since principium implies some kind of order, and Causa implies an influence upon the being of a thing.[3] It will be seen that among causes, a similar identity and distinction can hold.

Material, Efficient and Final Cause

Material cause is basically that of which something is made, as a statue of bronze or a vial of silver[4], or a syllable of letters.[5] An efficient cause is that which is the principle of change or rest, as one who changes something is the cause of the thing in its altered condition, or as a father is the cause of his son, or even one giving advice is the cause of activicty or inactivity.[6] Final cause is that for the sake of which something is done. It includes not only the ultimate aim, but all the intermediate steps required to attain it.[7] For this reason, Final Cause is often said to be the cause of all other causes.[8]

Formal Cause

A formal cause is the essential nature of a thing, a species, or exemplar, and it is through it that we know what a thing is.[9] Form is that by which each single thing is constituted in its species.[10] As an intrinsic cause of a thing, it is called a species[11], and as extrinsic to a thing, an exemplar[11]. Form

as species does not properly have being in itself, but rather it is that by which other things have being. This is exemplified in the illustration of the syllable given above, for in artifacts, the order, or arrangement, or figure of the elements have the place of form in natural things: when someone makes a bronze sphere, he has not properly made the bronze, nor has he made 'sphericity', except insofar as he has put this particular thing into this particular shape. Forms do not actually exist in matter before it is so shaped, but only potentially, nor do they exist as an independent element in formed matter. They are not the causes of composites in the manner that the Platonists held, nor, as has been said, are they 'made' directly. In numerically different individuals, forms differ numerically, although they are members of the same species, hence specifically identical.[1]

Aquinas denies that forms subsist as species in some independent world. They are "educed" from suitable matter by an efficient cause or agent.[2] They are separable from matter only by the reason, since they can be understood without the sensible matter in which they are individuated.[3] Although artifacts are not Substances in the proper sense, forms in artifacts can be called substantial or accidental as in natural things, but in neither case are substantial or accidental forms "educed" separately. Only this particular composite is produced, which has this substantial, and these accidental forms.[4] A natural composite like <u>horse</u> has a single substantial form by which it is ahorse, and many accidental forms, according to which it is more or less white or large or tractable. But a substantial form does not admit of degrees: a thing is either wholly this or wholly that. There is no middle grade between substance and accident.[5]

Causes of different kinds are sometimes identical. In human generation, the final cause or goal of the act is the form humanity; the efficient cause is a man, acting by virtue

of his substantial form, humanity, and by his activity, he educes from suitable matter (semen and ovum) the human form. In this case, then, the final and formal cause are numerically identical, and both of them are specifically identical with the form of the efficient cause.[1] This also shows how causes are causes of each other, since the final cause or goal determines the nature of the activity of the efficient cause; the efficient cause is the cause of the final cause of goal, since it brings the final cause into existence as the formal cause of this suitable matter; the formal cause determines this matter to be what it is, and the suitability of matter sets a limit on the kind of causes of the formal type which can be educed from it.[2] But alone among the causes, material cause is never identical with the others, since it is potential, and the others are either actual being, act or perfection.[3]

FIRST CAUSE

From this sketch of the causes and their interrelations, it can be seen that for Aquinas the world has a quite determinate structure, in which there is no place for ambiguity or pure chance. The source of this determinism is quite different from that of the Platonists, as will be seen. All causes we know in the world are termed "second causes", in that they depend in being and operation on a first cause, since there cannot be an infinite regression in material[4], final[5], formal[6] or efficient causes[7] without evacuation of the nature of any cause.

Aquinas does not base the impossibility of an infinite regression in causes on a consideration of time (except insofar as this seems imaginatively necessary)[8] but on the kind of 'priority' and 'posteriority' involved in the notion of Change as a product of causality, since he holds that whatever changes is changed by another.[9]

Basing such a notion on time would suppose that it would be possible to prove the world had a beginning, and although Aquinas holds this as a datum of revelation as true, he still

does not believe that it can be rationally demonstrated. For demonstration, in his sense, begins with a definition of a thing. Definitions abstract from here and now, that is, from time and space, so no demonstrations can be given to show that a man or a stone or the heavens did not always exist. Nor can it be demonstrated from the side of a Creator, whom he holds acts efficiently in creation through his will, for God's will, he says, is investigable by human reason with respect to what it must of necessity will. Since He does not necessarily will anything but Himself, creation is not included. But he finds it reasonable on rational grounds to hold that the world did have a beginning in time, even though it is rationally undemonstrable, and cannot be the object of scientific knowledge as he understands scientific knowledge, that is, a conclusion from certain premisses.[1]

Creation

Aquinas illustrates the relation of the first cause to the world in terms of the human artisan to what he makes.[2] The artisan takes pre-existent matter upon which he will work, and this is the material cause. He has an idea or image in mind of what he intends to produce, and this is an exemplary cause, a type of formal cause. The final cause itself includes the purpose for which he intends the artifact. He is himself the efficient cause, and any tools he may use are instrumental causes, another type of efficient cause.

As it stands, the comparison is grossly anthropomorphic, and of course Aquinas is aware of that. But while he would say that this is inevitable, he also believes that it is to some extent corrigible.

It is inevitable because of the source and nature of man's knowledge. The only things we know that actually exist in

nature are singulars, individuals; the forms and essences we abstract from them do not actually exist in nature as abstracts, but only potentially, insofar as many individuals can instantiate them. In our experience, then, there is always a real distinction between essence and existence. The reality of this distinction is the source of contingency and imperfection of natural things.

Conceived as first cause, God is seen as infinitely perfect and necessary.[1] This necessity requires an identity of essence and existence. It is simply beyond our ability to understand what this identity of essence and existence is in a perfect being, but not beyond our ability to understand that such an identity must be true of the first cause. Our capacity to understand that such an identity must hold is the basis of our ability to correct our essentially negative knowledge of God, and our inability to understand what that identity is sets the limits to what knowledge we have.

Hence the distinction of the modes of being, understanding and signifying are especially important in this sort of discussion. For by affirming identity of essence and existence, one is affirming identity of exemplary, efficient and final cause in the first cause, and the distinctions we must make about the creator to discuss the act, such as Ideas, Intellection, Will, and Creation itself, are distinctions founded in our mode of understanding and talking, not in the mode of God's existence. Since material cause is never identical with the others, it must be distinct from God in creation. Apart from the first cause, nothing exists, and that is precisely what the material cause of creation is: nothing; though we must talk about it as though it were something. Aquinas defines creation as emanatio totius esse ex non ente quod est nihil.[2]

Aquinas sees all natural things which actually exist as a finite participation in, or imitation of, the simple but in-

finitely,imitable essence of God, which is the source of being, order and purpose in the world. Since it is finite, it is contingent. But nothing is so finite that it does not have its own necessity. That is, while there is no intrinsic or antecedent necessity why this thing should exist at all, or exist the way it does, it is necessary in its own way as a consequence of free creation. The nature of a first cause excludes any external determination whatever, since it must be perfect and self-sufficient. Another consequence of this perfection is the goodness of creation, and its purposeful ordering.

With this view of the world, Aquinas finds all things arranged intelligently, purposefully and in hierarchy, according to the degree with which they approach the self-sufficiency of the first cause. Lowest in the hierarchy is inanimate creation, then vegetative, then animal, or sensitive life, then man with rationality. Rational man can know not only the nature of other things and the determinations and purposes to which they are subject, but his own nature and purposes as well, and is free to determine himself within the limits of his nature. By knowledge he can locate himself accurately within nature as willed by the creator, and be deliberate choice, he can act upon the truth he has discovered. It is for these reasons that Aquinas equates the linguistic expression of a judgement, which can be true or false, with the specifically human use of language.

RIGHT AND WRONG USE OF LANGUAGE

Also on the basic of this view of the world, and the fundamental importance of manifesting thought through language, Aquinas discusses several ways in which language can be used correctly or incorrectly. There are different norms and criteria to be considered in each case. Basic to discussions of what is true or false is reality itself. In the Arts of Poetry, Rhetoric and Grammar, the rules established in each of them is the norm by which expressions can be judged right or wrong. In the

question of lying as opposed to telling the truth, the norm is what the speaker considers to be true, rather than truth of his statements. In the more general cases of communication among men, there are correct and incorrect ways of using technical terms, of translating from one language to another, of using ordinary words, and of arguing. The norm is to be considered in each case is different: technicians are the authority for the proper use of their terms; the idiom of both languages must be considered in translation; ordinary usage is the norm in ordinary communication, and the avoidance of ambiguity and equivocation is the norm in argumentation, whose ultimate basis must be fact, not mere words.

Lying and false statements

First it will be useful to distinguish between statements which may be false, but not lies, or statements that may be true, and still lies, according to Aquinas:

> "A moral act gets its species from two things, that is its object and its purpose. For the purpose is the object of the will which is the first motive force in moral acts. The faculty which is moved by the will has its own object, which is the proximate object of a voluntary act, and this is considered as a material element with reference to the voluntary purpose, which is the formal element. It was said above that the virtue of truth, and as a consequence, the opposed vices, consist in manifestation, or in the statement of a judgement (in enunciatione) and this is the act of the reason conferring a sign upon the thing for which it stands. For every representation consists in some sort of linking which properly pertains to the reason; and so, even though brute animals manifest something, they do not intend to manifest it, but they act by a kind of natural instinct, upon which manifestation follows.
>
> But for such a manifestation to be a moral act as such, it must be voluntary, and dependent upon the intention of the will. But the proper object of manifestation or judgement is something true or false. But the intention of a disordered will can regard two things; one of which is that something false be announced; the other is the proper effect of a false statement, that someone be deceived. Now if all three

of these are found together, (1) something false is stated (2) there is the will to say something false and (3)) there is an intention to deceive, then we have falsity materially, because something false is stated; and formally, because of the will to state something false; and effectively, because of the intention of impressing what is false upon someone. But the nature of a lie is derived from formal falsity, that is, from the fact that someone has the will to say something false. That is why a lie is named from the fact that it is contrary to one's mind (Unde et mendacium nominatur ex eo quod contra mentem dicitur.)

So if someone says something that is false, but believes it to be true, it is indeed false materially, but not formally, for this falsity is outside the intention of the speaker... If someone says something that is formally false, that is, with the will of saying something false, even if what he says is true, insofar as this sort of an act is voluntary and moral there is simple falsity (per se) and relative truth (per accidens), and this belongs to the species of lying..."[1]

For this kind of incorrect use of language, then, norms derived from the structure of the world, the rules of the arts or the best way of using language for communication, have no place. The whole question is settled according to the intention of the speaker.

How statements can be called true or false "in themselves" has already been treated: that is, things are always said to be true with respect to an intellect. Natural things are true in themselves because they are understood and willed by God in this way and not in another. They are truly defined by man when he understands them in the same fashion as God understands and wills them.

This might seem to suggest that "knowing things as God knows them" makes human knowledge divine. But Aquinas would distinguish between perfect or exhaustive knowledge and true knowledge, even comparing the knowledge of two men. In one way, it is impossible for one man to know things exactly in the same way as another man, because the two men are not identical, and therefore the two acts of knowledge are not identical. My eye does not know a stone according to the existence it has in my eye, but according

to the existence it has in itself outside the eye. But by my intellect, I can know not only the stone as it is in my knowledge, insofar as I understand that I am understanding, but also I know the thing in its own proper nature outside the intellect. It is in this sense that I can know a thing in the same way as another man, or in the same way as God, when I know it in its own proper nature, although it is impossible for me to know it as in the mind of another however, except insofar as he can explain his knowledge to me.[1]

Assuming that a speaker is not intending to deceive me, there are still other uses of language which can prevent successful communication. There are very many languages in the world and anyone can speak them, but unless the speaker himself understands what he is saying, and unless his auditors understand him, he is "speaking in the air", and that is why certain words have certain meanings.[2] These meanings must be presupposed,[3] and depending on the type of expression, there will be different sources from which we can derive what is meant.

We know the meanings of expressions in the same way that we know anything else, and a distinction of material and formal object is again useful: the material object is what we know in its entire perceived content, the formal object is that through which we know it. In Geometry, for instance, what is known materially are conclusions, and the way that they are known is through the steps of a proof, in the same way that we can see color materially, through the formal object of light, which is indispensible for the perception of color.[4] The formal objects by which we know meanings are <u>authority</u> for technical terms, the <u>idiom</u> of both languages for translation, and usage for ordinary language.

<u>Technical terms</u>

When anyone is being taught, he should at first take what the teacher has to say as worthy of belief, even though he does

not as yet fully grasp it.[1] For learning is a discursive process that has to start with something as known and proceed to what is as yet unknown; the teacher then places himself in the position he was when first discovering new knowledge, and so leads the pupil through the same steps.[2]

In this process it is necessary that we take the meaning of terms from the teacher, but it is to be noted that this presupposition of meanings is threefold: for there is a difference between what we need to know about the subject and predicate, and besides that, knowledge of the principles of proof are required.

Aquinas distinguishes a praecognitio quia and quid, that is a foreknowledge or presupposition that a thing exists, and a presupposition or foreknowledge of what a term means, without necessarily knowing that such a thing exists. For instance, I can take Priscian's definition of a syllable, "a vocal sound that can be written and uttered with a single accent on one breath"[3]. When I accept this definition, Aquinas would say,

> "The meaning of a name is to be taken from what speakers commonly intend to signify by the name... But if you consider this rightly, you will see that by this we know what is meant by a word, not that some thing is directly signified..."[4]

So what I have is a praecognitio quid, what the term means; as yet I do not know if there is such a thing. Now if I am trying to prove that stirps is a syllable, I have to know about stirps both what it is (quid) and that there is such a thing (quia). Besides that, for a valid proof, I would have to know the principles of proof, such as the principle of non-contradiction. With respect to principles, since they are not simple, but complex, Aquinas holds that I can only have knowledge quia, that they are, not knowledge quid, I cannot define them.[5]

The value of technical terms is their clarity, so that once a given usage has been established, it should be retained

in order to avoid confusion. So even when it is found that in their common use and etymology, they suggest the same meanings as assigned in a technical work, this should not be taken as a criterion of their meaning, but merely as confirmatory, as in the case of conscientia[1] and habitus[2].

The expression Spirtus Sanctus can, of itself, stand for all three Persons of the Trinity and for much more, but since it has been made a technical expression by the Church, it should be restricted to standing for the Third Person.[3] Departure from established use causes problems which are especially troublesome in religious questions, and in Aquinas' time people were concerned whether they should use the dative case after credo in reciting the Creed, or use in with the accusative. Aquinas says the creed should use neither, but just the accusative after credo in the line credo sanctam Ecclesiam catholicam, as recommended by Pope Leo.[4] Similarly, use of the expression figura, when discussing artifacts should be replaced by forma when talking about the formal principle, for although figure may take the place of form in artifacts, the word figura is also technically taken to stand for a limitation of quantity, while forma more explicitly refers to that which gives the specific being to an artifact.[5]

The common way of using "free will" is not defensible on philosophical grounds, so one should be aware of its technical definition.[6] On the other hand, ordinary use of facultas suggests a solution to the problem of free will as a habit.[7]

The word persona was formerly used to mean essence, but now technically means the supposit which 'has' an essence, so once such a decision has been reached, the former usage ought to stop to avoid confusion.[8] This expression persona is not the name of a logical notion (intentio) like 'genus' or 'species' or 'singular', but technically the name of a thing to which such an intention 'happens'.[9]

<u>Different languages</u>

Languages vary in the way they express the same things.[1] Mispronunciation in one language might totally destroy the meaning of a term, but not in another language through the same sort of mistake: so in Latin, a mispronunciation of the ending of a word might change its consignification, but not its principle signification; in Greek, the reverse is the case.[2]

In a work requested by Pope Urban IV (1261-1264), Aquinas comments on the task of a good translator:

> "Secondly, because there are many things which sound well in the Greek language which may not sound well in Latin, so that the Latins and Greeks profess the identical truth of the faith in different words. For among the Greeks it is correct and catholic to say that the Father, Son and Holy Spirit are three hypostases; but this does not sound right among the Latins, to say that they are three substances, even though <u>hypostasis</u> is the same for the Greeks as <u>substantia</u> for the Latins, according to the property of the word.[3] For among the Latins, <u>substantia</u> is more commonly taken for 'essence' and both we and the Greeks confess that there is only one essence in God. For this reason, just as the Greeks say that there are three hypostases, we say there are three Persons, ..as Augustine also shows in his work on the Trinity. And there is no doubt that this is also the case in many other things.
>
> Therefore it is part of the task of a good translator, that when he is translating those thing s which are part of the catholic faith, he should keep the meaning[4], but change the mode of expression according to the demands of the language into which he is translating.[5] For it is obvious that if those things which are said in a literary way in Latin are explained in a vulgar fashion, the explanation would be unfitting if they were taken word for word. This is much more the case when the things that are said in one language are translated into another word for word, so that it is not surprising if a certain amount of doubt remains."[6]

Within the same language, there can be no argument at all derived from equivocal names, since then there is nothing in common but

the names, and knowledge of things does not depend on vocal sounds, but on the definitions of what names stand for.[1] But when words are equivocal across language, the situation is slightly different. As has been seen, the Latin equivalent for the Greek <u>hypostasis</u> is equivocal, since Boethius shows that the Greeks use this for what the Latins call First Substance, but the Latins use it for First and Second Substance of essence[2]. But even though a word may be equivocal in a single language, it at least does not mean its own contradictory. But it is quite possible that what we call 'man' in one language could be called 'non-man' in a different language. This should present no problem, since it is of no moment at all whether things have the same names or not, but whether or not one has to do with a single thing, regardless of names.[3]

In a Latin word like <u>disciplina</u> it can be seen that different languages have different distinctions, for this is said to be derived from <u>discendo</u>, but as children who are learning are often flogged, <u>disciplina</u> is often taken for <u>scientia</u>. This is the case in the Posterior Analytics in Latin translation, for the Greek <u>epistemon</u>; sometimes it is also taken for 'correction', which in Greek is <u>paidia</u>, but the Latin has no special word for this.[4]

<u>Ordinary language</u>

Ordinary language is used correctly when we employ it the way other people do.[5] If it is found that any particular usage is subject to misunderstanding, it should be avoided. This can be seen in the example of ancient philosophers, who thought that when one thing was predicated of another, the two were being said to be one. On such a presupposition, <u>homo est albus</u> would be misleading, so they recommended the avoidance of <u>est</u>. But even this usage was found confusing, because of the incomplete sentence, and their successors advocated the practice

of expressions like homo albatur.[1]

There is a more normal arrangement of parts of speech that leads to an expected meaning from any sentence, but since the sentence, like all the parts of speech, are instruments of rational men[2], it is the intention of the speaker that is most important. In many constructions, it is possible for an expression to determine one or the other part, while the construction remains the same, as was seen in the treatment of fallacies.[3] Doubtless on the basis of frequency, obliques and adverbs are said to modify verbs rather than participles, and the main verb rather than a subordinate one included in a relative clause in apposition with the subject.[4]

Frequency is the explicit criterion for word choice, since while there are many words in a language which mean the same thing, there are always some which are used more commonly and clearly than the others,[5] although, on the other hand, there is no reason at all why things cannot be named equivocally, as long as usage permits.[6] Frequency leads us to expect that certain names apply to certain things[7], but neither this nor the proprietas vocabuli is decisive, since, from these criteria, one might expect that nemo should stand only for nullus homo, but from the way it is used, it is clear that it stands for any intellectual nature, not just men.[8]

From frequent use, one can discover what expressions mean, for we know what magnanimity means when we see all those who are called magnanimous, and have hit upon what they have in common. Such a meaning is always a common element, not a single thing, for no doctor would waste his time defining 'healthy' for one eye of a single man, but for men's eyes in general, since that is how he can help this man.[9]

Argumentation

It is a misuse of language to base any argument on words alone, since they cannot found an argument about anything except

the meaning of words. Now this might be the point of the argument, in which case it is legitimate; but in general, such arguments lead to no certain conclusion about things. There are two legitimate ways in which words alone provide a good starting point for argumentation.

First, if someone denies the validity of the first principles, such as "A thing cannot be and not be at the same time and under the same respect", the way to attack him is not to start arguing about some proposition, since that is begging the question, but ask the antagonist if he concedes that single words mean something. If he denies this, that is the end of all argumentation; if he admits it, there is an argument against him, since he has to admit that whatever it does mean, a word must mean something distinct from its own contradictory. Not that this is a conclusive argument, since the first principles are themselves primitive and indemonstrable, but it is confirmatory, since it shows that in order to deny it, the objector must destroy his own statement, for he cannot deny it without saying something and meaning some definite denial by it.[1]

Secondly, when there is question whether a given thing exists or not, the first step in the argument is to define what is meant by its name, for in such discussions as "Is there a void?" those who affirmed or denied it often had differing definitions of what they affirmed or denied, and the question "What is it?" precedes "Does it exist?"[2] In any science, it is always necessary to know what the scientist intends by his definitions, since words mean what men want them to mean, and no science demonstrates that this name means this thing.[3]

The cardinal principle for Aquinas is that which he quotes from St. Hilary: "The understanding of what is said is to be drawn from the reasons for saying it, for it is not things that are subject to words, but words that are subject to things."[4]

Language as a Social Tool

Although Aquinas' most common discussion of language use concerns the manifestation of judgements, he is equally insistent, though not as often, on the basic social importance of language. Rationality and society for him are intimately linked:

> "...(Aristotle) then proves from the peculiar activity of man, that he is a civic animal, more than the bee or any other gregarious animal. For we say that Nature does nothing without a purpose, since it always acts for a determined goal. Therefore, if Nature concedes to a given thing, something that is of its nature ordained to a given purpose, it follows that this goal is given the thing naturally. We see that although voice has been given to some other animals, only man among them has language. For even though some other animals pronounce human language, they do not 'speak' in the proper sense of the word, since they do not understand what they are pronouncing, but do so from a sort of practice.
>
> There is a difference between language and vocal sounds considered in themselves. The voice is a sign of pleasure or pain, consequently a sign of the other emotions, like pain and anger and fear, all of which are related to pleasure and pain. Therefore a voice has been given to those other animals, which, by nature, have attained to the point of being aware of their own pleasures and pains, and they signify these to each other through certain kinds of vocal sounds, the lion by roaring, and the dog by barking. In place of these, we have interjections.
>
> But human language signifies something hekpful or harmful, from which it follows that it signifies something just or unjust, since some are equal or unequal in things that are helpful or harmful... Language is therefore peculiar to man, who differs uniquely from other animals in being aware of good and evil and injustice and so on, which he can signify by language.
>
> Since language is given by Nature, and since language is ordered to the purpose of men communicating about what is helpful and harmful, just and unjust and the like, it follows, from the fact that Nature does nothing without a purpose, that men communicate about these things by nature. But it is this sort of communication which makes the home and the state. Therefore man is by nature a domestic and civic animal."[1]

"In all those concerns where a goal is intended, but where it is possible to proceed in one way or another, a leader is required... Men pursue their intended goals, in diverse ways, as the diversity of human studies shows. Man is naturally a social and political animal... Nature prepares the food needed by other animals, and their hairy covering and defence as well... But man has received none of these things from nature, but in place of them, he has reason.

Animals naturally know medicinal herbs, but man does not. He only has a very general knowledge of the things necessary for life by his nature, as it were through the general principles that hold, he reasons to the knowledge of singulars which are required for human life. But it is impossible for a single man to attain to all of them through his reason. And therefore it is required that man live among many others, so that one can be helped by the other, and that different men pursue the discovery of different things, the one studying medicine, another this, another that.

This is most evidently declared by the fact that it is peculiar to man to use language, through which one man can manifest his concepts entirely to another. The other animals indeed express their emotions to one another in a general way, as the dog shows his anger by barking, and other animals in differrent ways. But man is more communicative to another man than any other animal which is seen to be gregarious, such as the crane or ant or the bee..."

This social cooperation through language is the cornerstone of civil society, for men are said to be 'foreign' or 'barbarians' to each other when they do not share the same language. Men are meant by nature (<u>nati</u>) to communicate through language, and it is said that Bede translated the Liberal Arts into English so that the English would not be considered barbarians.[2] Ultimately, all forms of social cooperation or communication can be reduced to the political type, whether this concemns military activities, amusements, marriage or direct political activity, since all ultimately regard something of the common good of the community.[3] To make this communication possible, the person speaking must do so determinately in order to be understood, and that is why

certain words have certain meanings.[1] Animals other than man have comparatively few needs and desires, and therefore relatively few concepts, which can be communicated by a limited number of signs. But man has a multitude of needs and desires, out of which a great number of concepts arise. These cannot be communicated except through sensible signs, which are principally linguistic, and so the signs of human language are extremely varied.[2] As a consequence, the young in a well-governed society will have to be trained in many arts, including the art of communication:

> "There were four disciplines which almost all of the ancients had their youth learn in well-run societies; namely the science of letters, for instance, grammar or rational discipline in general, then sports, music and the art of drawing common to painters and sculptors. They considered these useful indeed for the activities of human life, but also as being very good in themselves, because they trained the mind."[3]

> "The science of letters is not only useful for extrinsic goods, and ought to be learned for that reason, but also because through it, lessons in many other disciplines are effective, for example, those which have to be learned from a teacher. Now this can only be done through significant speech, and this science we speak of not only teaches the meaning of significant speech and the ways of communicating things differently, but a proper way of putting it all together, as well."[4]

CHAPTER V

SUMMARY AND CRITIQUE

Summary

A: General characterization of Aquinas' view of language

B: Principles of Analysis he uses

C: Analysis of Language

1) elements
2) units
3) levels of units
4) resultant distinctions

D: Parallels in

1) The Categories
2) Logic
3) Psychology
4) Natural philosophy or science
5) Metaphysics

A: General Characterisation:

Language, in its elements, construction and use, is a system of arbitrary and conventional signs for the rational activity of man with respect to nature. It is abbitrary, since there is nothing in the structure of reality which determines either the quality or sequence of the phonetic elements of which language is composed. It is conventional, in that the function of any sign is determined by agreement among men.

While the phonetic nature and construction of language does not reveal anything about the composition and structure of reality, words and true sentences are signs of the true nature of things, to the extent that they stand for adequate concepts and true judgements. This is because the universe has a rational structure which can to some extent be discovered by man with certainty, and communicated with clarity.

Since it is conventional, the meaning of language changes when human convention respecting it changes. This is shown explicitly in the restriction or extension of usage within a

science, and implicitly by the restriction and extension revealed in ordinary use and understanding of words and sentences. Since it is arbitrary, no argument about the nature of things can be based on language alone.

Because it is the prime tool for orderly human communication, language shows considerable regularity. This is seen to some extent in the etymology of words, more clearly in the formation and derivation of similar words, and especially in the similar construction and interpretation of parallel words and sentences in parallel circumstances. In a literate society, regularity is legislated by grammarians. Their aim is to teach the 'congruous' or pleasing and consistent use of language. Since Grammar is an art, its rules have the force of any art. Violation of these rules may or may not impede communication, since ordinary usage makes allowance for considerable variation.

Aquinas' discussion of language can be termed hierarchic, intellectual and metaphysical. It is hierarchic in that he sets up levels of reality and language which are related as the less to the more perfect, both in terms of composition and function. It is intellectual in that he is primarily interested in rational rather than emotional aspects of language. It is metaphysical in that he aims to give an ultimate explanation in terms of form, potency and actuality, in other words, Being, rather than a physical description.

B: <u>Principles of Analysis</u>

1) What is last in analysis is first in constitution.

2) Parts of composites are called parts in terms of the unit they constitute immediately.

3) Parts which constitute parts of parts are mediate parts or elements.

4) Mediate parts are material, immediate parts formal constituents of a unit.

5) Matter is to form as form is to use or function. The function of language is to signify.

6) Material parts are those which do not immediately contribute to the significant function of a unit.

7) Formal parts are those which do immediately contribute to the significant function of a unit.

8) In natural things, form is an intrinsic principle, by virtue of which the thing is actually what it is and does what it does, and through which we know what it is.

9) In artifacts, the figure or arrangement or ordering of the constituents takes the place of form in natural things.

10) Language is an artifact.

11) The elements of language are sounds; the smallest significant unit the simple <u>dictio</u>.

12) Units of language signify concepts immediately, things mediately through concepts.

13) The three principal concepts language signifies are: understanding, judgement and ratiocination.

14) The linguistic units which signify these are: the <u>dictio</u>, (pars) the proposition and the syllogism.

15) Material composition does not impede formal unity. The formal unity of linguistic units is decided by their function.

C: <u>Analysis of Language</u>

1) <u>elements</u>: the ultimate elements of language are sounds. Elements as such are mediate parts. Only formal parts contribute to the function of language immediately. Sounds as such have no significance.

2) <u>Units</u>: A linguistic unit is a formal, immediate part of language. It either signifies immediately, or contributes immediately to the signification of its unit.

a) <u>Simple units</u>: the smallest significant unit of language is the simple <u>dictio</u>. A <u>dictio</u> is formally or functionally simple which it signifies a simple concept. A simple concept is one of something as a unit. A <u>dictio</u> can be materially compound and formally simple.

The next unit of language is an <u>oratio imperfecta</u>. This is composed of two <u>dictiones</u>, neither of which is a finite verb.

It signifies a composite concept. That is, of two things which are separate, without affirming one of the other. Its own simplicity is decided by its own function.

The next unit of language is the <u>oratio perfecta</u>, which is of several types. It consists minimally of a noun and a form of the verb. Its simplicity is decided by its own function. In the case of categoric propositions, this is to affirm one thing of one thing.

The largest unit of language which Aquinas discusses is the syllogism. Its formal simplicity is decided by its proper function, which is to prove one thing of another thing through the medium of a third thing.

b) <u>Composite Units</u>. Units are considered simple or composite materially or formally; that is, according to the number of material and formal parts; that is, on the basis of composition and function. A <u>dictio</u> like <u>equiferus</u> is materially composed; both its parts contribute immediately to the signification of the <u>dictio</u>; but they do not signify two things as separate. The <u>dictio</u> as such, then, can only be formally simple, since it signifies a simple concept. It may be compound, but if it is formally composite, it functions as an <u>oratio imperfecta</u>.

The <u>oratio imperfecta</u> is always composed materially. It is formally simple if its two parts signify two things related as form to matter. Otherwise it is composite. A relation of form to matter is found in accident to substances, species to genus; therefore in expression like noun-adjective. A relationof substance to substance, accident to accident, genus to genus etc. forms only accidental composites. So series of noun-noun, adjective-adjective not related as genus and species, substance and accident, form composite <u>orationes imperfectae</u>.

The <u>oratio perfecta</u> is always materially composed. It is formally composite if it affirms more than one thing of one thing, or one thing of more than one thing. It will be

formally simple despite material composition of the subject, if the subject is a formally simple oratio imperfecta, as in the case of definitions, whose parts are related as form to matter. The same will be true with propositions using the coupla est and a definition as predicate.

3) Levels of Units

A given unit, taken materially, can be considered at several levels of analysis. For instance, the dictio can be considered in isolation, as part of an oratio or as a constituent of the syllogistic order. In each level, it is formally distinct, since a different function is considered. At each level, only certain questions can be answered.

Of a dictio in isolation, all that can be said is that it is categorematic or syncategorematic. That is, it either generates the concept of a'thing' in the mind of an auditor, or the concept of a relation between things.

Of a dictio as part of an oratio, one can say that it is categorematic or syncategorematic. If it is syncategorematic, it signifies some relation of predicate to subject. If it is categorematic, it is either Subject, that about which something is said, or Predicate, that which is said about the Subject. This distinction of Nomen and Verbum is logical.

The logical Nomen includes (1) the grammarian's noun, adjective participle, pronoun and infinitive in their formal use, and (2) any part of speech whatever in material use. The logical Verbum is of two types: with or without the coupla est. Without est, only finite, indicative verbs can stand as predicate. With est, certain parts of speech can stand as predicate only when certain others stand as subjects, but Aquinas does not develop the very complicated restrictions which even a cursory inspection of the possibilities reveals.

A dictio on the third level, as a term in a syllogism, stands

for a definition, which is a potential proposition. In this it differs markedly from the dictio in isolation or as Subject in a proposition. In isolation, a dictio signifies either substantially or relationally. As Subject or Predicate, it signifies according to a number of other categories. As a term in a demonstrative syllogism, which is employed for proving something to be absolutely necessary, it could stand for a man's life work. So much so, that the particular form is of little consequence, because of the clarity required to reach this stage of knowledge.

In the same fashion, an oratio imperfecta like animal rationale can be considered in isolation, as the subject or predicate of a proposition, and as a term in a syllogism with similar consequences. The possibility of considering entire propositions in the same fashion is alluded to in the distinction of propositions de re and de dicto.

4) Resultant distinctions:

As a consequence of this sort of analysis, Aquinas distinguishes, on the basis of matter and form, the proprietas vocabuli and the proprietas significationis. The first indicates what the word, materially inspected, is capable of meaning, or likely to mean; the second indicates what it actually does mean. Thebasis of the first distinction is the general conventions of the language, the second is the actual intention of the speakers in actual use, choosing from among the potential meanings forms are capable of communicating.

He distinguishes as well the Modes of Signifying, Understanding and Existing. These are required because language is conventional, which allows for dissimilar linguistic structures expressing identical concepts (hence the distinction of modes of understanding and signifying); and because Reality, though intelligible in itself, is not always understood perfectly, nor is everything

that exists perfectly understandable to man (hence the distinction of modes of existence and understanding.) Only what is perfectly understood can be perfectly signified; only what is known to be determined by its four causes issaid to be perfectly understood. Anything without a cause, or whose causes are unknown, cannot be perfectly understood.

The distinction of modes of signification are used in logic, grammar and metaphysics. Priscian and Donatus are Aquinas' unquestioned grammatical authorities; Aristotle as developed by others and transmitted by Boethius his logical source. He holds that logic, grammar and metaphysics proper have different material and formal objects of study; insofar as they consider significant language, their formal objects differ. The grammarian considers congruity, the logician modes of predication, the philosopher, true and false statements; the grammatical criterion is human art, the logical, consistent logical form, and the metaphysical, the actual existence or inexistence of a thing.

But in setting up a problem in metaphysics, Aquinas takes the parts of speech defined by the grammarians on their own norms and discusses their typical meanings for Latin speakers. Grammar is thus propaedeutic, logic a methodic tool for metaphysics.

Involved in these discussions are the distinction of Principal signification, Mode of signification, and Consignification. Principal signification seems to belong to an individual expression, while mode of signification appears to be said of word types. Consignification is the meaning of the accidents. The mode of signification of the noun <u>cursus</u>, for instance, is substantial; the principal signification is "running as a substance". The consignification is number, gender, case. The principal signification of <u>curro</u> is "running as an action", the mode of signification is active, the consignification, present time, first person singular. So of the other parts of speech, expressed in the various categories.

Aquinas' development of these notions, though fairly consistent, is incomplete and sketchy. Unlike his usual practice, the terms

are not rigorously defined, merely employed, suggesting that they were self-evident to him and presumed so for others. He uses them in particular and well-defined problems where the expression of the problem by his adversaries must be elucidated, or to show how their expressions must be qualified or rejected as misleading.

Signification, consignification and interpretation (suppositio) are distinct, although interpretation concerns both. Interpretation can be considered either as a relation between things, or between terms, since it deals with the applicability of a term signifying one thing to another thing. Restriction limits the range of a term's reference, extension increases it and is thus a cancellation of restriction. These distinctions are important for evaluating propositions.

In circus albus and cignus natans, the swan is restricted to those which are white and male in the first example, and those which are now swimming in the second. But in cignus est albus and cignus natat, the predicate term can only restrict the consignification (male, present) and not the principal signification (white, swimming) since such propositions otherwise could not be false: they would reduce to saying cignus albus est albus and cignus natans natat.

With the addition of more terms in apposition to a basic term, the interpretation of the basic term is progressively specified, therefore restricted. Exceptions to this are modal expressions and those for mental activities.

D: Parallels

1) In the Categories:

The usual list of Categories given at the time of Aquinas was (1) Substance (2) Quantity (3) Quality (4) Relation (5) Place (6) Time (7) Posture or position (8) Circumstance,

State or Condition (9) Action (10) Passion (i.e., passivity, reception, being affected). Of these, the most important were the first four, especially Substance, with reference to which, as the prime instance, all the other Categories were called "Things". "Thing" is a transcendental term, used indiscriminately for all the categories.

Just as the notion of function or structure, based in mathematics, is the common descriptive framework today, the Categories were the common descriptive framework for the Medievals. They were therefore used analogously in different sciences, as unit, structure, function are today. For the locician, they were intentiones, notions, which were interrelated in a specific way. For the metaphysician, they were the description or definition of a thing, whose existence as defined or described was to be explained.

For the grammarian, they were the typical meanings of word-classes. Noun meant substance, verbs meant action and passion, adjectives meant quality, adverbs meant various relations, circumstances, places, times, and quantity, time, and relation could be consignified by the accidents of the parts of speech. Aquinas employs them in the grammatical, logical and metaphysical senses, in both his discussions of things, and in his discussion of language.

2) In Logic

Since Aquinas, in discussing language, is primarily interested in the truth and falsity of statements and definitions, he makes use of Logic as a tool. His use of nomen and verbum and the distinction of categorematic and syncategorematic terms is logical rather than grammatical. His definitions of signification, extension, restriction, interpretation and so on are based in logic, which was almost ex-

clusively a Logic of Predicates. While he was certainly aware of the usefulness and legitimacy of a purely formal logic, his interest was much more centered on a psychological and metaphysical commentary on logical propositions, oppositions and convertibility, etc.

3) In His Psychology

It is in his psychology, particularly in ideogenesis, that much of Aquinas' view of language is rooted. Language expresses knowledge, either directly or derivatively. Knowledge is conformity with reality. Man is conformed to things in two ways, through his senses and through his intellect. Both are true knowledge. But by sensation, the conformity is one of fact, common to men and animals. Intellection adds the perception of necessity. Necessity is the effect of a cause. Causes are of four kinds, material, efficient, formal and final. Knowledge that results in conformity with any of these is true knowledge, knowledge that results in the demonstrable awareness of all four is perfect.

Knowledge begins with perception by the senses of sensible objects. A common internal, sensible faculty collects and combines all sensations into an integrated bundle called an image or phantasm. Although 'image' suggests visual sensations, it is by no means confined to it. Such images are subject to rational control: they can be recalled, banished, distorted, altered or recombined. This control, in an effort to understand the object of sensation, is reasoning.

Essential to the process of understanding is abstraction, since it is not singularity, but materiality which impedes intelligibility. Hence the process of intellectual abstration is basically the removal of the limitations of matter: e.g. extension, temporality, mutability. The result of this operation is an abstract form, capable of being instant-

iated in many individuals, though not necessarily found in more than one. This is the notion of universality.

Characteristic of the act of understanding is the perception of necessity. Aquinas holds that this is not just something that happens to a man, but that in most cases it is attained with effort, for it is the perception that certain features of our experiences are irrelevant to the understanding of some thing or situation. This generally requires lengthy induction and reasoning, and above all, the preparation of a suitable phantasm. When a thing or situation is finally understood, a concept is formed, and one thereby expresses his own knowledge to himself. This is called the verbum cordis.

The verbum cordis or 'interior word', is either a concept or a judgement. In order to express it, one considers the phonetic image, held in sense memory, to find the sounds which are capable of communicating it. The perception that these sounds will, as a matter of fact, express this conception intelligibly, is itself an act of understanding and is subject to the same conditions.

Since it is basic to Aquinas' view of language, that language expresses concepts immediately, and things through the mediation of concepts, it is evident how closely linked with his psychology his explanation of language is. This is especially notable in the three-fold distinction of the dictio in isolation, in a proposition, and as a term in the syllogism, which parallels, to some extent, the development of the verbum cordis through the stages of reasoning.

4) Natural Philosophy or Science

The descriptive framework for what we would name "Physics", as well as for the other natural sciences, such as Astronomy, Geology, Chemistry, Biology, Optics, Mechanics, etc. were the Categories. Within these sciences, the objects under investigation were divided into substances and their properties, since

whatever existed, had to be either a substance, or inhere in a substance as a property of it. The first step was to form a definition of the object of a science, which included in some fashion, every possible property and consequence of its properties, so that particular deductions could be made about them. Physical things were either elements or mixtures of elements. The properties and activities of things resulted from the mixed properties of the elements. The four elements were Air, Water, Earth and Fire.

This view of Science had two consequences, among others, which were important to Aquinas' view of language. The first was that the contemporary satisfaction with the notion of Air as an unanalyzable element did not encourage a closer inspection of exactly what letters stood for, either in acoustic or articulatory terms. This accounts largely for the uncertainty among the medievals in analyzing declinable words into their stems and affixes. The second consequence was that Science, like Logic and Metaphysics, dealt almost exclusively with Subject and Predicate, with affirmations or denials of properties of a substance.

Although a satisfactory phonetics would have facilitated the study of language, the second consequence is more far-reaching than the first. For contemporary Science, Philosophy and Logic, dealing in terms of Subjects and Predicates, gave a prestige to this form of sentence that inhibited the investigation of other sentence types, obscured the unsatisfactory use of the logicians' definition of _Nomen_ and _Verbum_ for other than logical purposes, and obscured as well the need for separate technical terms for the different levels of investigation.

5) _Metaphysics_

Aquinas conceives Metaphysics as the ultimate explanatory science. Explanation requires the statement of a problem. The

statement of a problem requires the description of the elements of the problem. All sciences have their own descriptive techniques and criteria, and these can be expressed in language. Language and its categories are the basic descriptive frame.

Language has two sorts of signs, categorematic and syncategorematic. The first stand for 'things', the second for relations between 'things'. 'Thing' is a transcendental term, applied indifferently to all the Categories, but all the Categories are 'things' with respect to Substance. Substance is that which is not an accident in a subject, consequently, autonomous in being and activity within its own sphere.

Substance itself is an analogous term. The prime analogate is First Substance, that which is absolutely not in any subject; all others are secon substances, so-called by their relation or proportion to First Substance. Applied analogously to other substances, the notions involved in substantiality such as self-sufficiency, self-determination, spontaneous activity, initiative, etc., are said differently, but proportionately, of God, angels, men, animals, plants, stones.

For Aquinas, typical actual substances are men, animals, plants, stones; typical relations are spatial, temporal, quantitative, casual; typical accidents are size, shape, location, color, temperature, weight, etc. Within a given universe of discourse, anything can be considered substantially that is seen to function independently, and not as an accidental property of something else within that sphere. Even relation, the "ens debilissimum" can be considered substantial, compared to another relation, though accidental compared to most things.

As a descriptive or logical category, Substance and all the other Categories are neither true nor false, but just notions. The fact that a thing can be conceived as a substance is irrelevant to how the thing actually exists, or whether

it exists at all. The affirmation or denial that a thing exists as conveived is true or false. The truth of judgements depends on fact, the truth or existence of a thing. Truth, being and unity are convertible terms for Aquinas; they are not categories, not properties of concepts as such, therefore not strictly predicates, and all are analogous terms.

Aquinas defines scientific knowledge as knowledge through causes, knowledge of conclusions as caused by certain premisses. This is demonstratio propter quid, which is possible only when truth, unity and being are caused. God is conveived as uncaused, as subsistent being, truth and unity and is therefore not an object of demonstrative knowledge, demonstratio propter quid, but only as the factual cause of the truth, being and unity of everything else, attained through a domonstratio quia.

Aquinas' own view of progress in philosophy up to his own day can be summarized by saying that he thought Plato had advanced over his predecessors but had certain weakness which Aristotle corrected. Inspired by certain notions of Christian theology, Aquinas believed he could supply insufficiences in Aristotle's own position.

The most important features in this process can be seen in these views of Aquinas: Plato advanced over his predecessors, who had dealt largely with material and efficient causes, by a more thorough investigation of formal cause. But because he dealt with forms as essences, logical concepts, he was unable to account for anything but necessary facts deducible from essences through the technique of Division: some words were sociable with others or were not due to the sociability or repugnance of the subsistent Ideas they stood for.

Aristotle improved on Plato by a more balanced account of the four causes, material, efficient, formal and final,

was able to handle necessary as well as contingent facts. But his weakness was in the explanation of the origin and nature of things, which gives Form priority over Being. The God of Aristotle is First Mover; he moves the world only as its final, not its efficient cause and knows only himself, not the world. He is the cause of the forms of things, since forms are that by which beings are and act, and they act for a purpose, which is God. Implicit in this is an intrinsic necessity in the forms of purposeful things. While this improves on Plato, the formalism or essentialism which involves intrinsic necessity in things is unacceptable to Aquinas' insistence on the priority of Being.

For Plato's subsistent Ideas, Aquinas substitutes exemplary ideas in the divine intellect of everything that can be known in every possible way it can be known. Where Plato's Ideas seem to be the immediate cause of the essence and existence of things, the exemplary ideas are mediate: what exists is those things freely chosen by the divine will in the light of this knowledge. God Himself is _ipsum esse subsistens_. Since He is existence, His essence and existence are identical. Created beings are _ens participatum_ in which essence and existence are distinct.

For Aristotle's isolated, self-contemplating Final Cause of the world, Aquinas substitutes the omnipresent Efficient Cause, the Creator; Thereby, the fact of existence is given priority over forms or concepts or essences. Since Intellect and Will, Essence and Existence are all identical in the Creator (distinguished only in our mode of thinking and talking) and since He is infinitely perfect, several consequences follow: the world is radically and completely contingent, since nothing can determine God's will but God; although there is no intrinsic necessity in things, there is a consequent or extrinsic necessity, which is due to God's intelligent purpose in creating. These two results can be

seen in Aquinas' explanation of knowledge, and therefore in his view of language.

In Knowledge: as the essence and existence of contingent things are distinct, there are forms and facts to discover. Forms are abstracted or conceived, facts are affirmed or denied. If things were not contingent, only deduction from first principles would be required after a relatively few number of experiences. If they were not rationally organized, there would be no relations among them to discover. Hence the essential vs. existential distinction of concepts and judgements. For even though our concepts can be the objects of thought, nothing can be deduced in such a process except something about our thought. What is more important about them is that they are the means and instruments of knowledge, so that we apprehend the universal in the singular and the singular by the universal. This is because knowledge is the activity of a man who has intellect and sense, not the activity of separate things, nor mere passivity of separate things.

Since it is an activity, each of whose steps provokes further steps, human ignorance, human knowledge and human progress in knowledge are the result. If it were a passivity, it would perhaps make sense to speak of concepts as true or false, and consideration of concepts forced upon us, the real nature of rational activity.

In Language: the use of language is to signify concepts and judgements immediately, things and facts mediately. Hence the distinction of categorematic and syncategorematic terms, Modes of Signification, Understanding and Being, all of which are meant to point out the difference between concepts and judgements. The distinction of Signification and Supposition or interpretation is linked to the difference between initial conceptualization and subsequent experiences. The consideration of a dictio, especially categorematic, on

three levels (in isolation, as part of a judgement, as a term in a syllogism) reflects the same appreciation of progress in knowledge.

The acceptance of the grammarians' pronouncement on what the categories or parts of speech generally signify is linked with the same considerations: knowledge comes from previous knowledge; communication of subsequent knowledge must be in terms of past knowledge; the linguistic form of a new communication must be similar to the linguistic form of past communication. But by the very fact of its novelty, past knowledge, past communication, past linguistic forms cannot be the ultimate criteria of the understanding or truth of the linguistic communication of new knowledge. This could only be the case in Aquinas' view, if knowledge were the passive reception of the forms of intrinsically determined things for then, words would stand immediately for things, and their order would be dictated by things. As it is, concepts are the products of a progressive activity, and words are caused by concepts: of themselves, they have no more significance than men have agreed to give them. In a given community, this sort of meaning that 'words have in themselves', their modus significandi as well as their significatio and suppositio is a summary of facts about the use of words. As such, it is a material element in the use of language, and the use itself is the formal element. That is, regardless of a word's etymology or similarity to other words (proprietas vocabuli) its present function is determined by its present use. Because matter in general limits the possible forms it can receive, the linguistic result may very well be a lack of communication, since similar things are understood similarly, and similar meanings should be signified similarly, but it does point out a need for distinguishing the modes of sig-

nifying, understanding and being.

Language and its categories are therefore seen to be intimately linked with Aquinas' metaphysics, not, as he saw it, as sources of proof, but rather as the material and descriptive source of what is to be understood and affirmed or denied. The question "What is it?" precedes the question "Does it exist?". The answer to the first question is largely provided by and in language, the answer to the second is a fact, the existence of the thing as described. This answer is then expressed in terms of form and act and potency.

Critique

A: General characteristics of Aquinas' view of language

B: Principles of Analysis he uses

C: Analysis of Language

1) Elements
2) Units
3) Levels of Units
4) Resultant distinctions

D: Parallels in

1) The Categories
2) Logic
3) Psychology
4) Natural philosophy or science
5) Metaphysics

The initial difficulty in criticizing Aquinas' view of language arises from the fact that he did not set out to develope a specific theory of language or grammatical analysis. It is only in the first two books of the De Interpretatione that he discusses the composition and function of linguistic units in detail and of set purpose, and that purpose was almost exclusively logical, with psychological and metaphysical comments. But because of the important place he assigned language in the communication of truth or falsity, the summary account given above is readily assembled from his works.

Since his aims were, so to speak, cosmic, it is difficult to refrain from writing a history of the world in discussing them. But in this criticism, an effort will be made where possible to compare the points he made about language with the explanations current in modern linguistic study (i.e., 20th century, empirical work), with some mention of his contemporaries and immediate successors.

It is just as uninformative to speak of medieval scholastic philosophy as though it were a closed and uniform set of

conclusions and presuppositions as it would be to lump all modern philosophers, or linguistSes, for that matter, together. There was then as today, a common formal logic, and a great deal of common terminology. But just as today, there was considerable disagreement about the status of the concepts and theories logic dealt with formally, and the common terminology then can be as deceptive as it is today.

A: General Characteristics

Aquinas' view that language is primarily an expression of thought and that all other uses derive from this basic funtion was inherited from the Greeks, shared by his contemporaries and immediate successors, and by many people today. Modern linguistics (or rather, linguists) either deny this, or consider it irrelevant to the most effective method of studying language. I would agree with the latter view, with certain reservations.

Despite this agreement, Aquinas differs from his contemporaries because of their divergent opinions on (1) what there is to know (2) how it is known, and (3) the status of what knowledge is possible to us. He set himself to oppose medieval Platonism, and the deterministic interpretation of Aristotle deriving from Averroes.

Although mutually antagonistic, what these two contemporary philosophies had in common were (1) the primacy given to forms in reality (2) the consequent primacy given to concepts in judgement (3) the consequent passivity of human intellectual abstraction, and (4) relative unimportance of sensation and imagination. To this, Aquinas opposed several distinctions: (1) forms are basic in reality for the intelligibility, rather than the actuality of things, (2) concepts are basic in intellection rather than judgements, (3) sense knowledge and imagination are cardinal factors in both understanding and judgement, (4) intellectual abstraction is an activity, not a passivity, (5) while concepts can be the objects of knowledge, their most important function is to be

media or instruments of knowledge, (6) Being, of facts, is of prime importance to judgements, (7) concepts are neither true nor false in themselves, but are shown to be adequate or inadequate by the facts discovered in true judgements.

All of this had a direct bearing on the concept of language found in Aquinas and his contemporaries, and on the understanding of grammar, among those who discussed it explicitly. On Platonic suppositions, there must be an isomorphism between reality and concepts when one pays proper attention, because knowledge is initially a passive reception; on Averroistic principles, this isomorphism can be attained after sufficient experience, because the universe is determined, and is deducible from first principles. In both views, words are labels for thought, and the proper use of language is the proper use of the labels.

This can be illustrated by comparing Aquinas' statements with those quoted by Thurot[1] from 13th century grammarians: (1) grammar was invented by philosophers; (2) grammar is one and the same in all languages substantially, differs only accidentally (3) so one who knows grammar in one language, knows it in all.

The first statement would be impossible for Aquinas to make. He considers grammar an art, the right way of doing something; it is scientific in the same sense as all the practical arts, in that once the principles are granted, there is a logical procedure to be followed in deducing practice from the principles. The philosopher, for him, is a scientis concerned with speculative knowledge, of things that exist and cannot exist other than the manner in which they are conceived.[2]

The second and third statements are questions of fact. On Platonic principles, this can be decided by logical analysis of concepts, since they are true or false. On Averroistic principles, it can be decided after sufficient experience of what grammar is, by analyzing the form or concept of grammar.[3] For

Aquinas, a question of fact is decided by the existence or inexistence of things, not on the analysis of concepts, which are neither true nor false, nor merely by what seems likely to someone. To demonstrate something about a subject, that is, to prove that something is true of it with certainty, we need to know both the definition of the subject and the fact that it exists; with reference to the predicate, or what we are trying to prove about the subject, all we need know initially is its definition, since the fact that it does pertain to the subject as defined is what is to be proven.[1] Granted that a given description actually is the true grammar of Language A, it can only be proven that the same grammar applies to all languages as defined by confronting it with each other language, and finding that it actually does apply as defined.

Although this is Aquinas' implicit position on such questions, his explicit statements about other languages are uncommon[2] and concern differences of vocabulary, principally between Latin and Greek. Such a difference would be considered 'accidental'. Only his statement that where one language might call "non-man" what we call "man"[3] seems to come closer to the notion that one language might systematically have different ways of signifying things than Latin. But even this is insufficient to show that he had considered a radically different grammar possible in another language, since, being a contradictory, such expressions would readily fall under the logical rules for conversion and equivalence. A true appreciation of different languages having different grammars would have been shown if he had considered non-systematic differences between them. On the other hand, he does have more explicit statements about the Modes of Signification in comparison to the modes of understanding and existing, and from these, his positive position can be drawn, and compared to the Modistae, whose grammatical work is generally associated with medieval linguistic theory.

Aquinas and the Modistae

Aquinas and the speculative grammarians who came after him had the terminology of Modi essendi, intelligendi and significandi in common. At first sight, this is no guarantee that they had anything more than that in common. This would have to be shown by a careful examination of all the treatises de modis significandi. But there is one well-known work, the Grammatica Speculativa of Thomas of Erfurt[1], which until recently was accepted as an authentic work of Duns Scotus. It seems safe to assume that the views of Aquinas and those in this work will vary, as Scotus[2] and Aquinas vary. The following are some of Scotus' more pertinent doctrines:

(1) Although not all the possible exemplary ideas in the divine intellect are actuated in creation, a scientific question is one that can be raised with regard to all possible worlds, i.e. with regard to all possible exemplary ideas that might have been actuated.

(2) He rejects the Thomistic and Aristotelian notions that the intellect grasps the intelligible in the singular sensible and apprehends the universal in the particular.

(3) His distinction of modi essendi is based in his famous, but obscure, distinctio formalis a parte rei.

(4) For him, intellectual abstraction is unconscious, being the impression of these formal aspects of things upon the intellect.

(5) Understanding consists in contemplating the contents thus impressed

(6) Reasoning is the comparison of different contents with the perception of what concepts are linked and which are not.

(7) Judgement about the actual world is effected by an intuition of the present and existing as existent and present

(8) Words have modes of meaning which can be correlated to the modes of understanding which are correlated to the modes of existing.

From the previous exposition of Aquinas' psychology and metaphysics, it is evident that his ideas and those of Scotus are not reconcilable. Scotus shares the preoccupation with concepts or forms that characterized the Platonists, and the deterministic Averroists. This is seen in his view that a scientific question is only one which could be raised for all possible worlds; Aquinas holds deductive demonstration is possible only from a known and certain fact; with respect to God's will, this can only regard those things God must necessarily will, and that is only God Himself; the exemplary ideas which are identical with God are not all willed in creation, and those that are, are freely willed, hence contingent. As a consequence, a scientific question for us can only concern what actually exists, and can be solved only insofar as we know it exists. What we know, since it is contingent, does not provide an immediate basis for deductive demonstration.

Aquinas certainly holds that there are modes of being, but does not believe that they are impressed unconsciously on the human intellect and need only be analyzed logically. They are attained with effort, and by degrees, and both through making mistakes as well as through revising verified, but inadequate formulations. For this reason, there cannot be an automatic parallel between modes of being and understanding, and since the modes of signification are based on past experience and knowledge, they will always be subject to the revision that new knowledge requires.

On Scotus' principles, all one would need do is to define the modes of signification carefully, get men of good will to agree on their proper use, and then through discussion, all possible problems could be solved by an analysis of the terms employed. As will have appeared from Aquinas' position, this is unthinkable; neither language nor thought is static for him, but both are dynamic, since both are instruments of discovering and manifesting the truth about a contingent, not a necessary or deterministic universe.

Aquinas' hierarchic, intellectual and metaphysical view of language is understandable in a theologian and philosopher of his period, since he was primarily interested in giving an ultimate account of the expression of positions that can be declared true or false. A chief methodological tool he employed was a logic of predicates. This had the unfortunate result, from the linguistic viewpoint, of concentrating attention on the meanings of single words, the subject and predicates under dispute. It resulted in the neglect of an equally careful study of the other sentence types, since they were considered as derivative from the propsotional form.

Even today, it is not uncommon to find accounts of sentences which seem to suggest that they are really propositions that have gotten confused[1]. This concentration on the propositional form obscures the quite autonomous syntactic relations that linguistic units, which may be used in propositions, have in other sentence forms. This in turn makes the whole pattern of similarities and dissimilarities, of exclusions and necessary accompaniment, of frequent or infrequent co-occurence of certain units under specifiable considitions which modern linguists can establish for languages of the most various structure.

It is not necessary, even for Aquinas, to hold that sentence forms other than the propositional or declarative are subordinate to or derived from this as from a basic type, in order to prove that a man is rational. It is perhaps a criticism more properly directed at those who continue to hold such a view in dealing with the ordinary use of language, since their views are presumably not held with the same purpose as Aquinas had.

Terminology

Granted that it is possible to excuse Aquinas for not having the same purposes in duscussing language that happen to interest people at a later period, there is one glaring fault in

his terminology that contravenes a fundamental principle he took pains to develope against his adversaries. It is the logical use of nomen and verbum that is confusing, and the fundamental principle involved is the necessity for a properly organized image for understanding to take place. An immediate corollary of this principle is that equivocal terminology should be avoided. Aquinas' use of nomen and verbum for both logical and grammatical units is equivocal.

Nomen and Verbum, following the ancient precedent deriving from Plato through Aristotle, are the first examples of logical Subject and Predicate. The objection to the use of the terms nomen and verbum here is not that it involved Aquinas or anyone else in serious logical difficulties, though that may be the case, but that these terms fail to call attention to two distinctions that Aquinas made, and obscure a third point which he did not seem to appreciate fully.

The two distinctions Aquinas did stress were (1) the difference between the logical and grammatical study of language and (2) the material and formal consideration of language units. The third distinction he did not fully exploit was the syntactic indications of a unit's function in a sentence.

Taking the first distinction, it will be recalled that for Aquinas, logic proper and grammar proper differ both in their material and formal objects[1]; in the logical study of language, the material object is the same as in grammar (Latin words and constructions in this case) but the formal object, the point of view and defining principles, differs. To keep these two studies separate, separate terminology should have been used.

The second distinction he made is between the formal and material consideration of a linguistic form, and through this, he was able to point out the difference between what a sequence of sounds might mean (matter is the potential aspect of things) and what it does mean in this particular use (form is the actualization of possibilities), and he uses this distinction to

keep syllables and dictiones separate, compound dictiones and the oratio imperfecta, the oratio imperfecta and the oratio perfecta, and, in the fallacy of composition, the oratio perfecta which is simple or composite. He is quite modern in this treatment, to the extent that actual meaning is decided upon by actual use, and not by the mere consideration of phonetic sequences; he is inferior to modern analyses in his insufficient consideration of the morphological composition of linguistic units, and the syntactic rules by which one construction can be distinguished from another. He goes beyond modern linguistic practice in attempting to assign a reason for the actual employment of one word or construction rather than another.

Turning now to the third point, the syntactic indication of a unit's function in a linguistic construction, it will be recalled that in discussing the Infinitive, Aquinas says that it may stand either as Subject of Predicate. Then he says that when it is used with the force of a noun (nomen), it can take the article, both in Latin and in Greek.[1] In his own writings, Aquinas uses the article ly with all the parts of speech when discussing them materially, i.e. as standing for themselves.

There are three quite different problems involved in this discussion of the nomen, its function as logical subject, its function as grammatical subject, and its morphological identification as a noun rather than a verb or other part of speech. Speaking of the nomen as logical subject, Aquinas says that it "includes" the grammatical noun, adjective, participle, pronoun and infinitive. When discussing the verbum as logical predicate, he first must subdistinguish those whose form coincides with the grammatical verb, and these are the finite indicatives, and then those predicates with the copula est, with which most of the other grammatical parts of speech can occur, although another distinction of formal and material use must be made.

Keeping all of these distinctions in mind requires a good deal of attention, and no assistance is given by the termin-

ology Aquinas uses. To one acquainted with his thought, it is not too difficult to follow the shift from the grammatical to the logical to the philosophic viewpoint, but this shift is not assisted by the language he uses, without the need of careful attention.

It may be said that Aquinas looks through, rather than at, language in use. This is consistent enough with his preoccupations, which do not include the study of language in and for itself. It is also understandable in the light of the resources at his disposal - the part-of-speech analysis of Donatus and Priscian, and unfamiliarity with languages other than the similar Latin and Greek. But in the light of modern knowledge of languages which differ radically, such a view would be fatal.

It is all the more regrettable, then, that either Aquinas himself, or his pupils, did not apply the principles which he had set out, in order to study language in and for itself. As such, he viewed it in the same terms as any physical product of human activity. As an artifact, the place of form in natural things was taken by the shape, or ordering, or arrangement of the parts, and these were directly related to its function. It would not have been necessary to support, or even consider Aquinas' doctrine of how language has meaning in order to follow his advice about how meanings are manifested, and how the manifestation could best be analyzed. The study of the shape, order and arrangement of the units of language largely without the consideration of any particular theory of how language has meaning is what has been developed by modern linguistic science. The practice of looking through, rather than at, language, is what modern linguistic study has shown to be premature at best, and misleading, at worst.

B: Principles of Analysis

The first four principles of analysis in the summary are applied by Aquinas to anything composite. Although they are not all explicitly stated for the establishment of linguistic units, he quite clearly has them in mind, especially in the De Interpretatione.

(1) "What is last in analysis is first in composition." Aquinas distinguishes several sorts of priority, logical, temporal and natural. Linguistic elements are considered logically and naturally, but not temporally, prior to the things they compose. The 'natural priority' is that of potency to act, which in Aquinas' metaphysics is a real, but metaphysical priority, insofar as he considers potency a real, metaphysical principle.

This question of the status of linguistic elements is agitated in modern linguistics, and recognized by some to be a properly metaphysical question[1]. The solutions arrived at reflect the linguists' view of the status of their science, but have little effect on their practice of it. Aquinas' view is in no doubt.

(2) "Parts of composites are called parts in terms of the units they constitute immediately". An alternative version of this is that parts are considered parts in terms of their perfect whole. This is the crucial point in any kind of analysis - identification of the whole which is to be analyzed. Aquinas, in discussing the partes orationis, considers them as "parts" in terms of a perfect sentence, and a perfect sentence is one that makes perfect sense. In practice, he restricts himself principally to analyzing categoric propositions. He was generally followed in this by his contemporaries and successors, and the practice is by no means abandoned in many school grammars. It is precisely to this that modern linguistics takes exception, both on the general grounds that it is false to equate

the notion of language with its manifestation in the propositional type of sentence, and on more particular grounds of methodic possibilities; by agreed criteria, any modern linguist can describe the utterances he hears or reads, and others can follow him in his description or point out where he has gone wrong according to the norms they have agreed upon. It is not always possible for him to decide whether an utterance makes perfect sense to speaker or listener, or whether speaker and listener would analyse an utterance into parts the same way.

(3) "Parts which constitute parts of parts are mediate parts or elements". (4) "Mediate parts are material, immediate parts are formal constituents of a unit." As Aquinas applies these principles to language, material and formal parts are so-called according to what they mean, and by their meaningful relation to one another as well as to the composite meaningful unit they constitute. Modern linguistics uses a method of analyzing into Immediate Constituents which is not based on the meaning of the parts directly, but rather on the more general norms of how it is possible to have distinctive meanings manifested, through contrast, opposition and possibilities of occurrence in a given position: this will be seen in the section on Analysis of language.

(5) "Matter is to form as form is to use or function; the funtion of language is to signify." (6) "Material parts are those which do not contribute immediately to the significand funtion of a unit." Modern linguistics would consider the basic notion of significance implied here - naming - open to all the objections mentioned so far. It concentrates on those antecedents and consequences of linguistic utterances which are directly accessible to everyone's observation. While Aquinas mentions most of the significant functions of language discussed by his successors and by modern linguists, he concentrates on the naming function. Other objections to this will be seen in the section on Resultant Distinctions.

(8) "In natural things, form is an intrinsic principle, by virtue of which a thing is actually what it is, and does what it does, through which we know what it is." (9) "In artifacts, the figure or arrangement or ordering of the constituents takes the place of form in natural things." The similarity of these principles and the insistence on a properly organized image for understanding is evident. In the analysis of Latin, Aquinas and his contemporaries required only a general outline of the figures, arrangements and orderings of the units of Latin, having practical mastery of the language through practice. Modern linguists would not challenge their understanding of what Latin means, but do challenge the image they offerred of how it means it, and point out not only misstatements in their description of units and their meanings, but assign the reasons for them.

(10) "Language is an artifact." Dealing as he did with technical language, Aquinas could exploit this truism to advantage. What he did not and could not properly appreciate is the extremely complex set of social, historic and phonetic influences at work in any language community which also deserve the title of "artisan" with respect to language. Modern linguistic science does not claim to have the full answer, but does claim to have pointed out many more factors which must be considered before even a tentative answer can be given.

(11) "The elements of language are sounds; the smallest significant unit is the simple _dictio_." Real advance in any science is made when it can be shown that what was previously considered a unit, is in fact composed. Subsequent work in language study showed how Latin words could be analyzed, and to this extent, Aquinas' acceptance of the _dictio_ as the smallest unit of language has been abandoned. Secondly, the insufficiency of equating significance with naming, which is the most pronounced, though not the sole, direction in his work, has been abandoned.

(12) "Units of language signify concepts immediately, things mediately through concepts." This notion is basic to Aquinas' understanding of the conventional and arbitrary nature of language and is the source of those regularities it displays. It founds as well his view that all other sentences are derivative from the propositional type. Although "concept" is not restricted for him to the analytic and judicative activity of man, he considers such activity specifically human and therefore it is the most discussed in his work dealing with language.

Modern linguistic sciences prescinds from the question as far as possible and does not base its explanatory and descriptive criteria directly on the findings of any other science. It is true that there is a strong tradition among American linguists which accepts the basic tenets of Behaviorism and follows Bloomfield[1] in rejecting the traditional notions reflected in Aquinas. Linguists prescind from the question "as far as possible" in the sense that meaning in some fashion is involved in the establishment of the most important units and notions of linguistic description, "phoneme", "morpheme", "word", "phonology", "grammar" and "grammatical".[2] The quarrels among the conflicting psychological theories, however, only have an indirect influence on the decisions taken by linguists in defining their basic units, who all agree that whatever definitions and criteria are proposed, they should be founded on features in the language under consideration which are directly observable to all, and not on positions which require justification by pyschologists or others. Hjelmslev[3] points out the need of <u>arbitrariness</u> and <u>appropriateness</u> in theories, and the same holds for the units linguists set up: they are arbitrary as the meter stick in Paris is arbitrary, and they are appropriate in the same fashion, that they are or are not successful or useful in showing explanatory parallels among various utterances. There is nothing sacred about

any of the units or nitions and when and if they can be shown to be inadequate, they are rejected or redefined. But being human, many linguists are not satisfied about the appropriateness of the most basic assumptions of other linguists: by their very generality, intelligently selected units and notions do give satisfaction in a great number of cases, fail in a few;[1] counter-suggestions may account for the exceptions not covered in the rival theories, but have their own weaknesses. Men are most likely to be satisfied with what they do best and are often unwilling to relearn what they have acquired with great difficulty. But this is a human problem about linguists, not a problem whose roots are inseparably bound up in the method all aim at.

(13) "The three principal concepts language signifies are: understanding, judgement and ratiocrination." (14) "The linguistic units which signify these are: the _pars orationis_, the proposition and the syllogism." Even the casual remarks Aquinas makes about the other funtions of language show that he did not think these the _only_ concepts men have or the _only_ things language signifies. The modern view of significance is much broader, and it might not be an unfair comparison to say that where Aquinas pays lip-service to the other functions of language and then concentrates on the rational, modern studies pay lip-service to the rational and then equate it with all the other types. Each procedure has its justification in terms of the purposes in studying language.

But it might be noted that in one of the few passages where Aquinas gives a metaphoric explanation of the dependence of linguistic activity on rational activity[2], it is possible to accept it as important, but difficult to establish it as a fact; on the other hand, by the formal techniques developed by modern linguistics, it might be possible to show that all other

sentence types are derivable from the propositional as a matter of fact, but its significance for other points of view would be assessed in the light of criteria beyond the purely internal, linguistic criteria.[1]

(15) "Material composition does not impede formal unity. The formal unity of linguistic units is decided by their funtion." As a general principle, this is common to Aquinas and modern linguistics. The difference is in the methods and criteria used to establish what is basic and what is additive in a unit or construction, and in the fact that while Aquinas would hold that differences in signs manifest, but do not constitute their meaning, modern linguists restrict themselves to describing the units and combinatory possibilities of units in a language without consideration of what, if anything, "causes" such arrangements. This procedure of exhaustive and accurate demonstration of what the facts of language are, before inquiring into an explanation of the facts, constitutes the power of the modern approach.

Employing the terminology of matter-form and the relationships he saw holding between them, Aquinas could have, but did not, arrived at a method of study comparable to the modern techniques. In its most general acceptance for him, matter is what is determinable, and form is what determines it. The matter of artifacts, including the material units of language, is already determined in some fashion and is therefore describable. Matter is also what is common to many things that differ formally, and is therefore more frequent. Besides this, the determined matter of artifacts is capable of receiving a limited number of definite forms or subsequent determinations: silk purses are still not made out of sows' ears.

Linguistically, it could have been shown that while any word in Latin can occur alone in some conceivable situation, there are words that occur alone much more frequently than others.

It would then be seen that the number and type of words which can occur alone as initiating and completing a communication are quite different from those which are given as satisfactory answers to a question. The right question will elicit every possible form in the Latin language.[1] Single words which initiate communication and are the entire utterance, are much more limited in number, more readily identifiable in type. In longer stretches, communications starting with these words can be examined, and the type, order and morphological relationships which as a matter of fact can follow in Latin accurately established, through a sufficient number of instances taken for a given author or style.

Aquinas and his comtemporaries confined themselves to the examination of individual, brief utterances, and with bits of such utterances abstracted from them. As a consequence of this, much time was devoted to the "consignification" of such grammatical accidents as gender, number and voice. Many of these can be seen to be largely automatic, hence non-functional, parts of words when longer stretches of language are examined. Aquinas appreciated this to some extent, but due to the medieval inability to analyze confidently below the level of the institutionalized word, his consideration of the material (automatic, non-functional) vs. the formal (non-automatic, funtional) parts of language suffered. Especially with respect to words, he deals mainly with those that are compound rather than simple in a way that can be much better dealt with by the concept of free and bound forms.[2]

The use of observable frequency in given positions and contexts is easier and more accessible to any analyst of language than the requirement that he judge about the meaningful relationship of parts in terms of matter and form, and assures more ready agreement among different analysts.

C: Analysis of Language

1) Elements

For Aquinas, the ultimate elements of language are sounds, meaningless in themselves as such, and therefore material parts of language. He distinguished sounds into the articulation of voice by the tongue, teeth, etc., sounds in the air, and sounds as heard by a listener, subject to distortion over distance and by perturbation of the air. He had no technique for going beyond these bare observations.

A technique for describing the articulation of sounds had been developed by the Indian contemporaries of Aristotle, but this work did not become known in the West until the end of the 18th century[1]. Then its evident importance and usefulness in the analysis of language encouraged western linguists to acquire the phonetic advances made in Europe as well. Modern linguists use symbols standing for articulations[2] and the effect that spoken language has on certain electrical and mechanical instruments[3] to represent recurrent segments which have been found useful for recording and analyzing speech.

Dealing with the written or printed letters of the current orthography long encouraged the view that the identical sound was represented by each occurrence of the same letter. Later advances which showed the inadequacy of this went through two main stages: (1) increasing familiarity with a great number of languages brought to the attention of linguists a corresponding number of different sounds, partially similar, partially different. Even within the same language, it was seen that apparently similar sounds were articulated differently and could be heard differently, according to their position and proximity to other sounds: (2) differences of seemingly same sounds were found to be systematic, both between languages, and within the same language. Within the same language, a distinction was then drawn

variations, and distinctive sound differences within the same language. It was then seen that a distinction had to be made between the positive, phonetic description and identification of these minimal distinctive sounds, called phonemes, and the establishment of the fact that, however described, they differed from all other phonemes which could occur in the same environment.[1] While this is not unlike the traditional matter-form point of view, it employs quite different criteria. The difference between the funtional and factual description bases the distinction between Phonetics and Phonology, or Phonetics and Phonemics.

This point of view would agree with Aquinas that there cannot be an analysis below the level of the letter, but with certain reservations: assuming that the letter stands for a phoneme, and not just a phonetic description without consideration of the entire funtional patterning of sounds in the language, all agree that it is analyzable into at least two distinctive features,[2] one of which is peculiar to this phoneme, the other common to a related but different phoneme, but no one would say that a single distinctive feature (e.g. bilabiality, nasality, voicelessness) is an independent functional unit in the language. The principles of analysis developed for phonology (contrast, opposition and complementary distribution) are applied to larger units than the phoneme as well.

2) Units

Since Aquinas considers that the function of language is to signify, only those parts are formal or functional which have signification, or which contribute immediately to the particular signification of the unit under investigation. Whether a particular phonetic sequence does have some significant function or not is decided as a matter of fact, in a particular use, as was seen in the discussion of sorex.[3]

This distinction of the formal vs. material consideration of language is of limited usefulness before language itself has been adequately described. The distinction is valid and can be applied to problems like that of biltris, a sequence of sounds which is not impossible in Latin, but does not as a matter of fact occur, and therefore has no meaning assigned it by convention.

It is less useful in the general distinction of the material and formal use of language. Aquinas discusses this in three types of instances, the pronunciation of sounds which are meaningful in a language, but by a person who is under excessive emotional stress, or by one who is drunk, or by a foreigner who happens accidentally to utter a complete sentence in a language he does not understand. In these cases, Aquinas says, one has to do with material, not formal, speech, since the speakers cannot intend to signify what the words might be capable of communicating.[1] Of course, there are problems here which are hardly soluble - ignorance, emotional stress and drunkenness all admit of degrees. What is more accessible is conformity or lack of it to accepted grammatical rules observed by the speakers of a language.

The difficulties become even more pronounced when the distrinction of material and formal simplicity or complexity is discussed. The way in which Aquinas would establish the formal simplicity of rex[2] as standing for a simple concept does not explicitate all the factors he doubtless considered involved. The function of the image in his view of understanding appears to be involved, and agreement about one or several acts of attending to the image as a whole, or to its parts successively, as well as the complex social, legal, political and other factors involved in attaining the concept, would have to be taken into account. Even assuming that a reasonable procedure can be established in terms of his psychological theory, it

is worth pointing out the difference between this sort of treatment and that used in modern linguistics. On Aquinas' principles, a different meaning communicated by the same material unit is a different function consequent upon a different form. In language as an artifact, this would be revealed by a difference in the shape, ordering or arrangement of linguistic units. Modern methods of analysis show what those differences are.

This can be showed by comparing Aquinas' explanation of how the ferus of equiferus and equus ferus differ, in terms of simple and composite concepts,[1] with the following: (1) The form equiferus has only one primary stress, equus ferus has two; (2) it is impossible to reverse the parts of equiferus to get ferusequi as an acceptable form, whereas equus ferus and ferus equus are acceptable variations; (3) many other expressions can be inserted between equus and ferus (iste, meus, valde etc.), but nothing can be inserted between equi- and -ferus; (4) in successive consturctions, ferus and equus vary together (equi feri, equo fero, equum ferum) whereas equi-remains unchanged in the parallel forms equiferi, equifero, equiferum; (5) while there is an extremely large number of words which could be substituted for equus or ferus to form acceptable combinations, the parts which can combine with equi- and-ferus (if there are any at all) are strictly limited; (6) this is because equi- and -ferus are bound forms, never occurring alone while equus and ferus are free forms, occurring without each other; (7) and this can be further explicitated by considering equus ferus as an "expansion" of equiferus, and equiferus as its "model"[2]

This comparison accents the difference in method and criteria employed in the traditional and modern analysis of language. It may be objected that Aquinas' prime purpose in his discussion of these two expressions is to establish their

<u>logical</u>, not their <u>grammatical</u> status, and this is quite true. But it is also true that the logic he uses is expressed in a formalization of certain sentence types in the Latin language, and the construction of these sentences is subject to grammatical restrictions which were not sufficiently investigated or explained in his day.

What Aquinas has to say about these forms can be accepted as accurate statements, by an intelligent speaker of Latin, about what these forms mean to him, what is generally understood by them, and how the logician ought to use them. But on his own principles, statements of this kind are much more informative and important, when made in the light of general principles. The general principles, against which he registers his statements, are those of his psychology and metaphysics. The general principles, against which modern linguistics registers its statements of fact about a language, are those derived from an examination of the complete structure of the language. Any part of Latin is best understood by comparing it with the other parts with which it contrasts, to which it is opposed, by seeing the other parts that can occur in a similar environment and which cannot, those which can substitute for it and which cannot, and those for which it can substitute, and those for which it cannot. These statements are verifiable or refuted by criteria available to all; the criteria Aquinas uses are not available with the same immediacy. While scientific linguistics restricts itself to what Aquinas would consider the material plane of language, its descriptive accuracy fulfills his demand for an accurate arrangement of the data to be explained much better than the description available to him. This will be seen again in the section on Resultant Distinctions.

Aquinas dinstinguishes two types of *oratio imperfecta* on the basis of their signification. *Animal risibile bipes*, if taken as a definition of a man, is formally simple though materially composite because it signifies a simple concept. *Homo albus musicus* is both materially and formally composite since it does not stand for a concept of something simple by natural necessity, since *albus* and *musicus* signify accidental properties.

Grammatical analysis alone is of little assistance in distinguishing these, since the adjectives pattern alike, whether they signify essential or accidental properties. The distinction will be accepted or rejected with the logical, psychological and metaphysical presupposits involved. Formal analysis in the modern sense would not consider this a grammatical problem, but one of lexical restriction: some words are found more frequently associated than others, and this can be established by observation, without concern for the logical or other status of what is signified. It will also be found that collocations like *homo albus musicus* can be indefinitely extended (*bonus*, *magnus*, *fortis*, etc. can be added), in which case, the stress pattern and possibilities of insertion, substitution, order, and so on will differ from the less frequent, shorter formulae of definitions.

3) Levels of units

Aquinas comes closest to the method of study that has proven so effective in modern linguistics in his treatment of units on three levels, in isolation, as part of a sentence, and as terms in a syllogism. For this requires an implicit comparison, and an appreciation of the number of things to which a unit can be compared at each level. From a linguistic point of view, however, Aquinas' method involves chiefly lexical substitution, possibilities of "expansion" in the technical sense referred to above, and is restricted to studying mainly nominal

phrases. Compound sentences and how their parts are related are little more than mentioned. There is no comparison of the propositional-type sentence, his main object of discussion, with the oher types. Only in the traditional square of opposition[1] for categoric and modal propositions are similar but contrasting sentence-types compared, and this on logical grounds alone.

What one misses principally in Aquinas' statements is lacking in those of his contemporaries as well, an explicitation of the syntactic relations of the words he discusses.[2] Priscian discussed the formation of the various cases of the noun, for instance, in terms of the final letter of the nominative, and what must be added to or subtracted from it to form the other cases. This obscures the morphology of the words he puts into the paradigms of noun declensions and verb conjugations. But even the identification of the various cases in terms of consignification should have called for some appreciation of the mutual dependence of noun and verbforms on each other in sentences.

On logical grounds, Aquinas makes the subject and predicate mutually defining: the subject is that of which something is said, the predicate, that said of the subject, and this can be explicitated in syntactic terms. The matter-form distinction between different constructions, too, could have brought to light the same syntactic relations and contrasts. Matter is what is common to two specifically different constructions. The <u>oratio imperfecta</u> and the <u>oratio perfecta</u> differ formally. What they have in common is a noun alone, or a noun phrase. What distinguishes them is the expressed predicate or verb.

Today, the type of <u>oratio imperfecta</u> Aquinas discusses most (e.g. "<u>mobile biped animal</u>") is called an endocentric construction, and the <u>oratio perfecta</u> (e.g. "<u>Peter runs</u>") exemplifies an exocentric construction.[3] The first type is the most common, the second, the less frequent in language. It is characteristic of the endocentric construction that

expression has the same function or syntactic relations to its environment (e.g. to the verb runs) as one of its constituents. The closest Aquinas comes to saying this is in holding that a term in a syllogism stands for a definition; thus man could stand for mobile biped animal. As has been noted, this is also described by saying that mobile biped animal is an expansion of its model man, insofar as both pattern in a similar fashion with respect to a similar environment, such as runs.

An exocentric construction has two constituents which belong to different functional classes, and the entire construction does not function in the same way as either of the constituents, although the relationship that holds between them is what defines the construction. Aquinas approaches this in saying that the endocentric mobile biped animal is only an oratio imperfecta, and that runs alone, as a dictio, signifies a simple concept. The minimum requirements for an oratio perfecta are a nomen and a "case" of the verb, and when either the verb alone, or any other part of speech alone signify a composite concept as required by an oratio perfecta, the missing part is "understood". He adds that the verb implies composition and therefore is more like a sentence, hence a kind of formal part, whereas the nomen does not, and is a kind of material part. The sentence-meaning itself is the formal principle that makes a sentence a sentence.[1]

In endocentric constructions like mobile biped animal, the expression to which the function of the entire construction is best compared is called the head or center. In this case, it is animal. It is also the material part (genus), while mobile and biped are formal parts (specific differences). The modern counterparts to the material element is Bloomfield's head or center and Wells' model; the formal part is now called a constituent of an expansion other than the center. Aquinas' distinction between mediate and immediate

constituents (material and formal parts) recognizes that the material part is the more frequent, since it is that part which is common to at least two differing expressions. He decides upon the formal part by the difference in meaning. This difference is manifested by the different relationship of the parts. It is therefore consequent upon and less accessible than, the difference in that relationship.

This is well illustrated by two uses of equus ferus. Taken in isolation as an endocentric construction, it is not unreasonable to distinguish material and formal parts, as has been seen. But Aquinas points out the difference between parts and principles. The formal principle (as opposed to the formal part) in an artificial composite, he says, is its shape, ordering or arrangement. The unit equus ferus in the sentence equus ferus currit is said to be a material part with respect to the formal part currit. While equus ferus may precede, follow or surround currit, the shape, ordering and arrangement of equus ferus to its verb is quite determinate in several other respects. Given equus ferus, currere, curritis, currimus etc. cannot form an acceptable arrangement of parts in Latin. Given currit, equi feri, equo fero, equum ferum, do not form acceptable arrangements either. It is clear implication in Aquinas' understanding of the material part of an artificial composite like this, that the matter has only a limited number of possible forms or determinations which it can receive. What these restrictions are in Latin can be readily determined by examing the acceptable arrangements which various noun and verb forms take. This does not require any direct appeal to the meaning, and avoids the necessity of deciding about material and formal parts.[1] It also has the advantage of directing the attention to the fact that words, especially in an inflected language like Latin, are the foci[2] of syntactic relations with other words.

4) Resultant Distinctions

Since Aquinas quite deliberately restricts his discussion of language to the propositional type of sentence, the distinctions he makes about meaning concern referential meaning principally. His remarks about the proprietas vocubuli show a vague appreciation of structural parallelism in the manifestation of meanings, but they are little developed.

The opposition of categorematic and syncategorematic terms for the propositional type of sentence is quite sound, since there are many words in Latin which cannot be said to have referential meaning, but only syntactic function. That is, by their presence in an expression, they demand or preclude the presence of other linguistic forms and may determine their shape.

In those utterances where referential meaning is not sensibly discussed, the distinction seems of little use. For instance, the extreme cases of greeting formulae and the polite, automatic expressions which casual or formal social intercourse demand cannot be dissected in terms of deliberate serious statements of truth and falsity. "Good morning" contains two forms Aquinas would call categorematic, yet in England, the "morning" part is not limited to hours before noon, and the "good" rarely has anything to do with the weather. In the Philippines, instead of "Good Morning", one says "Where are you going?" and the expected response is "Over there". Neither of these are propositional in form, but an expression like "This is a fine state of affairs!", which does have the same grammatical form, would scarcely ever be seriously taken as the first proposition in a syllogism, since "Well!", or any number of similar expressions can readily substitute for it.

Many other expressions such as questions, requests, commands, narrative, insofar as they are concerned with objects and events in the world, form a kind of twilight zone between

the propositions and conventional greetings. But it is misleading to discuss such sentences with some referential terms in such a fashion as to make the rules of logic the norm for their correct construction: in Aquinas' terms, the intentions of the speakers are very different; in modern terms, they differ both in context and structure.

Aquinas made the propositional form of sentence basic principally on psychological grounds, and assigns the study of other sentence types to such disciplines as poetry, rhetoric and grammar, each of which is autonomous. His contemporaries and many successors made the propositional form a basis of grammatical description and construction.[1] Had Aquinas set himself the task of developing a grammatical theory for itself, it is unlikely that he could have made much of an advance over his contemporaries in grammatical description, although the theoretical basis in his view of how the modes of signification, understanding and being differ, would not be the same as those attributed to Scotus.

Modern studies differ from the medieval in many ways, two of which are most striking: linguistic units are not defined semantically, but syntactically through an exhaustive description of the intralinguistic relations of unit to unit; while individually units are not immediately compared to features of the non-linguistic "context of situation."[2]

This represents a more powerful degree of abstraction than that taken by the medievals, putting categorematic and syncategorematic expressions on a par according to what they have in common, syntactic funtion. Exclamations and conventional greetings may have no referential meaning in common with propositions, but each can be assigned its typical syntactic character, and in the case of exclamations and greetings, little more can be done about stating their meaning than assigning their social context.

The interdependence of the notions of Signification, Principal signification, Consignification and Mode of Signification are not explicitated by Aquinas:

Consignification is used only to discuss different inflected noun and verb forms, not derivational forms, which are distinguished in terms of mode of signification, rather than consignification. The mode of signification for Aquinas presumably distinguishes those parts of speech which have a common referential meaning, such as the verb curro and the noun cursus. It is evident here that the difference of consignification (the 'meaning' of the accidents) is the semantic criterion for determining the mode of signification. Principal signification for each pars seems to be determined again by inpection of the consignification. Principal signification is generally the expression of some fact about an individual word, whereas mode of signification says the same thing about the class to which the word belongs.

In all of these, it would be better and clearer to discuss the respective syntactic relations first. The logical nomen and the grammatical noun are not co-terminous. As logical subjects, amavisse or amaturus cannot have the same syntactic relations as logical predicates. Amabiliter is derived from amabilis, but the inflected forms of amabilis have many syntactic relations not common to amabiliter. Especially in this last example of amabiliter, which Aquinas would term syncategorematic because it is an adverb, a need for further refinement is seen. Amabiliter does appear to have as much referential meaning as amabilis, but is an adverb because of its syntactic use parallel to valde, multo etc., and appeal to semantic criteria immediately obscures this. It makes little sense to speak of referential meaning consignified by the accidents, except in those limited clear cases where gender and sex coincide, or where the grammatical and actual number is the same.

The distinction of suppositio and significatio can be taken in more than one way. (1) The act of signification is the imposition of a vocal sound x to stand for a thing A; the action of interpreting (suppositio) involves the comparison of things B and C to thing A, and then the application of this same vocal sound x to stand for B and C because of their similarity to A. (2) As a question of quantification in logical syntax, suppositio concerns the relationship of subject and predicate in a proposition. But in formal logic, the signification of the particular terms used does not come into question, and this relationship suppositio involves can be expressed without using the names for the object for which the terms stand. It is only in a proposition, and not in isolation, that a terms has suppositio formalis or materialis. It can therefore be expressed as, "In the proposition 'some man is an animal', the term man stands for something for which the term animal stands."[1] (3) Since the Logic Aquinas uses is expressed in Latin, there are syntactic rules of that language involved, aside from the normative strictures of the logician: agreement in gender, number and case when the copula est is used, and questions of government if another finite verb is used. Aside from the questions of concord, there is a definite restriction on the type of part of speech which can appear as subject with the copula est, according to the predicate's form-class, and vice versa. None of these syntactic relations were explicitated by Aquinas. Only the use of the article with the infinitive as subject was noted.

Where the neglect of syntax grounds a valid criticism of Aquinas' work from the standpoint of modern studies, the problem involved in the first interpretation of suppositio vs. significatio shows a radical difference between his work and that of formal linguistics. An accurate account of the syntax

of any language is clearly the best way to establish what Aquinas and his contemporaries understood by the parts of speech. Yet syntax alone does not account for the semantics involved in interpretation. An accurate description of a language establishes as a matter of fact that this vocal sound x is applied to this thing A. It establishes as well a great many things about the phonetic, phonological, morphological and syntactic regularities that will hold in any conveivable use of the same sign. But it provides no norms for deciding how B and C must resemble A so that novel uses of x can be justified. Regardless of how this problem is solved, or even if it is declared a false problem, formal linguistic description remains quite neutral and is its own justification.

From Aquinas' point of view, then, such a description would doubtless be considered to merely postpone the problems he claimed to be solving, if it is to be the first step. That it should and must be the first step seems unquestionable. Just how and in what order the procedures involved in establishing a complete formal description should procede will be decided by the language under analysis, and the techniques found economic, complete and fruitful for similar languages.

Since the distinction of ampliatio and restrictio as Aquinas uses them is concerned with questions of suppositio, modern formal studies add little directly to solving the problems involved. Since interpretation, however, is always made in the light of signification, modern studies have a tremendous contribution to offer in making precise what Aquinas considered the material aspect of language, those differences in signs by which different significations are manifested.

Where Aquinas had some vague general notions about similar words having meaning in a similar fashion, modern studies point out that it is not the phonetic similarity or contrast alone that is important, but the possibility of contrasting

functionally in a given environment, in a manner parallel to that of other members of the same class. Aquinas assumes that sacrementum is to be taken in an active sense, because the similar form ornamentum has an active sense. This is really true because of the parallels and contrasts that hold between ornamento ornatur, ornamentum ornat, sacremento sacratur, sacramentum sacrat. Since there is a choice of forms, there is a choice among the meanings. In a homely simile, it might be said that while it is impossible to make a mistake in putting on your socks, you can be wrong in putting on your shoes: shoes are made for the left or right foot, socks are not.

Even in those cases where there is only one form to choose from, it is possible that a determinate function can be established for it, on the basis of other forms substitutable in its same environment: utor (use) is called deponent, passive in form and active in meaning, since amo is active and amor is passive. Aside from the questionability of assigning passive function merely to a verb on the strength of the -or inflections, consequor can be seen to be active because it can be used in almost all the contexts that obtineo (get) occurs in, with the opposing passive form obtineeur.

Again, since Aquinas' notions of signification and interpretation were established primarilly for propositional types of sentence, they cannot be applied without adjustment to other types of sentences. Insofar as utterances are set in their context of situation, there is a rough correspondence between this sort of clarification of 'meaning' and Aquinas' notion of suppositio for reiterated instances of A, not for neologisms about B and C. Aquinas assigns a kind of unity of meaning to each sentence as well, each with its own peculiar function according to the intention of the speakers. This is not directly investigable, but is roughly deducible from the context in many matters.

D: Parallels

1) In the Categories

The Categories developed by Aristotle and used by Aquinas are descriptive, the result of logical, not physical or metaphysical analysis. The Logic both employed principally was one of predicates, dealing with equivalent and opposed propositions. Applied to the analysis of anything composed, this results in a description in terms of mutually exclusive constituents or paired opposites.

In the analysis of language, this resulted in the categorematic-syncategorematic opposition, and the parts of speech. Not all of the parts of speech are mutually exclusive: the participle is said to share characteristics of noun and verb, the infinitive can be employed as subject or predicate, the adjective and adverb are seen both to be 'adjectival' in some sense. As a method of analysis, therefore, this clearly leads to inconclusive results compared to those of modern techniques.

As will be seen in the subsequent section on Natural Science, it was principally the introduction of mathematical methods in analysis and description that distinguishes modern and medieval science. The same is true of modern linguistic analysis. The notion of function in linguistics is analogous to that of mathematics, where a quantity x is said to be a function of a quantity y if a change in the value of y produces a corresponding change in the value of x. This change in value for a word in a language, for instance, can be determined in two ways: through the different reaction of those who hear it, and through the different syntactic relations which are consequent upon it when compared to other words constructed with it. The difference between the two forms of the perfect, 3rd person plural in Latin, fuerunt and fuere, are not functional on either test.

This notion of function justifies the type of definitions

employed in modern linguistics. The parts of speech for Latin were defined mainly on semantic grounds, the relation between the linguistic form and something outside language. Modern linguistics, like many mathematical disciplines, employs <u>implicit definitions:</u> units are defined through their relations to one another. Insofar as parts-of-speech or word-classes are discussed, it is in formal terms, although not all are of equal interest to all linguists. Form classes can be established either morphologically, syntactically or both, but the syntactic method seems best to take into account the solidary nature of language. Hence the interchangeability of <u>environment</u> and <u>focus.</u>

The descriptions and definitions given by Aquinas and modern linguists, being answers to quite different questions, cannot contradict each other. But it is easy to see which set of definitions can command the readiest assent, through its clarity, consistency and freedom from presuppositions. While this clarity is gained at the expense of avoiding Aquinas' problems, it is the best starting point for returning to them.

2) <u>In Logic</u>

Although Aquinas was not unacquainted with a propositional logic[1] he dealt principally with a logic of predicates using a formalization of Latin. Modern Symbolic Logis is much more powerful in its abstraction from natural language, and can exploit many of the possibilities which natural languages conceal, particularly in a logic of relations.

Modern linguistics does not consider itself subordinate to logic any more than Aquinas thought grammar was subordinate to the logic of his day. But this common attitude was not matched in Aquinas' time with a corresponding freedom of grammar from logic in actual fact and practice; today, a proper concern for the autonomous status of each science allows us to see the dangers, yet make use of the suggestive formulations of logic without the consequences in medieval grammar. These two logics and grammars seem to contrast principally in the following points:

Medieval Logic	Modern Logic
- principally concerned with predicates	- discusses predicates, propositional and relational logic
- hence with paired opposites	- more than paired opposites
- which are semantically defined	- syntax considered prior to semantics
- hence the _formal_ necessity of propositions being either true or false	- more than two formal possibilities
- a two-valued logic	- a multi-valued logic

Medieval Linguistics	Modern Linguistics
- takes the proposition as basic	- any utterance discussed in similar terms, propositions included
- the _partes orationis_ ideally paired opposites	- form-classes defined implicitly
- the _partes_ defined mainly on semantic criteria	- form-classes syntactically defined
- neglect of syntax	- contrast, opposition, complementary distribution, hence syntax, basic
- concentrates on written form	- spoken form basic, written derivative

3) In Psychology

Aquinas' psychology is what would be termed "Faculty Psychology" today, and this has been largely abandoned. The reasons for abandoning it are, in general: (1) it seems to split a man up into water-tight compartments, (2) it is impossible to investigate the data of consciousness empirically, (3) explanation in terms of 'images' has proven inconclusive and contradictory, and (4) the success and prestige of the Behavioristic approach.[1]

Aquinas, in distinguishing sensitive and intellectual faculties, does not think he is splitting a man up into separable parts, since he holds the soul is the single substantial form of the human composite, to which all activities are subordinate. His

general principle is that actiones sunt suppositorum, so that it is not properly the eye that sees nor the intellect that understands and judges, but rather, man sees, understands and judges. Since a man is not always seeing, nor understanding and judging, he is said to have the power (potentia) or faculty of doing so even when these faculties are not being exercised, and it is in this sense that the faculties are real. Since he does not necessarilly see, nor understand, nor judge simultaneously, these faculties are distinct.

The data of another person's consciousness are evidently not investigable in the same way as his bodily modifications,[1] nor did Aquinas think they were. But insofar as one's own conscious activity is concerned, Aquinas would find it a little odd to be told that only those things pervious to the senses can be a source of certainty, since he holds that while the senses are not able to reflect upon their own modifications, the intellect is. That is, a man cannot see his seeing, but he can understand both his seeing and his understanding, so that it is ultimately this intellectual activity which is the source of certainty for both sensory and intellectual activity.

The difficulties involved in an image-theory of understanding are considerable (especially since it is not at all clear that everyone makes use of them) and Aquinas saw some of them. His distinction of categorematic and syncategorematic terms was the first step, distinguishing those things which cannot, and those things which can be imagined. This is of cardinal importance for his theory of language, and satisfaction with his explanations will turn largely on the acceptance or rejection of some sort of mediating imagery or symbolism.

While modern linguistics, especially in America, received a good deal of impetus from Behaviorist psychology, and some of its terminology, such as "grammatical behavior", reflects this, it does not stand or fall with Behaviorism, while the theory of Thomas would suffer considerably with rejection of his psychology.

4) <u>In Natural Philosophy or Physics</u>

In a history of scientific method[1], A.C. Crombie quotes the popular notion that the new philosophy, the "Physico-mathematical Experimental Learning" of the early Royal Society sprang unheralded from the heads of Galileo, Harvey, Francis Bacon and Descartes, but concludes that:

> "Granting the great and fundamental differences between medieval and 17th century science, the equally striking and underlying similarities, apart from other evidence, indicate that a more accurate view of the 17th century science is to regard it as the second phase in an intellectual movement in the West, when the philosophers of the 13th century read and digested in Latin translation the great scientific authors of classical Greece and Islam."[2]

Aquinas and the medievals in general distinguished Physics or Natural Philosophy from Mathematics and Metaphysics in terms of three degrees of abstraction from the concrete objects of experience, subject to dimensions and change[3]. Crombie points out what question medieval physics was meant to answer: "Natural science was part of philosophy, the search for enduring truth behind the changes undergone by the world perceived through the senses...the answer was substance, as the identity persisting through change."[4] "Mathematics, being an abstraction from change, could provide no knowledge of the cause of observed events...in other words, it could never alone provide an adequate definition of the substance..."[5]

He concludes that <u>the</u> central metholological problem from the 12th to the 17th century was the extent to which mathematics could be applied to explaining the physical world.[6] In Aquinas' time, the theoretical side of astronomy was "concerned mainly with a debate as to the theoretical merits of physical vs. mathematical theories in accounting for the phenomena"[7] and that was why Aquinas drew the distinction[8] between a hypothesis which must be true and one which merely fits the facts, while another or several other hypotheses might fit them just as well:

> "For anything a system may be induced in a double fashion. One way is for proving some principle, as in the natural sciences where sufficient reason can be brought to show that the motions of the heavens are always of uniform velocity. In the other way, reasons can be adduced which do not sufficiently prove the principle, but which may show that the effects which follow agree with that principle, as in astronomy a system of eccentrics and epicycles is posited because this assumption enables the sensible phenomena of the celectial motions to be accounted for. But this is not a sufficient proof, because possibley another hypothesis might also be able to account for them"

Physical (in the medieval sense) or metaphysical hypotheses were of the first type, necessarilly true, mathematical of the second type, fitting the facts, but not the only explanation which would fit the facts.[1]

Crombie shows as well how deeply the conception of scientific method was involved with the other great problems of the 13th century, Universals and the determinism of Aristotle as advocated by the Latin Averroists: criticism of the neoplatonic notion of universals led to an appreciation of the material and more careful consideration of the particular[2]; defense of free creation, divine providence and individual responsibility against the Averroists led to the formulation of the purpose of natural science in the 13th century, as the mastery of nature useful to man, who could not be restricted within any particular system of scientific or philosophical thought, any more than God could be determined by something outside Himself.[3] During the 13th and 14th centuries, mathematics was accordingly applied to the whole of physical science, at least in principle, and the effect of this change "was not so much to destroy the distinction (between "physics" and mathematics) as to change the kind of question scientists asked, that is, one that could be answered by a mathematical theory within reach of experimental verification."[4]

Aquinas' treatment of language is in line with the "physical" procedure of natural philosophy and metaphysics, which

seeks for the identity which persists through varieties of linguistic expressions. Aquinas sees this identity in the conceptual categories which the different grammatical parts of speech most frequently signify in propositions. Each part appears more frequently in one function rather than another, as logical subject, logical predicate, determinant of subject or predicate, or determinant of the subject-predicate relationship. On this basis, each part of speech in a sentence must perform a specific function, and alternative solutions are not possible. As a consequence of this method, one finds the anomaly of one part of speech being "used for" or "having the force of" another.

Insofar as modern linguistics discusses "parts of speech" at all, it employs the 'mathematical' method. Any form and all its expansions belong to the same form-class if the model and expansion have the same syntactic relations to a given environment. Alternative analyses are possible on this basis, depending on the criteria used to establish the relevant features a unit must have, the size of the unit, and which unit is to be considered the focus with respect to another as environment.

Medieval physical theories were necessarilly true or false by reason of the syllogistic form in which they were stated. While they were quite aware that induction was the method by which an adequate definition is to be formed, they did not use the exhaustive inductive methods common to science today. A good reason for this was probably that since they held material things to be analyzable into four elements, whose properties were well-known, it did not require elaborate tests. Yet they drew a careful line between an essential and an accidental definition. An essential definition was such that the defining properties could not be omitted without falsification, nor added to without triviality. The physicist and metaphysician worked with essential definitions so that they had to take each side of a constradiction as mutually exclusive; the dialectician worked with provisory or accidental

definitions, and so could take both sides of a contradiction as probable. Both essential and accidental definitions, when used as terms in a syllogism, have identical formal relationships to the rest of the syllogism. Besides checking for formal accuracy, it is necessary to know the status of the terms and the validity of propositions composing the syllogism from extra-logical sources.

Crombie's history lists some important technoligical advances and the spread of experimentation in the 13th century, but more characteristic of the period is analysis and classification. A start was made at that time to apply mathematical methods to physical problems, but there was no indication at all that similar methods could be employed for the study of language.

5) <u>In Metaphysics</u>

For Aquinas, metaphysics is an explanatory science which assigns the ultimate causes for things being as they are, or for their being at all. "Being" is an analogous term, as are many of the important terms Aquinas considers, such as <u>substance</u>, <u>exist</u>, <u>thing</u>, <u>unity</u>, <u>cause</u>, <u>same</u>, etc. The study and explicitation of such terms is central to metaphysics, but it is not an analysis of such concepts in and for themselves that interests Aquinas, but rather the consideration of the facts expressed in judgements into which such concepts enter.

Modern science, along with most modern philosophy, has little use for analogous terms, but concentrates on those which can be univocally defined and empirically verified. Modern linguistics shares the same methodological ideals.

A superior analysis of language, and acquantance with very many different languages would have been of great assistance in many of the problems discussed, such as the notion of relations and problems involving Time. It seems dubious to me, however, that any such information could have altered Aquinas' fundamental views, since it is not on the basis of linguistic analysis that he arrived

at the notion that many of the basic terms of rational discourse such as "thing","unity", "same", "cause" etc. are irreducibly analogous. It was a consequence of studying facts considered true about the nature of quite ordinary things in our experience finding them individually and collectively contingent, yet rationally organized, then inquiring about the conditions necessary to make this state of affairs intelligible.

Since it is widely held that much of scholastic philosophy has been shown by modern philosophers and logicians to be nothing more than the unconscious projection into reality of the grammatical patterns of Latin or Greek, it will be interesting to compare Aquinas' procedure with that of other thinkers, in terms of "projection", that is, identification of description with explanation. Medieval descriptive procedures were based on sematic categories; these limited the relevant features of a problem and the answer obtained will show that. Modern science and many philosophers and logicians now employ quasi-mathematical, implicit, syntactic definitions of the elements of their problems, and the answers they get will equally show the limitations imposed by criteria considered alone relevant.

In the modistic grammar attributed to Scotus, and in his philosophy, one suspects immediately that nothing more than such "projection" is involved. Decisive refutation would ideally require irreformable knowledge of the "real" reality he described inaccurately, a knowledge of the origin of Greek and Latin grammatical categories, and the extent to which language colors our experience of reality and vice versa. No one, of course, claims such information, and in Scotus' case, it is not required: it is sufficient to show that on his presuppositions, God would have to be a Latin Grammarian, and then point out the many languages radically different from Latin. The same critique is not equally applicable to Aquinas, for whom the logico-grammatical categories of Latin described a problem, but did not explain facts.

A similar case of naive projection sounds equally plausible in a statement of Sir James Jeans, "...from the intrinsic evidence of his creation, the Great Architect of the universe now begins to appear as a pure mathematician."[1] Jeans is a mathematical phsycist; and it is only in terms of mathematics that he describes the elements of the physical world.

Instead of projecting the descriptive frame "out there" in the Platonic fashion, it is possible to consider other solutions as projecting it upon the only thing we can know with certainty according to some, our own subjective constructs. In the medieval name-based tradition, Ockham's nominalism can be seen in this way. He held that the world is not rationally organized in the fashion Aquinas describes, but simply as a matter of brute fact, consequent upon God's inscrutable will. Braithwaite[2] considers scientific theories and models as purely formal, deductive calculi, a "game for one player" which can be constructed in any fashion the player desires. With respect to these calculi, one can decide that they are valid or invalid according to their internal consistency in the application of the rules. It is also possible to discuss whether they are useful or not in predicting the conjunction of phenomena in the same systemic arrangement posited in the calculus. But it is pointless to do more than that.

Carnap[3] considers the sentences of metaphysics pseudo-sentences, concerned with pseudo-objects. A real sentence, as opposed to a pseudo-sentence is the kind he deals with, by establishing for defined symbols rules of formation and transformation. A real sentence, a proper object-sentence, is one that is concerned with empirically verifiable features of the objects of a science, so that in the domain of zoology, "the object-questions are concerned with the properties of animals...the logical questions with the sentences of zoology and the logical connections between them."[4] When attacking metaphysical statements like "the external world is real", Carnap insists he is not "talking about the (suppositious) facts, but about the (suppositious) sentences;"[5] and of course,

sentences are real or suppositious, in the formal or material mode of speech, depending on whether they satisfy the conditions the logician determines for establishing this. Since he sets up his axioms, postulates and rules quite arbitrarilly, the need for justification does not arise.[1] The definition of a real object as one that can be univocally defined in terms of some empirical test is as arbitrary as the rules of logical syntax, and not a consequence of any kind of logical analysis. Once the definition is accepted, it follows quite logically that anything not definable in this fashion is a pseudo-object.

Aquinas would agree with Braithwaite and Carnap that these deductive calculi, such as scientific theories, notions and models, are abstractions, subjective constructs, and can be of an arbitrary nature. As such, it is pointless to discuss anything but their internal consistency, and their relative usefulness in controlling and predicting natural events. He would agree with Braithwaite[2] that, as far as the registration of purely sensory data is concerned, the notion of causality reduces to nothing more than the constant conjunction of phenomena, and the notion of finality to the attainment of the same end-state under a variety of environmental circumstances.

They would part company when it comes to the interpretation of these facts. Braithwaite and Carnap are content to affirm that some calculi are useful and others are not, and since they are all equally arbitrary, nothing more can be said, even in the case of the successful theories. Aquinas thinks that it is important to ask why the facts discovered through the application of successful scientific hypotheses cohere in the same fashion as the theory, and to establish the conditions which would explain the obvious fact that they do. His answer is that man lives in a contingent, but rationally ordered universe, and since it is so ordered, there are regularities to be discovered, but since it is contingent, successive experiences and judgements about them

are required. While our concepts in themselves are subjectively manufactured abstractions which can be the objects of rigorous analysis, he considers that what is more important about them is that they are the media through which we actually come to know something true about the things to which they are applied. This confrontation of theory with fact and its consequent success or failure to fit the facts produces knowledge which is true, but necessarilly incomplete and reformable. It must be reformable, since whatever we know must be known according to the nature of the mind, as Aquinas conceives it, that is, abstractly, not concretely, containing every possible property and relation of the concrete object of knowledge. This is merely another way of saying that whatever we know, we know <u>through</u> something else, a concept, counting, measurement, its relations to other things and so on.

It appears to me that the kind of universe which Aquinas' metaphysics envisages is precisely the kind that requires investigation by empirical science: it is contingent, but rationally ordered. If it were not rationally ordered, there would be no laws to discover; if it were not contingent, all laws could be deduced from a few principles.

His readiness to employ semantic categories reflects his conviction that it is possible to know something worthwhile about things, name it, and make statements about things and their relations, for it is in the verification or falsification of these statements, not in our concepts of things that truth is to be sought. Through this procedure, he expected to advance from approximate to more complete knowledge. Modern methods of analysis and desscription, employing the quasi-mathematical, implicit and syntactic approach, show how this can be furthered much more securely and rapidly.

Summary of Critique

By viewing language principally as a manifestation of concepts, judgements and reasoning, Aquinas limits himself to single expressions and one sentence type in Latin and consequently did not appreciate the central importance of paradigmatic and syntactic relations and structural parallelism.

Although he distinguishes logic and grammar adequately, his terminology confuses them. By making the minimum form with referential meaning the basic unit of language, he fails to see those morphemes which have a legitimate place in language, even though they do not have referential meaning, and neglects to give the syncategorematic expressions the central place they deserved, even according to his own principles. He also gave little attention to the social setting of utterances.

By linking linguistic explanation to psychology, he employs criteria which are neither immediately accessible, nor empirically varifiable. Even the criteria he employs are not fully explicitated.

By concentrating on certain logical uses of a normative type, he misses the restrictions which the Latin language imposes on the combinatory possibilities of forms into propositions, independent of their logical status, and fails to that extent to establish a purely formal logic.

The distinctions he developed for discussing language implicitly recognize, but do not bring out, the differences between logical, grammatical and stylistic requirements, and the difference between propositional and other sentence-types.

Aquinas' view of language is connected in various degrees of dependence with his logic, his logic with his psychology, his psychology with his metaphysics. It suffers to the extent these are questioned. Modern linguistics is independent of any of these studies.

CHAPTER VI

AQUINAS' RELEVANCE TO MODERN LINGUISTICS

By 'modern linguistics' is here meant the scientific study of language:

> "Linguistic scientists are engaged in developing a sound body of scientific observations, facts, and systematic theory about language in general and about languages in particular. The body of scientific knowledge is properly referred to as Linguistics or Linguistic Science."[1]

Linguistic science aims both at an accurate description of particular languages and the establishment of a sound theory for language in general. This general linguistic theory is to be arrived at inductively through studying various languages, ideally all languages, in order to establish what is universally applicable to their description and explanation. Present general linguistic theory has not attained this ideal as yet, and probably never will, since the adequate investigation of every language is an all but impossible task. But from the experience gained so far, the most fruitful method of approaching that ideal has been outlined and met with considerable success.

Linguistics is empirical in the fashion of other empirical sciences, in that only those facts are considered relevant which are public and verifiable by sense-observation, either immediately through some sense organ, or mediately through instruments constructed to detect what is not immediately observable. In describing a particular language, it abstracts from those features which are peculiar to individual speakers, or not public in the manner just described. In establishing the general linguistic theory, it abstracts from those features which are peculiar to an individual language.

A general linguistic theory should ideally be simple and economical, with no redundant or unnecessary elements, and should set out the facts of language in the simplest manner con-

sistent with the requirements of precision and universality. It should be verifiable by observation and formulated in such a way that predictions can be made successfully about linguistic phenomena as yet unobserved. It should therefore be universally valid, exact, and have as wide a scope as possible.

As in other sciences, not to mention history and philosophy, theory or interpretation of facts and the relevance of facts are mutually conditioning. One starts with a provisional selection of facts and a provisional interpretation in the light of which that selection has been made. As the work of analysis progresses, the number and nature of relevant facts is refined, and the theory, according to which facts are relevant, is correspondingly altered.

There is no single system of linguistic analysis which is universally accepted, but substantial agreement among linguists justifies distinguishing several stages or levels of analysis. Important ones are Phonetics, Phonology, Morphology and Syntax.[1] Phonetics assigns the articulatory organs, places and movements involved in the production of speech sounds. Phonology groups together the sounds of a particular language whose phonetic differences are not functional, and establishes classes of sounds whose differences are functional. One type of phonological analysis, Phonemics[2], employs this method to set up an economic orthography for a language. Minimal sequences of sound which have meaning[3] are called morphemes, and the study of morphemes is the task of Morphology. Distinguishing for instance, free and bound morphemes, according to their ability to occur alone, Morphology sets up paradigms of derived and inflected forms. The difference between derived and inflected forms is seen formally in their syntactic function, i.e. what other kinds of forms they exclude, demand or tolerate under specifiable conditions. Syntax, the study of permissible arrangements of words[4], and morphology therefore are interlocked.

As a consequence of this formal approach to the description of languages, modern methods produce accounts of their structure which are mathematical in appearance and method, as is seen in the use of quasi-mathematical symbols and formulae. This is not accidental. Harris considers his syntactic analysis mathematical, and Hjelmslev aims at creating a 'linguistic algebra' through his theories.[1]

Since formal description simply abstracts from the kind of question Aquinas considered important about language, the findings of each will be, to a large extent, simply irrelevant, one to the other. It is only when the kind of questions are posed in modern linguistics similar to those he treated, that his work becomes relevant.

These questions would appear to include problems about the "meaning" of language and how it is best to be discovered and described; the status of the units linguistic analysis employs; justification of the autonomy of linguistic analysis, and possibly the psychological construct which will prove most useful as a medium for instruction in foreign languages.

The best developed part of modern linguistic theory is phonology. Here the linguist has relatively few elements and relationships to work with and comes more quickly to an adequate description and explanation of the relationships involved. Less successful is the study of grammar, insofar as this is concerned with syntax. Less successful still, is the development of a scientific seamantics. One of the prime reasons for the weakness of the last two levels of analysis is not merely the fantastic complexity of the data, but a certain amount of hesitation about what precise role "meaning" is to be assigned in establishing satisfactory descriptive criteria, and this derives from a lack of agreement on just what "meaning" is.

A brief survey of the principal streamsin modern linguistic analysis will point up the centrality of the notion of "meaning" and suggest some points where the ideas of Aquinas may be helpful or relevant. The positions of de Saussure, Bloomfield, Malinowski and Firth, are the influential sources in the European, American and English "schools" respectively, and the work of Benjamin Lee Whorf has raised issues of interest to all.

De SAUSSURE

Under the title "Cours de Linguistique Generale"[1] the lectures given between 1906-1911 by the French-Swiss linguist Ferdinand de Saussure, were published posthumously by his students.

De Saussure was dissatisfied with the results of the comparative and historical philologists, and sought to put the study of language on a scientific basis. Since science is not concerned with the individual, but with the universal, he called for a conventional simplification of the data, as is the practice in all sciences[2] and consequently made some important distinctions about what it is that the linguist should study.

Such is the nature of language, he held, that it is both needless and fruitless to be concerned merely with the details of an individual's use of language, which he called la parole[3]; for similar reasons, even the habits of a large number of individuals, le langage[4] were not a proper object of scientific study, since la parole is individual, and le langage is both individual and social and both are subject to great fluctuations, while la langue is not; he defines la langue as "both a social product of the faculty of language and an ensemble of the necessary conventions adopted by the social body to permit the exercise of that faculty."[5]

He distinguished as well the study of a language's history (diachronic linguistics) from the study of an abstraction, an _état de langue_ taken as an existent, contemporary state of language in perfect equilibrium (synchronic linguistics).[1] This was justified by the fact that the ordinary user of language is unaware of the history of language-elements he uses successfully, and by the fact that he does use a certain set of relatively stable elements and relations (le langage), whose regularity among many can be attributed to the abstract patterns according to which each understands the others when they speak to him (_la langue_ vs _la parole_)[2]

It is not the concrete description of linguistic signs that is important, but their _value_, which is based on opposition to other signs. Saussure illustrated _value_ in many examples, one of the best-known being that of the chessmen. The material composition of a Knight is not what makes it a knight, since anything, a button or a pebble, can be substituted for it, as long as it has the same oppositional relations to the other pieces; that is, as long as it makes the knight's characteristic moves.[3]

He defined the linguistic sign as the association of an acoustic image with a concept[4], a union so intimate that concept and acoustic image are like two sides of a sheet of paper: one cannot be cut without altering the other.[5] The concept is called the _signifié_, the acoustic image the _signifiant_, and the combination of the two is the linguistic sign. There is nothing _a priori_ or 'given' about the concept, so it has determined values as the signs do, through its oppositional relations to other similar concepts.[6] For that reason, Saussure concluded that in _la langue_, there are nothing but differences: however, the combination of particular sounds with particular meanings was a positive fact, the only positive fact with which the linguist had to do, since it is the task of _la langue_ to maintain this parallelism between these two orders of differences.[7]

Opposition is the basis of linguistic value, and Saussure sets up two axes in the "chain of speech" in which the oppositional relations can be considered. There are associative (now called paradigmatic) and syntagmatic relations. The first are relations _in absentia_, in that a word can be abstracted from the chain of speech, and compared to other words it suggests, since they are similar in form or meaning. "_Teaching_" might thus suggest all words in -_ing_, or all words having to do with the profession of teaching. Syntagmatic relations are relations _in praesentia_, and they hold between words and their parts actually found together in actual discourse. "Syntax" as it is generally used today is only a part of the study of syntagms, since this includes the study of how intimately parts of words, words and word-groups are linked together in the chain, and what can be inserted into their concatenation.[1]

Having distinguished these various relations, Saussure can now show that _signification_ and _valeur_ and _content_, while intimately linked, are not exactly the same thing. The value of a sign is determined by its oppositions, its content or reference are different, as can be seen by comparing English _sheep_ and _mutton_ with the French _mouton_, since the latter has the same reference common to both of the English expressions, but not the same content or value.[2]

Saussure's explanation of the nature of the linguistic sign is often interpreted as the association of an acoustic image with another image of some sort, and the pictorial illustration he gives (or that which is given in the _Cours_) seems to support this view. But his first illustration of the relationship of _signifié_ and _signifiant_ shows typographically the association of a _concept_ and an acoustic image.[3] Since he left the study of concepts to the psychologists, this is not the inevitable conclusion. He himself defines concepts in passing as "_les faits de conscience_"[4], and says that as far as language is concerned, "a concept is a quality of

the phonetic substance, just as a particular part of the sound is a quality of the concept."[1] This idea leads him to one of his most famous remarks, "Linguistics works on that borderline where elements of two orders combine, and that is why this combination produces a form, and not a substance."[2] And again,

> "Units and grammatical facts would not be confused if linguistic signs were made up of something besides differences. But language (<u>la langue</u>) being what it is, we shall find nothing simple in it, regardless of our approach, everywhere and always there is the same complex equilibrium of terms that mutually condition each other. Putting it another way, <u>la langue</u> is a form and not a substance. This truth cannot be overemphasized, for all our incorrect ways of naming things that pertain to language stem from the unconscious supposition that the linguistic phenomenon must have substance."[3]

<u>BLOOMFIELD</u>

While de Saussure must be credited with being the first to set linguists the task of examining language as an internally consistent, self-defining system, probably the most important contributions to the modern study of language were made by a man who rejected the suppositions on which Saussure built. For Bloomfield would deny the status of "science" to the linguistics of de Saussure, since he does not deal exclusively with observables, measureable and publicly accessible to all.[4]

What is observable in the use of language, he pointed out, are the sounds that people make and the external circumstances that precede, accompany and follow upon the production of sounds. These vocal sounds can be described phonetically and classified functionally, and this gives a start to linguistic analysis, whose basic assumption Bloomfield takes to be: "In certain communities, some speech utterances are alike in form and meaning."[5] The meaning of a linguistic form is "the situation in which the speaker utters it, and the response it calls forth in the hearer."[6]

The term "response" indicates the psychological background of Bloomfields ideas about meaning, for he considered speech to be a substitute stimulus or response, according to the teachings of Behaviorism as expounded by Watson and Weiss. It was their conviction that terms like "idea" and "mind" were covers for our ignorance about the workings of the body in general and the brain in particular, and that progress would be made in psychology when descriptions of observable processes in the body could be substituted for them.

Similarly, Bloomfield considers that insofar as it is desirable to correlate the meanings of linguistic forms with bodily processes rather than social situations (or with the objects of scientific definitions, about which, alone, we have true knowlege), these processes will fall into three main groups: (1) those that are large-scale and readily observable, and therefore relatively the same in all men; (2) smaller scale muscular contractions and glandular secretions which may vary considerably from person to person, and (3) very obscure processes, such as the soundless movements of the vocal organs, with which he identifies "talking to oneself" or "thinking"[1] By reason of this descending scale of observability, he saw that statements of meaning in such terms will always be the weak point in a language-theory built along his lines.[2]

He is like de Saussure in stressing that more and more exact phonetic description is not the aim of linguistics, but rather, it is the discovery of those phonetic features which are distinctive in the language, in terms of which linguistic forms can be described.[3] A linguistic form is one that has a constant meaning and phonetic shape[4]. Since meaning is largely situational, it is necessary to distinguish "between the non-distinctive features of a situation (the size, shape, color of a particular apple) and the <u>distinctive</u>

or <u>linguistic</u> <u>meaning</u> (the <u>semantic</u> features) which are common to all the situations that call forth the utterance of the linguistic form"[1]

Despite the obscure and unverifiable terminology of the mentalists, Bloomfield feels that mentalist and mechanist alike "define meanings in terms of the speaker's situation, and whenever this seems to add anything, in terms of the hearer's response"[2] As far as "images" are concerned, Bloomfield observes quite correctly that the mentalist "merely infers that the image was present in others"[3], since only our own interior experiences are available to us.

Meaning is thus seen to be central to his analysis, since "we can only recognize the distinctive features of an utterance when we know the meaning"[4]; "a linguistic form which bears a partial phonetic-semantic resemblance to some other linguistic form is a <u>complex form</u>"[5]; "A linguistic form which bears no partial phonetic-semantic resemblance to any other form is a <u>simple</u> form or a <u>morpheme</u>;"[6] "The meaningful arrangement of the forms of a language constitute its grammar..."[7]

But is is only through science that we arrive at adequate definitions, and these concern mostly chemical, mineral and other such items, while words like 'love' and 'hate' are in the vast majority, and these are not as yet susceptible of scientific definition, nor are they likely to be. So we have to "act as though science had progressed far enough to identify all the situations and responses which make up the meaning of speech forms"[8], and assume that each linguistic form has a definite and constant meaning, an assumption that is justified by the <u>de facto</u> social cooperation accomplished through language-use, but one that Bloomfield recognizes to be both unverifiable and historically false.[9]

Bloomfield's treatment of meaning, based on criteria in which he himself had no confidence, influenced many American

analysts to avoid all mention of meaning at all, so that it has become almost a fetish to avoid mentioning the word[1] and gives the impression often enough that they have a pathological fear of being deceived. Yet the salutary effect has been to concentrate on the Development of more and more rigorous criteria for formal definition of units, shifting the accent from Bloomfields' extra-linguistic cul de sac to intralinguistic distribution of elements.

MALINOWSKI

Bloomfield had found that "in the stress of recording utterly strange forms" in American Indian languages, "one soon learned that philosophical presuppositions were a hindrance".[2] Of course that would depend on what they were. However, another worker came to the same conclusion, presumably taking such presuppositions to be that there was a single, universal segmentation of the world into features which had been codified in the parts-of-speech analysis of traditional grammar.

In analyzing the language of the Trobriand Islanders, Malinowski soon found that he had to qualify the idea that language was an expression of thought. For in trying to translate words in their language, he saw it was impossible to equate them with ideas intelligible to a European, without setting them in their "context of situation", by which he understood, "the general conditions under which a language is spoken"[3]

Malinowski's first conclusions were that language is an expression of man's attitude toward the world as he knows it, and that knowledge varies greatly according to cultural levels. As a consequence, various cultures do not express the same things in language, and it is impossible to translate simply from one language to another without a detailed cultural commentary. This process of setting expressions in the social context of situation is the only way of seeing language as it really is. Rather than a mirror of thought and reflection, he found that language is basically pragmatic, and the use made of it by primitives and children

is somehow the original and pure nature of language. At first he considered that the science and literature of the West were an exception to this. Later[1] he retracted this view, saying that while he had once "opposed civilized and scientific to primitive speech...as if the theoretical uses of words in modern philosophic and scientific writing were completely detached from their pragmatic uses", he now says that "this was an error and a serious one at that", since there is only a difference of degree between them.

It was through his efforts to translate primitive languages that Malinowski was brought to his principle views about the nature of language, and what he has to say about the word in this process is not wholly consistent. For instance, he considered a word the product of a rather sophisticated analysis, a figment of the analyst's method. Yet a word-for-word translation is required "to give a certain direct feeling for the language" as an itital step. Then a detailed cultural commentary is to be added to the word-for-word interlinear translation, since translation is the assignment of meanings, and to assign meanings, he says, is to define words and things simultaneously, locating both in the culture. "Ultimately", he says, "all the meanings of all words are derived from bodily experiences", and meaning for him is "a concept embodied in the behavior of the natives, in their interests or in their doctrines." Orders, for instance, show their meaning "by the change produced by this sound in the behavior of people...the word is the conditioning stimulus of human action." Despite the basic dictum that "language is a mode of action" rather than a mirror of thought, Malinowski's view of meaning is still extralinguistic, and he finds himself in agreement with Ogden and Richards' view that "no theory of meaning can be given without the study of the mechanism of reference."

J. R. FIRTH

Another linguistic scholar, with whom the "context of situation" has become identified, is J. R. Firth. While he attrib-

utes the initial statement of the "context of situation" technique to Malinowski[1], his own development and understanding of it involves considerable differences.

The first difference that Firth point out between his and Malinowski's approach is in the latter's apparent concern with the 'reality' of utterances, situations and words.. For Malinowski, he observes,

> "The word 'utterance' seems to have had an almost hypnotic suggestion of 'reality' which often leads him into the dangerous confusion of a theoretical contruct with items of experience. The factors or elements of a situation, including the text, are abstractions from experience, and are not in any sense embedded in it, except perhaps in an applied scientific sense, in renewal of connection with it."

Firth sees the task of the linguist with respect to language to consist in observation, analysis, synthesis and renewal of connection with the language events under analysis.

The second importand difference between Firth and Malinowski is seen in their treatment of "meaning". For Malinowski, this was almost wholly extralinguistic[2]; for Firth, the linguist as linguist is primarilly concerned with the statement of intralinguistic meaning, and the semantic or extralinguistic is merely one of a series of levels in his analysis:

> "To make statements of meaning in terms of linguistics, we may accept the language event as a whole, then deal with it at various levels, sometimes in a descending order, beginning with the social context and proceeding through syntax and vocabulary to phonology and even phonetics, and at other time in the opposite order, which will be adopted here, since the main purpose is the exposition of linguistics as a discipline and technique for the statement of meanings without reference to such dualisms and dichotomies as word and idea, covert expressions and covert concepts, language and thought, subject and object."[3]

"Meaning" for Firth is a relationship of a very inclusive kind, since a considerable number of important sets of regularities, relationships and patterns can be distinguished by various cirteria within a language. Since it consists of sounds which pattern in various ways, each distinguishable pattern can be considered a level of analysis, constituting a separate 'context', some correlated only with intralinguistic items, others with extralinguistic items. Even in the case of the intralinguistic contexts, Firth considers that one is making statements of "meaning", since "meaning" is a funtion of many components:

> "...I propose to split up meaning or function into a series of component functions. Each function will be defined as the use of some language form or element in relation to some context. Meaning, that is to say, is to be regarded as a complex of contextual relations: phonetics, grammar, lexicography and semantics each handles its own components of the complex in its own appropriate context".[1]

Firth illustrates this splitting up into components through the metaphor of the color spectrum. Some of the component levels he discusses are:

> "1. The interior relations of elements of structure, words and other bits and pieces of the text.
>
> 2. The interior relations of systems set up to give values to elements of structure and the bits and pieces.
>
> 3. The interior relations of contexts of situations.
>
> The interior relations of the context of situation may be summarized as follows:
>
> A. i. The verbal action of the participants
>   ii. The non-verbal action of the participants.
>
> B. The relevant objects
>
> C. The effect of the verbal action."[2]

While a great deal of Firth's work is devoted to setting up an exhaustive, intralinguistic, hence formal, set of cetegories for linguistic description, he does not think that this is the

only aim and complete justification for the linguist's work. The task of the linguist as he sees it is "observation, analysis, syntheseis and renewal of connection." Hence he considers his theories as "applicable to particular linguistic descriptions, not a theory of universals for general linguistic description. The main purpose is to guide the descriptive analysis of languages..."[1]

B. L. WHORF

One of the most interesting features of the work of Benjamin Lee Whorf is the fact that, acquanted as he was with the techniques of purely formal description, he went far beyond the usual practice of American linguists and tried to find the correlations between the intralinguistic categories he found it necessary to set up, and the conceptual framework of the Hopi Indians whose language he was analyzing.[2]

Initially, he reports, he thought he was on familiar grounds, with categories like nouns and verbs and adverbs clearly marked.[3] But he soon found that while these categories compared to those, say of English, as formal patterns and in the initial referential meaning deducible from the situations in which they were used[4], their meaning for the Hopi was vastly different, reflecting an entirely different view of the physical world. In particular, he concluded that

> "...it is gratuitous to assume that a Hopi who knows only the Hopi language and the cultural ideas of his own society has the same notions, often supposed to be intuitions, of time and space, that we have, and that are generally assumed to be universal"[5]

The Hopi language, he found, "contains no reference to time, either explicit or implicit."[6] As a result of this, he thought that

> "Just as it is possible to have any number of Geometries other than the Euclidean, which give an equally perfect account of space-configurations, so it is possible to have descriptions of the universe, all equally valid, that do not contain our familiar contrasts of time and space... Thus the Hopi language

> and culture conceals a metaphysics, just as our so-called naive view of space and time does, or as the relativity theory does, yet it is a different metaphysics from either."[1]

It is our metaphysics, he says, which imposes on the universe two "grand cosmic forms, space and time,"[2] whereas the two comparably universal forms of the Hopi are describable as "Manifest and Manifesting vs. Unmanifest, or Objective vs. Subjective".[3] Whorf does not devote much time to explicitating the category of "Manifest", since it corresponds to anything actually perceived. But finding the idea of "Unmanifest" the more difficult notion, he gives a longer catalogue of its meanings. Among other things, it includes "our future, plus all that is mental". it is "quivering with life, power and potency" it is "the future contained in essence", "in a dynamic state, but not a state of motion, already with us in vital and mental form"; its "dynamism is at work in the field of eventuating and manifesting."[4]

Finding space-time and Manifest-Unmanifest so incomparable, Whorf seems justified in concluding:

> "We are thus introduced to a new principle of relativity, which holds that all observers are not led by the same physical evidence to the same picture of the universe, unless their linguistic backgrounds are similar, or can be calibrated."[5]

This "calibration" seems to mean a fairly ready appreciation of language differences, such as is found among the principal European languages, which he calls "Standard Average European", abbreviated as SAE: while there are certain lacks of parallel, these languages are sufficiently similar in structure, and the cultural background of the speakers is unified enough to minimize differences in outlook. Not so with Hopi.

What is really important about Whorf's work is not the discovery of this "new" principle of relativity, since the history of philosophy from ancient to modern times shows that not even

identity of language prevents people from arriving at quite diverse ways of looking at the world. It is rather that in the formal description of the language, he found the clues that required him to look for such an explanation.

In discussing terms of Hopi architecture, for instance, he found that his informant would always give an answer to a question like "What is this? what do you call that?" when pointing to a brick or a room, and he initially assumed that both words were "noun" types.

> "But the word for 'room' and a few others used to denote interior spaces, on examination, will be found to have different grammatical or paradigmatic properties from the words for architectural elements (like 'brick') or structural members (like 'ladder', 'stairs')"[1]

The Hopi words for "room" and "Brick" differ in Hopi much as adverbs and nouns respectively do in English: the 'room' is not actually 'named', but other things are located with respect to it, as in hollow spaces.[2] Similarly,

> "In Hopi, all phase terms, like 'summer', 'morning', etc. are not nouns, but a kind of adverb...distinct even from other Hopi 'adverbs'...one does not say '<u>this</u> summer', but 'summer now'."[3]

There are several features in this analysis of Whorf's which are rather unsatisfactory. First, as he uses the term, metaphysics seems to be the establishment or analysis of a set of descriptive categories; secondly, he seems to think that most philosophers have found "time" and "space" primitive, unanalyzable concepts. Neither of these are the only possibilities. The third difficulty is his choice of paralleling space-time and Manifest-Unmanifest, for it is in this parallel or lack of it that the chief "shock-value" of this linguistic "relativity" is based. But while space-time and Manifest-Unmanifest are evidently incomparable, the Manifest-Unmanifest opposition is obviously very close to the act-potency opposition of traditional

metaphysics.

By taking act-potency as the more fundamental opposition it is then possible to give a definition of "time" that shows better what it is that the Hopi and SAE verbal systems have in common than is possible on Whorf's basis of comparison. Aquinas' definition of time is the traditional one, <u>mensura motus secundum prius et posterius</u>, "a measure of change according to before and after"; for Hopi, the definition would be "a measure of change according to actuality and potentiality", where <u>Manifest</u> is actual and <u>Unmanifest</u> is potential. "Time" in the two verbal categories can now be seen to have <u>measure</u> and <u>change</u> in common, differing only in the criterion of change. Whorf's data on the language as represented in his collected writings makes it difficult to pursue the comparison any further, to find out, for instance, to what extent the notion of <u>substance</u>, which is the constant underlying change, is represented grammatically.

Instances of the act-potency opposition are existence-essence, accident-substance, form-matter; all are universal and analogical terms, and in the middle ages, three points of view in their consideration were developed, <u>ante rem</u>, <u>in re</u> and <u>post rem</u>, corresponding to the metaphysical, physical and logical or psychological questions about them. Whorf mixes these all up in discussing Manifest-Unmanifest, but from what he has to say about them, it is clear that this is a typical act-potency opposition. Whorf describes the Unmanifest as "the future contained in essence" recalling the medieval idea that <u>essentia</u> is a potency for existence or actuality from either the physical or metaphysical point of view. The Unmanifest is also "in a dynamic state, but not a state of motion", and this corresponds to Aquinas' active <u>potency</u> as well as Augustine's <u>ratio seminalis</u>[1]. The Unmanifest is said to be "already with us, in vital and mental form", which would correspond to the universal either <u>in re</u> or <u>post rem</u>.

Whorf makes the various geometries, our so-called naive view of space and time, the theory of relativity and the world-view of different languages all a "concealed metaphysics", and so evidently identifies metaphysics with description. For Aquinas, metaphysics is not the establishment of logical, descriptive categories, nor their analysis in and for themselves. Whatever categories are derived from ordinary language or from the various sciences are of interest to him, because he believes them to be the media through which we actually can discover facts about the world, whenever it can be established that they are truly predicated of things.

Metaphysics is for him an explanatory science, which seeks to establish the conditions which must hold in order to make the facts discovered intelligible. The result of this purely rational activity is the formation of a hypothetical explanatory construct, on the basis of which the facts discovered in true propositions can be explained, by showing the nature and relative necessity of their connections.

On these grounds, it makes no sense to speak of various world-view and geometries as "valid" in themselves, or as giving an "equally perfect account", unless "validity" regards internal consistency, in which case it is uninteresting. Neither Euclidean nor non-Euclidean geometries are true or false, valid or invalid. They are images, constructs which will prove adequate or inadequate as descriptions of fact, or as bases for explaining facts. They are true or false when predicated of the kind of facts they describe.

Hopi uses the one form <u>wari</u> (running, statement of fact) in both situations where English would say <u>he is running</u> and <u>he ran</u>.[1] These expressions then differ, in <u>value</u> and <u>content</u>, they do not have an exactly co-terminous <u>reference</u>. But their respective <u>validity</u>, their ability to give <u>a perfect account</u> and whether they are equally <u>true</u> does not merely depend on a knowledge of the descriptive frames of the language, but on

facts of the case and on the kind of question that is being asked. Probably any construct whatever can be considered absolutely accurate with respect to any situation, and still be wholly inadequate or uninteresting for some purposes. For instance, the whole world can be accurately divided into those who do, and those who do not play the tuba: the dichotomy can be affirmed with irrefutable truth, given a standard for 'playing the tuba': but a description like this would interest no one but tuba-manufacturers. As Whorf puts it so well, for some purposes, one language is a rapier where another is like a bludgeon[1]

MODERN LINGUISTICS AND AQUINAS

From the schematic representation of Aquinas' view of how description and explanation are related, it can be readily appreciated that the descriptive findings of modern linguistics are readily assimilable into his theories. Description is neither his ultimate aim, nor his principal concern, and it is a standard step in his search for more accurate and comprehensive understanding, that once descriptive data have been found inadequate, that they be replaced by more accurate data. Since his treatment of language depends on the imperfect descriptions of Donatus and Priscian, these can be rejected and ought to be, since modern techniques provide the more suggestive arrangement of linguistic data, and that is what he demands as the first step towards understanding.

The determination of modern linguists to study language "in and for itself" is a process of abstraction which is familiar to him, and one for which he provides a far-reaching justification. Among linguists, there is broad agreement that "language in and for itself" is to be taken as the use of language in its social setting, as observable and publicly accessible. This preliminary identification of language does not imply any dogmatic decision

about what "the real nature" of language is, as might be concluded from Malinowski's approach. Identifying the object of linguistic study in this preliminary fashion is programmatic, not the establishing of an essential definition. It is based on the demonstrable progress that sciences make when they abstract from pronouncements that prejudge what is or will be relevant to their descriptions and explanation.s

Given this approach, success is the first criterion. Our ability to describe, explain and predict linguistic activity accurately is justification enough. But while all linguists would probably hold that this is the ideal goal, a goal that they are reasonably confident can be attained to an important extent, few would hold that the present state of our knowledge about language is adequate to its fulfillment.

Skinner[1] is the only one so far who has set out a preliminary scheme for predicting the concrete details of linguistic activity. His presuppositions were savegely criticized by Chomsky[2] on both linguistic and psychological grounds. The trend in recent work, as seen in Mowrer's studies[3] supports Chomsky's criticism, that not enough account is taken in Skinner's work of the "contribution of the organism". This is roughly what Aquinas understood by "rational activity", and his psychology represents a rational hypothesis about how this goes on. His psychology is too narrowly based to be adopted unmodified in modern work, although its presuppositions could be extended. But it is interesting to see how, on even that basis, some difficulties about linguistic analysis can be anticipated.

Saussure's sign-theory has been interpreted as an image-word association which does not seem to do justice to the facts of language. Aquinas would predict that no success will be had with the syncategorematic parts of speech like

"if", "but" and "although", etc.

Linguists have challenged the usefulness, and even the possibility, of studying la langue as a pure form, without reference to, say, its phonic substance. Aquinas would also object on the ground that the Universal ("form" in de Saussure's use here) is grasped only in the singular (here Saussure's "substance") and that the singular is only known through the universal.

The same objections are made to the work of Hjelmslev,[1] often taken to be Saussure reduced to his logical extreme. Hjelmslev is not easy to understand, but insofar as I can follow him, he would be closer to the views of Scotus than those of Aquinas, particularly in regard to his confidence about what can usefully be deduced from a purely formal construct, no matter what its origin. For Hjelmslev, Glossematics is to be the theory of language, not just another theory, once the hypothesis is verified that any succession entails a corresponding system which can be analyzed and reduced to a determined number of combinable units. He considers that his theory is empirical and not just a priori in a medieval or rationalistic sense, because it is based on the linguists' experience of a great number of different languages. But it is arbitrary in that its units and relations are unambiguously, univocally defined, without reference to any individual language, and so cannot be falsified by them. It is appropriate because the units and relations selected are based on actual past experience of languages.

The advantage of such an approach would be the provision on an absolute, to which various languages could be compared; but things differ formally which are known to have something material in common; by professing to abstract from the material (phonetic) side of language, Hjelmslev's procedure seems questionable.

Another objection to the algebraic procedure recommended by Hjelmslev - if indeed the preceding exposition of it is accurate - would be that application of it to languages would tell us a good deal about how these languages are related to the theory, without necessarily telling us much about the languages themselves. The objection is not particularly fatal, perhaps, in that it is often useful to know that certain sets of facts cannot be handled by certain mathematical procedures, such as statistical formulae, when the formulae are not meant to explain the data in the particular fashion required.[1] Hjelmslev himself is quite clear about the fact that his theory is a deliberate construct, neither true nor false, since he deliberately excludes any existence postulate in forming it, and equates "correctness" with "simplicity".[2]

Bloomfield's behavioristic position on meaning would, of course, raise the hackles of an inveterate mentalist like Aquinas, but since the basic difficulties have been brought up and disposed of by Wells[3] there is no need to go into them further here, except to observe that, as Wells says, "Much of the help that the Wittgensteinians give can be found elsewhere, even in traditional writers."[4]

AQUINAS AND MODERN LINGUISTICS

While the findings and methods of modern linguistics have a good deal to offer Aquinas, is the converse also the case? Since he is a philosopher, and linguistics quite justifiably seeks to retain its autonomy with respect to philosophic positions, anything that Aquinas has to say will be quite irrelevant to the heart of modern linguistics, the procedures of formal description and explanation.

It is only when questions arise which seem to have some philosophic bearing that Aquinas' position may be considered relevant: such questions would include, it seems to me, the

status of linguistic abstractions like the phoneme, morpheme, and even language and grammar. Secondly, while referential meaning is by no means the only type linguistics is interested in, it is an important type. Aquinas' discussion of it offers some distinctions which, insofar as they can be formalized, may be helpful in establishing a scientific semantics. Thirdly, teaching foreign languages raises problems whose solution can be facilitated through the introduction of some sort of psychological construct which will serve to bridge cultural and linguistic differences. That of Aquinas deserves consideration.

Status of Linguistic Abstractions

The autonomy of linguistic science in deciding its own criteria of relevance for the description and explanation of language is readily deducible from Aquinas' position on the processes of understanding. The first step is the organization of descriptive data into a suggestive arrangement. Not only are alternative arrangements to be expected, they are required: their omission would be a fault.

The dichtomy of "God's Truth" vs. "Hocus Pocus" views of what the linguist is doing[1] does not sufficiently bring this out, since such an opposition seems to suggest that only a Platonic realist ("God's Truth") or a Nominalistic attitude ("Hocus Pocus") are the only alternatives.

The first view is generally attributed to Pike:

> "It is assumed in this volume that phonemes exist as structural entities or relationships; and that our analytic purpose is to find and symbolize them. This implies that there is only one accurate phonemic analysis of any one set of data. At present, however, our phonemic theory is inadequate to lead phonemicists to uniform conclusions on many problems..."[2]

Others have shown that this "inadequacy" is unlikely to be solved by either refinement of the theory or additional in-

formation, since it will depend on the decisions made about how many elements are to be required for defining a phoneme (or any other such abstraction). Different decisions result in alternative solutions, and they can all be considered "equally valid, though they may not be equally suitable for this or that purpose."[1]

Twaddell reject all the proposals to identify the phoneme with any physical or psychological reality, and developes Chao's notion that the number of elements that enter into the defining criteria are of the utmost importance, since the notion of environments for phonemic distinctions will depend on the purpose one has in mind. He thinks that Pike's phonemes would be better termed a transcribemes, and as for their reality,

> "It may be that before it is appropriate to answer or even to ask the question as to the nature of the reality associated with the term 'phoneme', we should first ask and answer the question whether the term can profitably be associated with any reality at all. It is what might be called the thesis of this paper that it is inexpedient and probably impossible (at present) to associate the term with a reality."[2]

The reason for this is that linguistics is to be a science, and therefore must limit itself to observables. Twaddell therefore has no difficulty in showing that no physical or psychological fact can be discovered empirically to which the phoneme, which is defined through its functional oppositions, corresponds: he therefore thinks it best to consider the phoneme as an abstractional, fictitious unit. It is the notion of "function" which bases the "hocus-pocus" description of what the linguist is about.

From the rigor and seriousness with which linguists go about their work, and the violent disagreements about the pertinence of each other's abstractions, it is clear that few think they are involved in a game where anyone can make up any rules he chooses and expect to find his work studied and

discussed by other linguists. All are interested in actual languages, and quite evidently believe that they are discovering something "true", something important about them. So the status of linguistic abstractions is not so much a problem internal to linguistics, as it is a problem in communication with other disciplines, particularly those of a traditional "humanistic" orientation.

Disputes about these terms are cast in the mold of the medieval disputes about Universals, and insofar as one considers the ante rem, in re and post rem distinctions clarify the issue, some light can also be shed on this problem about linguists' abstractions. The problem of a phoneme ante rem, either as a Platonic Idea or a Thomistic Exemplary idea, does not arise, since language is an artifact, not a product of nature: that is, it is culturally built up and transmitted, not genetically. The phoneme post rem is the concept of the phoneme, and evidently can exist as such only in the mind, as a product of intelligent abstraction. The phoneme in re is just what Twaddell describes it to be - a term in a relation of opposition: consequently it makes no sense to inquire about the "existence" of phonemes in phonetic or empirically discoverable psychological facts, since it is an abstraction, and these facts or events are concrete. But it does make eminent good sense to say that a phonemic distinction does or does not hold between, say, the p of pat and the b of bat, for the "truth" of these assertions is readily determinable through the criteria established for defining the phoneme. It also makes good sense to question the adequacy of a particular method of defining the phoneme, as Twaddell does in the case of spill, where no sp vs *sb opposition can be found. Pike's ideas are neither true nor false, any more than Twaddell's: given his purpose, Pike's identification of the p of spill with the p that elsewhere does oppose b need not be questioned, since transcribing

it either as p or b would be equally simple. Since Twaddell is concerned with much more than a simple and clear method of representing utterances, he is predicably dissatisfied with a unit inadequately defined for his purposes. Pike establishes phonemes largely on the basis of lexical distinctions, ideally in minimal, identical environments. Once the notion of "environment" is extended to cover more than that, the definition of "phoneme", or even the usefulness of the concept, will be variously interpreted.

Meaning

Aquinas was concerned principally with referential meaning; formal analysis deals with the distribution of linguistic units by means of which different meanings are presumably signalled. Not all linguistic units have referential meaning, and many cannot sensibly be said to have meaning at all, aside from the fact that language is not exhausted by its referential vocabulary.

To establish a scientific semantics, a knowledge of the kind of distinctions a thinker like Aquinas made, and his reasons for doing so, is relevant at least to the extent of knowing what not to do. In this sense, Aquinas' philosophical outlook, as with most philosophic views about meaning, has a negative relevance to scientific study of language.

Under the rubric of "meaning", Saussure distinguished value, content and reference; to these can be added Aquinas' distinctions about the modes of signification, understanding and being, which concerned the status of meaningful elements in language, rather than their value, content or reference.

The value of signs in a language can be established by a study of their distribution, without precise knowledge of their meaning, or even without knowing that they have any. The content of a sign is not the same thing as its value, although it is correlative with it: to establish the content of a sign, it is

necessary to know its reference, or the reference of a sign to which it is comparable. Saussure illustrated that in the difference between French mouton and the English sheep and mutton: the reference partially coincides, but the content and value differ. That these expressions have different values can be seen through comparing their distribution in the two languages and in the circumstances in which they are used: the correlation of observable distribution and observable use, however is usually of limited value for certain kinds of questions, such as the question of their objective status: for this purpose, Aquinas developed the distinctions of the modes of signifying, understanding and existing.

He starts with an appreciation that in Latin, nouns established as such by grammatical criteria very often refer to "substances" like men and animals, trees and oceans. But it was clear that everything signified nominally was not understood as a "substance" in the same sense, although there was some similarity[1]. Quite beyond that, too, he saw that not everything we must understand as substantial need actually be so. Any decision that could be reached in this field, while it may start with grammatical considerations, had to be settled on grounds quite independent of grammar.

This can also be illustrated by Carnap's marvellous book, "The Logical Syntax of Language": His method differs from that of his predecessors, he says[2], because they started with meaningful signs, and then worked out the syntactic possibilities such meanings would allow. He begins from the other end, sets up a set of logical syntactic rules, in the manner in which a statistician might invent a distributional formula, and then says that the syntactic rules will determine what the symbols used in sentences can mean, as a consequence of his artibrary

rules of formation, transformation and inference. The "meaning" which is permitted or determined by this method is neither content nor reference, since this would represent a return to the ambiguities Carnap wishes to avoid. He proceeds in this way not because he is uninterested in referential meaning, but because he is.

For he gets his "reference" from the sciences, whose logical examination is to replace philosophy. Sciences get their reference through "machines", not necessarily of the hardware type, but the empirical observations and techniques employed. The machines' scope of reference and ability to refer comes from the design and construction the scientist determines, on the basis of what he knows to be relevant and accessible to his investigations, and this is, of course, empirical reality.

So what Carnaps' method determines is the values of such scientific terms in his system, not their reference, content or status. While Carnap imposes the values, the linguist must discover them for a language. His system being an arbitrary construct, Carnap can also legitimately impose what kind of reference will be acceptable. The linguist does not have the same freedom, but does not find that a drawback, since he is not required by his methods to make any decisions about the status of either referential or non-referential units. On the one hand, he can display accurately the distribution of all formally established units in the language, and at the same time, can give an indication of what he considers their relevant non-linguistic environments.

It is in this sense that formal analysis prescinds from the problems of the various psychologies and philosophies, so that there is no need for the non-linguistic desciplines to feel that their fields have been invaded, any more than the linguist is required to subscribe to one or other psychological or philosophical position. Such commitments are always made on quite other bases.

In deciding what the relevant non-linguistic environments are, the linguist may have to borrow from various sciences, or even psychological or philosophic theories, but this does not imply that he need subscribe to them, or that his interpretation is necessarily false when those theories are falsified. Being an intelligent person, he is as qualified as anyone else to see the most direct and suggestive explanation of how linguistic and non-linguistic categories parallel each other, and less likely than most to be led astray by superficial similarities. Whorf's work shows what fascinating information would be lost, if the linguist abdicated from the duty to assign relevant non-linguistic environment, and merely assigned a neutral, so-called objective account of the non-linguistic circumstances in which the recorded utterances were made, for any description of such circumstances requires some criteria, and these are most likely those derived from one's own language in an unexamined fashion.

This also suggests that fears of "hypostasization" or "reification" of linguistic, psychological or cultural factors are largely exaggerated. Avoidance of "process" terms or mention of cultural "attitudes" or "ideas" and "concepts" when these seem to be the shortest way of explaining the descriptive data may become as much a superstition as such procedures are exposed to. Evidently expressions like "mind" and "concept" and so on are more easily covers for our ignorance of investigable processes than those of the empirical sciences. The core of linguistic analysis is and must remain formal, and the use of such terms, either as initial heuristic orientations, or subsequent suggestive comparisons does not invalidate the strictly linguistic data. Omission of such observations, which would be no more than suggestions about the relevance of linguistic data to other disciplines, renders the linguistic data incomprehensible and irrelevant to them.

Psychological Construct

The learning of foreign languages requires an effort for which there is no substitute. The findings of modern linguistics, however, can facilitate the teaching and learning of languages, through its systematic descriptions which enable the student or teacher to compare languages, predict difficulties, and develope techniques for overcoming them.

The formal analysis is of course not a guarantee of successful teaching. This always requires that one build on what is already known, by comparing the new material with what has already been mastered, and showing the extent of agreement and difference. One of the most difficult notions for students to grasp is that each language is an autonomous structure, which must be learned in terms of itself, not in terms of one's native language.

While the notion of linguistic relativity may have been overemphasized in the past[1] there is still sufficient difference between even closely related languages and cultures to make the aquisition of the structural outlook a valuable linguistic and cultural goal.

Certainly the most obvious feature of a language, in the view of its normal speakers, is its vocabulary. Appreciation of grammatical patterns and regularities, while mastered in a practical way, are more difficult for the native speaker to formulate. As a consequence, it may be advantagous to take vocabulary differences between languages as the first and readily intelligible illustration of what is meant by the autonomous structure of each language. By using a psychological construct such as that part of Aquinas' developed above concerned with conceptalization, judgement and reasoning, it is possible to show how it is that individuals or cultures organize them into socially significant units or groups, name them, and judge about them.

Aquinas' scheme is not a description of how people must think or even how many people do think, but a rational scheme of how such activities are best carried out. As such, it is its own justification.

Some of the advantages of adopting this as an initial orientation in language-teaching would be the following:

(1) it is simple and clear and affords a ready reference when the teacher wants to recall the basic principles involved.

(2) Concerned as it is with conceptualization, reasoning and judgements, the scheme deals basically with the origin and proper use of names: being vocabulary-based, it corresponds to that language-feature most familiar to the student.

(3) Aquinas' insistence on the descriptive nature of concepts corresponds to the relativistic nature of linguistic and cultural units: while they are neither true nor false in themselves, they do prove adequate or inadequate to some problems and situations.

(4) Although the scheme illustrates the activity of an individual, it is readily interpretible as that of a culture: as individual's interests and responses vary, so do those of larger social groups. Cultures cut off entirely from others will predictably have quite different interests.

(5) Anchored as it is in sense experience, yet showing the unitary experience it is to know anything, the scheme can be used to illustrate how particular languages and cultures direct or inhibit certain observations habits, according to whether the linguistic-descriptive categories are obligatory or facultative in the language.

(6) By the same token, cultural units such as "good manners" "taboo expressions" can be shown as relativistic, since descriptive, and the need for non-linguistic criteria to judge about

their adequacy can be brought out.

(7) A scheme like this can better handle the problem of "displaced speech" than the behavioristic approach recommended by Bloomfield, since it takes into account the activity of the individual in a fashion impossible on those grounds. Very likely, further psychological developments in science will provide a testable explanation, making Aquinas' untestable construct unnecessary.

* * * *

In conclusion, it may be said that while Aquinas' philosophical views are predictably irrelevant to the science of linguistics, they are by no means irrelevant to the linguist. As such, the linguist need not be a philosopher. But few linguists are, nor are they content to be, mere technicians, applying descriptive procedures to scattered languages without concern for their importance to the general fund of human knowledge. Language is the most human thing about human beings, and its investigation of supreme importance in understanding men.

This concern for the "larger implications" of linguistic study, as in any field, borders on what is generally considered a "philosophic" outlook, and while no one can define precisely what philosophy is or ought to be, it is in general the sort of activity that seeks to organize all available facts into some rational whole.

Only the main outlines of Aquinas' philosophic position have been touched on in this work, but from what has been said of his basic principles, an idea of its inclusivemess and commonsense attitude may have emerged. All that modern studies have shown to be medieval twaddle has been rejected in modern Thomism, but the basic orientation retained. That basic attitude seems to reflect the outlook common to most linguists and other

scientists in their practical work, whatever their theoretical justification of it may be.

It may not have been without value to show that in modern as well as in medieval times, there is a consistent system which embodies a respect for facts without the immature demand for the final and irrevocably complete picture here and now, or the equally immature retreat into a blind faith that substitutes for investigation of the facts.

Notes

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1. Account of the theories in J.B. Conant, "On Understanding Science" (New York 1947, 1956) cf. 3; the connection with thermodynamics suggested by E.L. Mascall, "Christian Theology and Natural Science" (1956 Bampton Lectures, London 1957) p. 60.

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1. H. Diels, "Fragmente der Vorsokratiker", 3 Vols. 6th Edition by W. Kranz, (Berlin 1951-52 cf. Vol II
   H. Oppel, "Kanon" in PHILOLOGUS Supplementband xxx, Heft 4 (Leipsig 1937) pp. 21 ff.
   H. Steinthal, "Geschichte der Sprachwissenschaft" (Berlin 1863)

2. A.E. Taylor, "Plato" (London 1926, 1960)
   J. Burnet, "Platonis Opera" (Oxford 1946) Tome I, pp. 383-440 for the Dialogue Kratylos
   R.H. Robins, "Ancient and Medieval Grammatical Theory" (London 1951)
   H. Arens, "Sprachwissenschaft" (Munich 1955)
   L. Lersch, "Die Sprachphilosophie der Alten" (Bonn 1838-41)
   I.M. Bochenski, "Ancient Formal Logic" (Amsterdam 1951)

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1. Loeb Classical Library, text and translation of Aristotle's works (London 1926-1959:) central to his linguistic theories are the "Organon" (Categories, on Interpretation, Prior Analytics), "Art of Rhetoric" and "Poetics"
   cf. G. Grote "Aristotle" 2nd ed. (London 1880) and the sources quoted above

2. "On Intrepretation", Loeb Classical Library (London 1955) p.115

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1. Bochenski, op. cit. p. 26.
2. Accounts in Robins, Arens, Lersch, Bochenski, Steinthal.
   Cf. also Benfy, "Geschichte der Sprachwissenschaft" (Munich 1868)

3. He clearly distinguishes ὄνομα, ῥῆμα and σύνδεσμοι and may have subdistinguished the article from among the σύνδεσμοι. cf. Robins, op. cit. p. 19.

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1. The English expression "parts of speech" conceal what was chiefly in mind for the Romans in setting up partes orationis: they were the parts into which a sentence (oratio, Greek λόγος) could be analyzed.

2. cf. Steinthal, Robins, Arens etc., and "Science in Antiquity" by B. Farrington (London 1947) on the Museum, pp. 140-200.

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1. "Dionysius Thrax and the Western Grammatical Tradition", R.H. Robins, (Transactions of the Philosophical Society, (London 1957) pp. 67-106. cf. Also Steinthal, Lersch, Robins, Arens, op. cit.

2. A.E. Egger, "Apollonius Dyscole, Essai sur l'Histoire des Théories Grammaticales dans l'Antiquite" (Paris 1854); A. Thierfelder, "Beitrage zur Kritik und Erklarung des Apollonius Dyscolus" (Leipsig 1935)

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1. M. Terenti Varronis de Lingua Latina Libri qui supersunt ed. L. Spengel (Berlin 1826); J. Collart, "Varron, Grammarien Latin" (Paris 1954)

2. cf. Arens, Lersch, Robins, op. cit.

3. "The Ars Minor of Donatus" (text and tr. Chase) (London 1926)

4. Texts quoted here from the edition of Helias Putsch, in "Grammaticae Latinae auctores antiqui", cols. 531-1214 (Hanover 1605); the authoritative edition is that found in H. Keil, "Grammatici Latini" (Leipsig 1857-1880) Vol. II

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1. Book I, col. 573

2. Book I. 538

3. I. 539

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1. II. 573

2. II. 574

3. "Nomen est pars orationis, quae unicuique subjectorum corporum seu rerum communem vel propriam qualitatem distribuit" II 577.

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4. "Verbum est pars orationis cum temporibus et modis, sine casu, agendi vel patiendi signifactivum" VIII. 781

5. Book XI

6. "Pronomen est pars orationis, quae pro nomine proprio uniuscujusque acciptur, personasque finitas recipit." XII.933

7. "Proprium est pronominis pro aliquo nomine proprio poni, et certas significare personas. Ergo quis et qui et qualis et talis et quantus et tantus et similia quae sunt infinita sive interrogativa, vel relativa, vel redditiva, magis nomina sunt appellanda, quam pronomina." II. 575

8. "Est igitur praepositio pars orationis indeclinabilis, quae praeponitur aliis partibus, vel appositione, vel compositione." XIV. 974

9. "Adverbium est pars orationis indeclinabilis, cujus significatio verbis adiicitur." XV. 1003

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1. XV. 1023-1026

2. "Conjunctio est pars orationis, indeclinabilis, conjunctiva aliarum partium orationis, quibus consignificat, vim vel ordinationem demonstrans." XVI. 1024

3. "Non aliter possunt discerni a se partes orationis, nisi uniuscujusque proprietatis significationem attendamus" II. 575. This is sound advice, since it would call attention to the formal distinctions; but the version in Keil, quoted by Robins, is doubtless the accurate rendering, in the light of Priscian's practice: "Non aliter possunt discerni partes orationis, nisi uniuscujusque proprietat<u>es</u> significatio<u>num</u> attendamus." (Robins, "Ancient and Medieval Grammatical Theory", p. 65, referring to Keil, <u>Gram</u>. <u>Lat</u>. II, pp. 54-5)

4. Though he does call attention to some features of Latin tense and aspect in the verb, his treatment misstates the function of the future perfect and does not take the aspectual side of the present perfect into account.

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1. This summarises what Priscian has to say in VIII. 786-804 and omits his examples.

2. cf. Appendix I

3. V. 659, 669. "In uno proprie numerus non dicitur, sed abusive, quomodo nominativus casus non est, quod facit alios casus: quamvis multi de hoc dicunt, quod ideo casus sit dicendus, quod a generali nomine cadant omnium specialium nominativi. Sed si ob hoc casus est dicendus, omnes partes orationis possunt videri casum habere. Et verbum enim, et adverbium, et conjunctio, a generali verbo et adverbio, et conjunctione cadunt in speciales positiones singularium." (De Numero, V.659)

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1. V. 671-673

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1. XVII.1035 ss

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1. H.R. Patch, "The Tradition of Boethius" (New York 1935)
   H.F. Stewart, "Boethius" (London 1891)
   Gerald Vann, "The Wisdom of Boethius" (London 1952)
   J. Isaac, "Le Peri Hermeneias en Occident de Boèce à Saint Thomas" (Paris 1953)
   K. Dürr, "The Propositional Logic of Boethius" (Amsterdam 1951)
   M. Grabmann, "Mittelalterliches Geistesleben" (Munich 1926-1956) 3 vols.
   "Geschischte der Scholastischen Methode" (Munich 1956) 2 vols.
   Mallet's "History of the University of Oxford" Vol I (Oxford 1924)

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1. Migne, Patres Latini LXIV: Grabmann, "Geschichte" Vol. I p. 150 attributes some of this to John of Venice, Patch, op. cit. p. 31, to Boethius. Also cf. Grabmann op. cit. Vol. II, pp. 70-73, E. Gilson, "La Philosophie en moyen âge" (Paris 1944) pp. 139 ff

2. Isaac, op. cit. p. 36 sketches history of copies made of the De Interpretatione from the 9th to the 16th centuries, gives details and references to relative position of logical and other studies in 13th century, pp. 62-85 Isaac Husik, "History of Medieval Jewish Philosophy" (Philadelphia 1958) for the role of Jewish translators

3. Vann, op. cit. p. 5.

4. Migne, PL LXIV. col. 82, A-B, "In Isagogen Porphyrii" i.10

5. Vann, op. cit. considers Boethius declares himself sufficiently in his De Trinitate and in his commentary on the Prior Analytics, which Vann assumes to be genuine, as an Aristotelian realist.

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1. E. Gilson, "Introduction a l'étude de Saint Augustin" (Paris 1929)
   H. Marrou, "Saint Augustin et la fin de la culture antique" (Paris 1938)
   Grabmann, op. cit.

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2. Migne xxx, Contra Epistolam Manichaei c.5: "Ego vero Evangelio non crederem nisi catholicae ecclesiae me commoveret auctoritas"

3. "Quod credunt (patres) credo: quod tenent, teneo; quod docent, doceo; quad praedicant, praedico." (Contra Julianum I.1. c. 5, No. 20.

4. "Solis eis scripturarum libris, qui canonici appellantur didici hunc timorem honoremque deferre, ut nullum auctorem eorum in scribendo aliquid errasse firmissime credam" (Epist. 82 ad Hieronymum, n. 3.

5. "Intellige ut credas, crede ut intelligas" (Sermo 43, c.7.9.) "Alia sunt enim, quae nisi intelligamus, non credimus, et alia aunt quae nisi credamus, non intelligimus; proficit ergo intellectus noster ad intelligenda quae credat, et fides proficit ad credenda, quae intelligat." (Ennaratio in Psalmum 118, sermo 18.3)

6 Grabmann, "Geschichte" I. p. 130

7. Gilson, op. cit. pp. 293 ff

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1. cf. M. Carré, "Realists and Nominalists" (Oxford 1946) ch. 1

2. K. Baeumker, "Die christliche Philosophie des Mittelalters" in Kultur der Gegenwart I, V², p. 365 ff.
J. Hessen, "Die Begründung der Erkenntnis nach dem Hl. Augustinus" (Beiträge zur Geschichte der Philosophie des Mittelalters, Band XIX, Heft 2) (Münster 1916)

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1. J.G. Sikes, "Peter Abailard" (Cambridge 1932)
S.J. Curtis, "A Short History of Philosophy in the Middle Ages" (London 1950), Carre, op. cit., pp. 32-65

2. Grabmann, "Geschichte" II, pp. 199 ff

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1. summaries in:
F.C. Copleston, "A History of Philosophy" (London 1947-53) Vols 2 and 3, Medieval
"Medieval Philosophy" (London 1952) 37-41 Carré. op. cit. pp. 32-65; Curtis, op. cit. pp. 48-69; Sikes, op. cit. pp. 88-113

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1. cf. the works mentioned, and A.C. Crombie, "Augustine to Galileo" (Science in the Middle Ages) (London 1952, 1961) 2 vols. with extensive bibliography
2. J.A. Weisheipl, "The Development of Physical Theory in the Middle Ages" (London 1959)
3. "La Bataille des sept Arts" L. Paetow, text and commentary in Memoirs of the University of California Vol IV, No. 1 (1914)
   H. Denifle, A. Chatelain, "Chartularium Universitatis Parisiensis" Vol. I (Paris 1889)
   Grabmann, "Geistesleben" Vol. III, pp. 245 ff gives the grammatical tradition elsewhere in Europe.
   Charles Thurot, "Extraits de manuscrits divers latins pour servir à l'histoire des doctrines grammaticales au moyen âge" (Paris 1869) pp. 93 ff
4. Thurot, op. cit. passim
   Grabmann, "Geistesleben" Vol. I, pp. 104-141, Vol. III, pp. 243-253
5. Thurot, op. cit. p. 77, 81
6. ibid. pp. 113, 139-46, 204

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1. Grabmann, sources under note 4, preceding page
2. Denifle, op. cit
3. B. Bloch and G. Trager, "Outline of Linguistic Analysis (Baltimore 1942) p. 79
4. cf. L. Hjelmslev, "Principes de Grammaire Generale" (Copenhagen 1928) pp. 3, 15, 268 ff
5. Thurot, op. cit. p. 129
6. ibid. p. 121

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1. Thurot, op. cit. p. 132
2. ibid. pp. 165-67
3. ibid. p. 171
4. ibid. p. 187
5. ibid. pp. 188-191
6. ibid. pp. 176-178
7. Thurot traces the expression from Boethius' commentary on the De Interpretatione and his own De Divisione and in Abelard's logic (op. cit. pp. 148-50

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8. op. cit. p. 53. Cf. Priscian II.574 and pp. 12 ff. above

9. Thurot, op. cit. pp. 217, 358 n.

10. ibid. p. 218

11. loc. cit.

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1. E.g. "Tractatus de modis significandi seu Grammatica Speculativa" ed. F. M. Garcia (Quarrachi 1902). For Aquinas' use of their terminology, cf. pp. 215 ff. below. R.H.Robins, "Ancient and Medieval Grammatical Theory" (London 1951) pp. 69 ff. summarizes and criticizes Thomas of Erfurt's work; Grabmann, "Geistesleben" III gives summary accounts and bibliography.

2. Grammatica Specualtiva ch. 2 , 19
3. ibid I 3
4. ibid II 6
5. Thurot, Robins, and, in an unpublished thesis London 1959), Bursill-Hall discuss the varied kinds of modes different authors required.

6. op. cit. III. 10
7. op. cit. IV. 12

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1. cf. pp. 84f below for Aquinas introduction to his commentary on Aristotle's Posterior Analytics for some of the studies which were considered "logical".

2. Summulae Logicales Petri Hispani, editor I.M.Bochenski (Rome 1947)

3. J. Lukasiewicz, "Aristotle's Syllogistic from the Standpoint of Modern Formal Logic" (Oxford 1951)
I.M.Bochenski, "Ancient Formal Logic" (Amsterdam 1951)
E.A.Moody, "Truth and Consequence in Medieval Logic" (Amsterdam 1953)
H. Scholz, "Geschichte der Logik" (Berlin 1931) rejects the hitherto classic work of Prantl ("Geschichte der Logik im Abendlande") as worthless, either to logic or as a collection of texts.
Grabmann, "Geistesleben" III, pp. 107 ff. compares Hispanus to his contemporaries Labert and Shyreswood and shows their close parallels.

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4. I.M. Bochenski, "Contemporary European Philosophy" (Berkely 1956) Appendix I, pp. 252-262 gives a clear summary
   S.K. Langer, "Introduction to Symbolic Logic" (New York, 2nd revised edition, 1953)
   R. Carnap, "Introduction to Symbolic Logic and Its Applications" (New York 1958)
   A.N. Prior, "Formal Logic" (Oxford 1955) traces development and interrelations of ancient, medieval and modern formal logic

   Among modern scholastic philosophers, logicians P. Boehner "Medieval Logic; 1250-1400" (Manchester 1952) and J.T. Clark, "Conventional and Modern Logic" (Woodstock 1952) find modern formal logic more consonant with the medieval tradition than the traditional presentation; but F.C. Wade defends the traditional view in "Outlines of Formal Logic" (Milwaukee 1955)

5. Lukasiewicz, op. cit. p. 7; Moody, op. cit., p. 27

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1. Summulae Logicales (hereafter, SL) 1.01: "dialectica est ars artium et scientia scientiarum ad omnium methodum principia viam habens."
2. cf. Moody, op. cit. passim and p. 14
3. ibid. pp. 5-6
4. SL 4.01, 6.01 ff
5. SL 6.01
6. SL.6.03

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1. SL 6.03
2. Thurot, op. cit., p. 358 n. gives the history of the term in grammar. cf. p. 131 note 6 below, for Aquinas' understanding of the term
3. dealing with ampliatio, SL 9.3, 9.6 and 9.7
4. Moody, op. cit. pp 21-22

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1. SL 7.20: "omnis dictio significat principaliter suum significatum, ex consequenti, accidentia.", but 7.22: "ex eadem impositione dicitur dictio repraesentare significatum et consignificatum."

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2. SL 7.34
3. SL 7.18 "... casus datur dictioni ad hoc ut ordinatur ad aliam dictionem. Sed ordinatio dictionis ad dictionem es orationis.". cf. SL 7.23
4. below, note 1 to page 166
5. SL 10.01-10.03
6. SL 12.01: "Distributio est multiplicatio termini communis per signum universale facta, ut cum dicitur 'omnis homo currit', iste terminus 'homo' distribuitur sive confunditur pro quolibet suo inferiori per hoc signum 'omnis' et sic est multiplicatio."

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1. SL 12.13
2. 2. M.D. Chenu, "La Théologie au douzième siècle" (Paris 1957) ch. 4, "Grammaire et théologie"; "La Théologie comme science au xiiie siècle" (Paris 1957) ch. 1

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1. "Thomas Aquinas". M. Grabmann, London 1928; "Thomas Aquinas", M.C.D.Arcy, London 1930. Other useful biographies are by Maritain (London 1946), Gilson (Paris 1944), Patterson (London 1933) and Sertillanges (London 1931). F.C. Copleston has a biography, a brief characterisation in "Medieval Philosophy" (London 1952) and more detailed treatment in his "History of Philosophy", Vol. III, (London 1953)
2. This was a permission to lecture independently in the Universities granted by papal authority by the chancellor of each University. The licentiatus then acquired the title of Magister and was normally admitted into the college of University professors, although this acceptance was a separate matter from University approval.

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Note for page 51

1. This is an ultra-realistic position of the Aristotelian type discussed above (p. 40) and involves the same difficulties as Abelard urges against William of Champeaux: if "humanity" is numerically the same in all men, their individuality is due to accidental differences (in this case, Averroes attributed it to the imagination in each, cf. note 2 on page 160 below). By holding that there is one intellect numerically the same in all men, individual men cannot have free will, which presupposes individual choice based on individual knowledge: this would deny human responsibility with all its consequences in Christian revelation, such as Redemption, Salvation, Perdition, etc.

page 52

1. Grabmann, op. cit. supra, p. 47, gives details

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1. In Met. XII, ix, 2566

2. De Potentia, 4.1

3. Summa Theologica, I-II.97.1; In X Libros Ethicorum Expositio I, II. References to the Summa Theologica (abbreviated hereafter as ST) are to be read as follows: there are four sections, the Pars Prima (written I), the Pars Prima Secundae (written I-II) the Pars Secunda Secundae (written II-II) and the Pars Tertia (written III). Each section is divided into Questions; each Question may have several Articles; the Articles are divided into Objections, counterarguments, corpus (the body of the article, usually starting Respondeo dicendum) and then refutation of the Objections. Thus a reference like: I-II.97.1 ad 4 would be read as "Pars Prima Secundae. Question 97, article 1, refutation of fourth objection.) This system is rigidly observed, so that location of references in this huge work is quite easy.

4. In Aristotelis Libros de Caelo et Mundo II.17

5. In Aristotelis Librum De Anima Commentarium, III.iv. 624

6. This is the style of the Summa Theologica explained above: first an objection embodying the precise difficulties held against a position, then favourable arguments. Next an exposition of the thesis held, followed by refutation of the contrary objections in the light of the proofs advanced.

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7. D'Arcy, op. cit. p. 49

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1. Scholastisism, medieval or modern, is far from being a monolithic system or body of doctrines. Thomism today owes its revival to the directions of Leo XIII in 1879, calling for a return to the principles of St. Thomas. He ordered the critical edition of Aquinas' works to be made, and the project is still in progress, the Leonine edition. But modern scholastics of other traditions (Augustinian, Scotist, Suarezian) are also quite active, and "Thomism" itself would have to be subdivided into several currents.

2. Thomas comments on various astronomical systems in the De Coelo et Mundo II.17.451 cited above and concludes: "..illorum tamen suppositiones quas adinvenerunt, non est necessarium esse veras: licet enim, talibus suppositionibus factis, apparentia salvarentur, non tamen oportet dicere has suppositiones esse veras; quia forte secundum aliquem alium modum nondum ab hominibus comprehensum, apparentia circa stellas salvantur." The phrase "saving the appearances" is Plato's: cf. "Science in Antiquity", B. Farrington, Oxford 1947, pp. 147 ff.

3. cf. "L'Aristotélisme et le cartésianisme dans l'Université de Paris au xviie siècle", Feret (Annales de philosophie chrétienne, April 1903; "The World of Copernicus", Angus Armitage, New York 1947, and Weisheipl, op. cit. pp. 31-48, 62-85.

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1. In Aristotelis Librum de Anima Commentarium III.4.630 is a typical statement of the fundamental veracity of sense knowledge and the difference between sense and intellect.

2. ST 1.85.2 for objectivity of thought

3. ST I.50.2

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1. This classification of disciplines lasted from Aristotle to Descartes, and modern science can be characterised by the application of the second degree ofabstraction to the first; the mathematicophysical method.

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2. Something is predicated of many things in several ways: univocally when it applies in exactly the same fashion to all the subjects, as "animal" applies to "horse" and "dog"; equivocally when it applies in a quite different fashion to the subjects, as "dog" of a spaniel or an unsaleable used car; and analogically when it applies to its subjects in a manner partly the same, partly different, as "good" applies to the weather, a book, man, etc. For Aristotle's view and Thomas' comments, cf, In Met II.3.2197; IV. 1.535.7; V.8.879. In X Libros Ethicorum Aristotelis ad Nichomachum Expositio 1.7.95; V.8.975; IX.1.1758. Also ST I.1.13, Summa Contra Gentiles (SCG) I.29-34. Modern comments in H.W. Joseph, "Introduction to Logic" (London 1916) ch. 24 and S. Stebbing, "Modern Introduction to Logic" (London 1930) ch. 14

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1. Aristotle's Physics III: Thomas' Commentary in In Octo Libros Physicorum Aristotelis Expositio III.2

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1. G. Ryle, "The Concept of Mind" (London 1949) p. 15

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1. We do not know things "in themselves" to the extent that we do not know the relations they have to each other distinguishable part of the entire universe. Saying that we know them "primarily according to their presence in our minds" calls attention to two facets of our knowledge:
   (1) individual things are known as instances of universal concepts or members of a class and
   (2) we only 'know' a thing to the extent that we know its relations to other things.

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1. The three principal sources for this doctrine are in SCG II. 46-90, ST I-II.22-48 and in the Quaestiones Disputatae (QD). Also important are the commentaries on the De Anima, De Memoria et Reminiscentia of Aristotle and the De Veritate. (DV)

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2. This statement appears on every occasion the problem is discussed: e.g. ST I.57.2 ad 1; II-II.175.4; SCG I 31; DV I.11

3. ST I-II.79.3

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1. ST I.14.6 ad 1; II-II.174.3; SCG II 97

2. ST I.89.2

3. SCG II.75

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1. Such statements are frequently reiterated: typical is ST I.50.1 ff

2. ST I.14.2 ad 3

3. cf ST I.79.7; 88.1; III.12.1; SCG III.43, 45

4. ST I.44.3 ad 3; I-II.50.5 ad 2; III.9.4

5. ST III.9.4; 12.1; 12.2; SCG. 11.96

6. SCG 1.65

7. In de An. III.13.791 ff is a typical expression of this common doctrine

8. In de An. III.7.717, 718; III.11.762

9. SCG. I.51.55; II 55,59,74,78,98 bis, 99, 101.

10. ST I.54.1 ad 3

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1. ST I.79.8. cf. SCG III.42

2. ST I.62.8. ad 3; I-II.89.4; II-II.180.6 ad 2

3. ST I.50.1

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4. ST I.78.4 ad 4; I.84.2; 110.2 ad 2; I-II.31.5

5. ST I.14.6

6. ST I.62.8 ad 3

7. I.28.1 ad 4

8. ST I.34.1 ad 3

9. SCG I 81

10. SCG II,73,79

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1. B. Lonergan, "Insight" (London, 1958) pp. 7 ff.

2. ST I.79.4 ad 4; II-II.173.2

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1. ST I.50.1 ff; I.75,76; SCG II 62, 68, 73, 80, 81, 90, 91

2. The following development is Lonergan's, op. cit. pp. 361-62, 368-70 et passim

3. ST I.12; I-II.3.8; SCG III 25-63

4. ST I.97.7

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1. ST I.79.2; SCG II,98

2. SCG II 83

3. DV 11.1 ad 3

4. SCG II 87

5. ST I.84.5

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1. ST I.89.5

2. De Natura Verbi Intellectus, Opuscula Philosophica, c.1.277: "Verbum enim nostrum semper est in continuo fieri...sed hoc non est imperfectum, quasi totum simul non existens, sicut est de aliis quae sunt in fieri... sed cum actu intelligitur. continue formatur verbum..."

3. ST II-II.181.3

4. ST I.51.3

5. In De Anima I.4.38; In Peri Hermeneias I.1.9; II.14; IV.39

6. In De An. II.7. lect. 18; In Perih. I.1.9

7. In Perih. I.2

8. In Polit. Arist. I.1.36; Scriptum in IV Libros Sententiarum Petri Lombardi I.8.50 ad 4 (Abbreviated PL hereafter)

9. In Perih. I.2.15; In Polit. I.1

10. In Perih. I.4.46; 6.81

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1. In Perih. I.4.11; 6.81; ST I.91.4

2. PL III.38.1.1, 3

3. De Reginine Principum 742

4. In Librum De Causis I.6.170

5. De Potentia 8.1

6. De Veritate 9.4

7. Opuscula Theologica, De Differentia Verbi humani et divini 287

8. ST III.12.3

9. ST I.107.3 ad 1; I.63.8;

10. In Polit. I.1.36

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11. In Perih. ; cf I-II.1 ss.

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1. ST I-II.20.2 ad 3; Ibid. .71.6; .77.7 etc.
2. ST I-II.24.1
3. ST I-II.49 ss
4. In Met V.1058 - 1061
5. In I Eth. 20.236-39
6. In De An. III.843
7. In De Memoria et Reminiscentia Lect. 6.383
8. ST I-II.71.6; cf. I-II.8, prolog.
9. ST I-II.50.4; In I Eth. 236
10. ST I-II.14.2;
11. ST II-II.47.2 ad 3, I-II.14.2
12. ibid. In III Eth. 471, 472
13. ST I-II. 6 to 17, 66, 76

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1. In VII. Phys. 4.910
2. In II De An. 16.447
3. ibid.
4. Musica L. I, ch. III, 23ss; ch. VIII, 6-10. Tubner. Leipsig 1868, ed, G. Friedlein
5. In II De An. 16.464
6. In De Sensu et Sensato, I.16.232; In II De An. 16.447

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7. In II De An. 16.450

8. ibid. 18.446 ss. According to the context, vox may be translated as "voice", "speech", "utterance","word", "expression" etc., but always retains its fundamental phonetic connotations

9. ibid. 467-469

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1. PH I.4.38. Hissing noises and the like are not denied significance in some circumstances, since anything at all can become a meaningful sign, but they are not properly part of human language as here defined.

2. PH I.1.14

3. PH I.6.80

4. PH I.2.12. The difference between men as 'social' and animals as 'gregarious' has already been noted (cf. p. 69 above, f.n. 3)

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1. PH I.1.17

2. In II De An. 18.469. Thomas makes the soul in animals and men the ultimate cause of vocal sounds because it is considered to be the substantial form, therefore the source of all life and activity as the unifying principle. Being responsible for all the operations of a substance, the form can be known through its operations. Animals are therefore different from brass, which only sounds when struck: thus the enumeration of heart, lungs, throat, stored air and the rest do not account for speech any more than the constitution of brass results in its being sounded. The cause of vocal sounds is intrinsic to men and animals, the cause of sounding brass is extrinsic to it.

3. In V Met. 4.799. It hardly seems necessary to remark that he is wrong on both counts, but it is worth noting that the expression continuum has a technical meaning for him, exemplified in the analysis of water: further division of a continuum does not produce parts varying in kind. For Cosmologists, the term refers to the ultimate constituents of the material world which cannot be further analyzed. Thomas considers air such a continuum. cf, Quaestiones Disputatae De Malo, 2.2; ST I.3.1; I.11.2 ad 2; III.2.4 ad 3; SCG I.20; In V Met.7.852,849,850 et passim. cf pp. 228.229

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4. De sensu et sensato I.16.232
5. ST III.42.4; II-II.68.2
6. PH I.2 et passim
7. PH I.2.18.

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1. PH L.2.18
2. ibid
3. PH I.2.15
4. In Pol I.1.21 "sicut dicitur in secundo De Partibus Animalium"
5. PH I.6.80.81; 4.46
6. ST II-II.85.1 et ad 3
7. ST III.60.4; In I PL 1.4 expos. text.

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1. ST II-II.95.5
2. ST I-II.66.1
3. ST II-II.111.1
4. ST III PL 38.1,3
5. ST I.43.7 ad 2; PH I.2
6. ST II-II.174.3
7. PH I.2.19; I.4.46; I.2.12
8. PH I.2.19
9. PH I.2.19; I.4.46
10. De principiis naturae ad Fratrem Sylvestrum. Cf also the references above on letters as elements. Aquinas does not define dictio explicitly, but notes that Aristotle seems to have invented the term φάσις to mean the partes enunciationis. PH I.8.104
11. De Fallaciis 647, 665 ff. "Juncture" is a modern term to describe features of transition between words or syllables. Aquinas has this in mind in distinguishing qui es from quies
12. op. cit. 675
13. op. cit. 672

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1. De fallaciis 666, 667
2. op. cit. 668
3. De Fallaciis 670
4. op. cit. 669
5. PH I.6.62; I.6.76
6. PH I.6.76

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1. De Fallaciis 656
2. op. cit. 652-655
3. PH I.6.76

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1. PH I.8.104. Priscian uses a similar example (Priscian II.574 cf p. 27 above) and would hold that the one-word reply to a question is a good sentence, even though the basic requirement for a sentence is a noun and verb.
2. PH. I.6.79. cf I.3.35, I.4.45.
3. PH I.5.57

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1. PH I.6.76
2. ST I.31.3

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1. PH I.10.129,130
2. Thus he says in quite general terms, when dealing with the <u>Fallacia figurae dictionis</u> (<u>De Fallaciis</u> 671 ss): "The shape of a word, as it is taken here, is the similarity of one <u>dictio</u> to another... Thus the fallacy deriving from a word's form is a deception, arising from the fact that one word, similar to another, appears to have meaning in the same way (<u>videtur habere eundem modum significandi</u>) while as a matter of fact it does not."
3. De Fallaciis 671
4. PH I.5.55,56

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1. PH I.5.57
2. This is very frequent, e.g. In II Pol. 2.185: "Unde dicendum est quod in uno sensu dicere omnes de eodem quod sit unum, esset bonum, scilicet, secundum quod ly omnes tenetur distributive..."
3. e.g. De Fallaciis 662:
   "Sicut in hoc paralogismo apparet: "quod potest unum solum ferre, plura potest ferre. Sed quod solum unum potest ferre, non potest nisi unum ferre. Ergo quod non potest nisi unum solum ferre, potest plura ferre." Non valet, quia prima est duplex, ex eo quod haec dictio 'solum' potest conjungi cum hac dictione 'potest'..."
4. ST I.39.3
5. PH I.1.6.

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1. cf Hispanus, SL 1.05 for the logicians' selection of noun and verb
2. PH Proemium .2
   In all his treatises, Aquinas insists on the distinction and relative independence of various studies, and assigns the position of the particular study dealt with: eg.
   ST I.7 arg. 1,2 etc. corpus; In Lib. Pol. Proemium; in XIII Met. Proem; Lib II. lect. 7, 2249
3. PH Proem. 1

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4. (1) In Post An. Proem. 1-6
5. (2) PH I.2.14
6. (3) PH I.2.13
7. (4) PH I.2. Linguistic forms, of course, can also be signifiés in the acceptio materialis mentioned above, p.81
8. (5) In Post An. I.1.2
9. (6) In IV Met. 4.574; cf In Post An. I.1.2; De Trin. 6.1 ad 3
10. (7) In Boeth. de Trinitate 5.1.3
11. (8) In II Met 5.335

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1. In Boeth de Trinitate 6.1 ad 3; In I Met 1.32; 3.57
2. In II Met 5.335
3. In Post An I.4.32-34
4. In VI Eth 3.1154 ss, 1496

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5. I Met 1.3
6. That is, the acquiring of an (accidental) form

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1. In Post An. Proem., 1-6

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1. In Post An. I.4 32 ss
2. In VI Met. 1.1145; In Post An. I.44.395 ss
3. In VI Met I.1166; II.7.2264
4. In Pol Proem. 1
5. In II Phys. 15.272-274
6. In Post An. I.41.362
7. In Post An. I.1.10
8. In Post An. I.41
9. In I Phys. 6.42

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1. In Eth I.1.1-2
2. In Post An. I.41.362-366

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1. In II Phys 3.164; In Post An. I.15.132 ss
2. In Post An. I.25.208
3. In II Met. 5.335; ibid, IV.4.574
4. In PH I.1.15; In De Trin 6.1 ad 3
5. In IV Met 4.574
6. SCG IV.70; In II Phys 14.263; In IV Met 1.531, 547
7. PH I.1.13; PH Proem 5
8. In I Met 3.564; SCG IV.70

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1. PH I.7.87
2. So too Apollonius Dyscolus and Priscian: cf Thurot, op. cit. p. 218 ss
3. De Fallaciis 641, 672
4. De Fall. 641
5. In II Eth. 280,281
6. In I PL 27.2.3

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1. In IV PL I.1 Quaestiuncula 5, solutio 1
2. In I PL 21.2. expositio textus
3. persona, In I PL 25.I.1; virtus, In III PL 1.4 sol. 1; habitus, In II PL 24.1.1; facultas, In II PL 24.1.1 ad 2
4. In I PL 22 expos. text.
5. In Post An. II.6.468

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1. In I PL 22.1.1 ad 3. cf In I PL 9.1.4
2. In Post An. I.4.33
3. PH II.2.214
4. In IV PL 3.1.2. ad 6
5. ST III.60.7 Greek prefixes augment or reduplication in tense-formation
6. In Post An. II.16.552
7. De Fallaciis 664

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1. These intentiones rationis are the acts of the mind considered in themselves, the entia rationis which are the formal objects of logic, and they consist in that complex of notional relations or intelligible relationships, which follow upon the being of things which the mind considers. E.g. "The intention of universality, that is, the relation of one and the same thing to many, is due to intellectual abstraction" ST I.85.3 ad 1. So the notions of genus, species and the like, IV Met 4.574
2. In Post An. I.20.171 ss
3. In IV Met lect 6.

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1. This is found summarilly in Post An. II.20, but extensively elsewhere: cf, the references to Thomas' psychology p. 61

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1. cf pp. 55-56 above, and A. Crombie, op. cit. on medieval physics.

Notes

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1. ST I.34.1. The reference to Augustine is to the De Trinitate XV.10, Migne 42.1071

2. In Joannem I,1.1

3. Men and animals are both said to have conceptus which they manifest vocally (PH I.2.12) but in animals they are limited in number and kind, being basically 'emotional' (In I Pol. I.36-37), and while animals other than man may be said to act 'voluntarily' in that they act for a purpose, only men know it precisely as purpose (ST I-II. 6.1 c et ad 1; PH I.14.180); In Pol loc. cit)

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1. An act that is actually or habitually under the control of the will is called an actus humanus, otherwise it is merely an actus hominis (e.g. respiration, involuntary grunt), cf. ST I-II.1.1 ss. Sometimes one type can become the other, as when respiration is deliberately curtailed, or when one speaks in dreams or drunkenness. In II PL V.1.1.

2. In I PL 27.2.1. The reference to John Damascene (died circa 750, Doctor of the Church) is to De Fide Orthodoxa I.13, Migne I.858; to Augustine, De Trinitate IX.10, Migne 8.969

3. In his Commentary on the Sentences of Peter Lombard, written between 1254-1256 (In I PL 26.2.2)

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1. Quaestiones Quodlibetales, IV.5.2, written between 1269-72.

page 104

1. De Potentia 8.1

2. De Causis I.6

page 105

1. In Post An. I.22.184

2. In Joann. I.1

3. De Pot. 9.9

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1. cf. In III PL 26.1.5: "...sensitive operations in us are better known than the operations of the intellect, since our knowledge starts in the senses and terminates in the intellect. And because we come to know the less familiar from the more familiar, and names are imposed on things to bring them to our

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knowledge, the names of sensitive operations are transferred to those of the intellect...insofar as 'seeing' and 'imagining' are alike in sense and intellect, visio and imago are used of both; but insofar as they differ, another name is used of the intellectual operation to distinguish it from the sensitive, such as intelligere and scire and such like..."

2. SCG IV.11; De Pot. 8.1; 9.5. ST I.27.1; 85.2 ad 3 Quodlibetal V.9. In Joann I.1

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1. PH I.1.5

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1. PH I.4.36-43
2. In I Phys. I.10

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1. PH I.4.36
2. PH I.8.95
3. In Post An. I.5.52
4. p. 105 referring to Post An. I.22.184
5. p. 108 referring to In I Phys. I.10
6. ST II-II.181.3

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1. This mediation of concepts is the result of the basic Aristotelian position on abstraction, which is anti-Platonic, and holds that the mode of knowing need not be identical with the mode of reality: abstract vs. concrete. This is how Aquinas comments on Aristotle's statement that words stand for concepts immediately, things mediately: "For it is not possible that they signify things immediately, as is evident from the mode of signification itself: for this noun homo signifies human nature in abstraction from singulars. Thus is it not possible that it signify a singular man immediately; and that is why the Platonists held that it signified the separated idea of man. But since Aristotle does not believe that this really subsists according to its abstraction, but only in the intellect, it was therefore necessary for him to say that words signify intellectual concepts immediately, and things mediately through them." PH. I.2.15

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2. What is simple for one science may be composed for another, and this is the distinction pointed out earlier (p. 86 ~~157~~ ff) that Thomas draws between the material and formal object: "A part of some whole is properly said to be that which immediately pertains to the constitution of the whole, but not to a part of a part; so we must understand this about the parts which constitute the oratio, that is, the nomen and verbum, but not about the parts of the nomen and verbum, syllables and letters." PH I.6.79

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1. "Equiferus" evidently names a breed of horses, and if formally like our word wildlife

2. PH I.4.45-46

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1. PH I.6.79

2. PH I.3.35.

3. PH I.12.162

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1. The classic source for Etymologies in Thomas' time was Isidore of Seville, whose works are found in Migne, 81-84. Thomas' basic position of the relation of etymology to actual signification coincides with his view about the proprietas vocabuli (cf. p. 90-) and signification: from the shape of a word compared to other words, one might expect it to have a similar meaning, but words have meaning by convention only. He takes lapis as a prime example of this:
"..non est semper id a quo imponitur nomen ad significandum, et id ad quod significandum nomen imponitur. Sicut enim substantiam rei ex proprietatibus vel operationibus ejus cognoscimus, ita substantiam rei denominamus quandoque ab aliqua ejus operatione vel proprietate: sicut substantiam lapidis denominamus ab aliqua actione ejus, quia laedit pedem; non tantum hoc nomen impositum est ad significandum hanc actionem, sed substantiam lapidis. Si qua vero sunt quae secundum se sunt nota nobis, ut calor, frigus, albedo et hujusmodi, non ab aliis denominantur. Unde in talibus idem est quod nomen significat et id a quo imponitur ad significandum...
Ad 2m dicenum, quod secundum quod naturam alicujus rei ex proprietatibus et effectibus cognoscere possumus. sic eam nominare possumus et significare..." ST I.13.8. cf ibid., I.13.1ss

cf. Appendix II S. Isidori Etymologiae Libri XX

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2. ST I.13.8 cf I.33.1, II-II.92.1, De Causis I.12

3. E.g. ST II-II.133.2 "ad magnificentiam pertinet facere aliquid magnum, sicut ex ipso nomine apparet"; II-II.57.1, "Jus importat aequalitatem quandam, ut ipsum nomen demonstrat. Dicitur enim vulgariter ea quae adaequantur justificari" II-II.145.4 "honestas dicitur quasi honoris status" II-II. 54.2, "negligentia ad imprudentiam pertinent, ut Isidor dicit, negligens quasi nec eligens dicitur". II-II.129.6, "nomen fiducia a fide videtur assumptum", II-II.46.1, "stultitia a stupore assumptum esse videtur, ut Isidor dicit, 'stultus est qui propter stuporem non movetur'". II-II.81.2, gives three etymologies of religio, from relego, that is frequent reading, or re-eligere, to choose again, or religando binding again, and decides that whatever is chosen, the essential thing implied is a relation to God.

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1. De Divinis Nominibus, IV.9.412-ss

2. Since he restrict himself so closely to the printed or written form, he should have seen it as a problem to explain the orthographic similarity of hirco to the ablative, dativeof hircus, and of equi- to the genitive of equus, since these are found in a nominative form.
He has a partian answer, as will be seen in the subsequent section on Consignification, where he holds that in the cases of the nomina and verba, the signification remains the same, although the consignification changes with the case.

3. cf. p. 48 above SL 10.01 - 10.03

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1. PH I.8.104 cf. p. 27 above, for a similar view in Priscian

2. PH I.10.121; In 1.21 Epess. 7.64; In III PL 26.1.5

3. In IV Met.2.553, V.5. 824; IN I PL 1.4.2; 4.1.1; 22.1.1; 22.1.3; III PL 26.1 ad 3; II PL.9.1.4

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1. Quaestiones Quodlibetales IV.9.2

2. In IV. Met.1.535

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1. ST I.13.5

2. In I PL 22.3 ad 2

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1. In VII Phys. 8.947. The "heavenly bodies" referred to are planets, the "corruptible bodies" earthly ones, like plants, stones, etc. This illustrates the mistakes to which inadequate descriptive techniques can lead: becanse the ancients and medievals lacked such instruments as telescopes, they observed no change whatever in the planets, and concluded that they could not be made of the same material as earthly bodies, in which they saw change as a necessary constituent; planetary matter was the quintessence, the fifth element after air, water, earth and fire.
2. In VII Phys 7.934
3. PH I.10.122
4. PH I.10.123

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1. PH I.10.124
2. ST I.13.4, contra
3. In Div. Nomin. IV.9.412 ss
4. In I PL 22.1.3 ad 2. The distinction of proper and common (universal and singular) terms is based "not absolutely insofar as they exist outside the mind, but insofar as they are compared to a concept", because the only way in which a thing-outside-the-mind could be considered as universal would be on Platonic presuppositions. PH I.10.121
5. cf. p. 110, fn. 1, refers to PH I.2.15

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1. The casus rectus is the nominative, the casus obliqui the other cases.
2. PH I.4.40. Examples and discussion of concrete and abstract nomina are given in ST I.3.3; 13.2; 34.5; 56.1; III.4.2; 14.1. SCG I.81. De Causis I.1, 21. De Ente et Essentia III, IV
3. especially ST I.28 ss., In V Met. 17., X Met. 8, SCG II.11,12

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1. ST I.13.7 ad 1, I PL 30.1.1 Rational relations are those which can be invented, defined and altered by human mental activity, without concern for their verification in natural things. Mathematical systems are of this type. Real relations are those presumed to hold among things whose existence and connections do not depend on human activity. Natural "laws" are of the latter type; they are to be discovered, not invented. Cf. Aquinas' introduction to the Posterior Analytics, pp. 83 ff

2. "...for the truth of knowledge is determined (mensuratur) by the thing known. It is because a thing either does or does not exist that a statement known is true or false, and not the other way around, and the same thing is true of sense and the thing sensed, and therefore 'measure' and 'thing measured' are not said mutually." In V Met.17.1003

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1. In V Met. 17.1027
2. In V Met. 17.1028-29
3. In V.Met. 17.1001 ss

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1. St I-II.7.1
2. ST II-II.57.1 ad 1
3. ST II-II.141.2; 186.1
4. ST III.60.7 ad 3
5. In I PL 10.1.4 ST I.36.1
6. In III PL 5.3. ad 1. cf In Iv Met 4.574, ST I.29.2; 85.3 ad 1 Except in the first text cited, Thomas himself usually speaks of prima and secunda impositio, while his later commentators speak of intentio, e.g. Jean Poinsot (1589-1644), "Joannes a Santo Tomas" in his Ars Logica, translated by F.C. Wade, S.J. as "Outlines of Formal Logic", Milwaukee 1955. p. 36.
   The distinction is discussed in modern terms as "language" vs. "metalanguage", but the two uses are not perfectly parallel.

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1. ST I.31.1 ad 2, "A collective nomen implies two things, namely a plurality of subjects and some sort of order or unity. As "a people" is a multitude of men included within some order."
2. such as injustus, PH II.2.216, where the interest is only logical, since a negation is not the same as a privation: negation merely states the simple absence of something, privation adds the fact that it is absent from a subject which should have it. So "blind" of a stone is simply a negation, in man, a privation.
3. PH I.4.48
4. PH I.5.62, non currit, non laborat.

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5. Since the point of view here is deeply embedded in traditional Metaphysics, its application to a modern problem might tie together some of the Thomastic notions so far seen, and make the nature of the problem, if not its solution, a little clearer.

According to Prof. Martin Ryle's astronomical investigations, as reported in the daily press during the week of February 6th, 1961, our universe started as a single atom which exploded. Considering this primeval atom in terms of substance and accident before it exploded, several possibilities present themselves.

If this primeval atom had been a stable, unanalyzable thing, not containing at least two constituents differing in kind, it would be a simple substance in much the same way as the ancients conceived the planets, and just as unchangeable for the same reasons. But since it exploded, one can assume that there were at least two antagonistic constituents within it, since there was nothing outside to produce the explosion.

Assuming at least two such constituents were necessary, one could ask if there were, as a matter of fact, three; and of the third, whether it was really necessary for the existence and operation of the primeval atom, or whether it was associated with the other two merely as a matter of fact, parasitically, contributing and substracting nothing to the composite. In other words, if the third were missing, could the composite still be univocally identified, would it continue to exist, and would the explosion take place without it; and with it, would nothing whatever be added to or subtracted from the explosion? If so, it is accidental, and the composite of the other two constituents, substantial.

Typical accidents are temporal and spatial coordinates. If the primeval atom were inert, there could be no accident of time, since time is a measure of change, and on this supposition, no change is there to be measured. Similarly with space: since this primeval atom is the unique body, and even the existence of an boserver is excluded, it would be meaningless to discuss an accident of location for it. The only spatial relations possible would be within the atom, and even these would only be rational, that is, they presuppose a rational observer. The same would be true for the accident of size: since there is no other body with which it could be compared, the atom has no size. Only its parts could be compared for magnitude, again presupposing an observer.

There appears to be no way of verifying any of these hypotheses, but even this makes it clearer that the logical category of substance and the modern scientific notion of unit are identical, since both are descriptive, dealing with "the thing as conceived". Defining units or substances enables us to formulate something accurately about the elements in a system or problem to be explained. It is scientific theory, or laws,

which explains questions posed about units in a field of investigation. In metaphysics, the explanatory categories are act, potency and form, not substance, accident, relation and the rest of the Categories, for they explain nothing whatever, but set the terms of the problem into the relationship to be explained.

On the day that Ryle's findings were published, Prof. Bondi, who holds the opposed 'Steady State' theory postulating continuous creation of matter, praised the work, pointed out the margin of error and declared himself more convinced of his own position than ever. The same thing occurs among metaphysicians and for much the same reason. Definition or explanation in terms of act, potency and form is as convincing as the evidence brought forward to sustain it. Form is not a material principle to be described, tested and imagined like scientific units, but an intelligible principle to be understood; it is the explanation which simply imposes itself upon us when the elements are arranged in an intelligible order, but it can be justified, not surprisingly, only insofar as we actually know what we are trying to understand, and this is limited precisely to the extent of our ability to describe what we are trying to understand - that is what is behind Aquinas' notion of the proper arrangement of the phantasm. The first step in both scientific and philosophic explanation is to decide upon units (substances) which are alone relevant to the problem, and those which are not (accidents).

But the big difference between what Aquinas is doing in the quiet of his monastary and what the scientist is doing in his laboratory is, that Aquinas and the medievals were limited to dreaming up suitable arranged images; the scientist today translates the 'suitably arranged image' into a testing machine or situation, adding and subtracting parts under controlled conditions. Their machines are not subject to indigestion, emotional strain and distraction, much less forgetfulness of step A. But when all the tests have been made, questions still remain for the thinking scientist, not testable by his method. This is called 'speculation', and the word is pejorative or not, depending on your non-scientific presupposits. What the philosopher wants is 'ultimate' explanation, and 'ultimate' will always mean going beyond the empirically established.

6. A <u>supposit</u> is a thing considered as a principle of activity. Since human activities differ importantly from others, the human supposit is called a <u>person</u>, animals and inanimate things, just <u>supposits</u>. <u>Suppositum</u> differs from nature or essence in things composed of matter and form (I.3.3 ad 2; III.2.2.) and it is signified as a totality or unity having a nature as its formal and perfective part (ST.III.2.2.) This is how Aquinas takes the disputed definition of the nomen as signifying "<u>substantia cum qualitate</u>" (cf. Thurot op. cit. 163, ff; Brøndal <u>Parties du Discours</u> pp. 32 ff): "..significare substantiam cum qualitate est significare suppositum cum natura vel forma determinata in qua subsistit". ST I.13.1 ad 3

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1. Post An. I.2.17.

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1. ST I.39.5 ad 5. cf pp. 46f on suppositio
2. ST I.39.3; 36.4 ad 7. In I PL 9.1.2; 23.1.4. De Potentia 75
3. PH I.1.6. cf ST I.39.8, "quaelibet res demonstrabilis grammatice loquendo, persona dici potest".
4. PH I.4.48
5. SCG IV.34.
6. ibid.

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1. ST III.3.2 ad 1
2. ST I.39.8 ad finem
3. ST III.78.5 In I Corinth. cap. XI, Lect. 5.666
4. ST III.16.11 ad 3
5. In III PL 12.1.1.
6. PH I.4.51
7. PH I.4.50
8. De Fallaciis 654. cf p. 48 above, Note 3
9. PH I.4.50; II.1.209
10. PH I.4.50

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1. Sapiens, the wise man, hence, philosopher, ST I.1.6 arg 1 65.3 arg 1; I-II.102.1 and repeatedly elsewhere
2. ST I.1.6 corpus et ad 3; 79.10 ad 3
3. ST I-II.7. ad 1 "sapientium et meliorum est principari et praeesse".
4. ST I-II.100.7
5. pp. 21.22
6. PH I.4.49. cf Priscian, V (col. 669 op. cit): "Casus est declinatio nominis, vel aliarum casualium dictionum, quae fit maxime in fine, Nominativus tamen sive rectus, velut quibusdam placet, quod a generali nomine in specialia cadat, casus appellatur, ut stylum quoque manu cadentem, rectum cecidisse possumus dicere..."

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1. ST I.41.2; In I PL 33.1.2

2. "To understand this, it should be noticed that things are commonly named from their forms, like album from albedine and homo from humanitas, so that every thing that is named from something else has at least to this extent a relationship of form. So if I say iste est indutus vestimento, the ablative is construed in the relationship of formal cause, even though it is not the form. And it happens that something can be named from that which proceeds from it, not only as agent by action, but also the term of the action itself, which is an effect, when that effect is itself included in the concept of action. For we say that ignis est calefaciens calefactione, even though calefaction is not heat, which is the form of fire, but an action proceeding from fire; and we say arbor est florens floribus, even though blossoms are not the form of the tree, but rather certain effects proceeding from it." ST I.37.2

3. ST I.39.2

4. ibid ad 4

5. In II ad Romanos lect 3.220

6. PH I.7.85

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1. Priscian distinguished parts of speech through their <u>proprietas significationis</u>, and discusses their accidents. Helias distinguishes word-classes through their different <u>modes of signification</u> and discusses the accidents, as well as the <u>consignification</u> of the verb's tense. The later Modistae discussed all differences in meaning, between and within word-classes in terms of various kinds of modes. cf. pp 43, 48 above

2. Hispanus speaks of signification (SL 5.45, 6.01, 10.01, 11.04) consignification (SL 7.13, 7.22, 11.08, 11.14, 11.20) principal signification (SL 11.21) and mode of signification (SL 1.28, 1.31ss) Aquinas follows his usage.

3. SL 1.05: "Et sciendum quod dialecticus solum ponit duas partes orationis, scilicet nomen et verbum, alias autem appellat <u>syncategoremata</u> et consignificantia; et dicitur a "syn" quod est "con" et "categorema", quod est "significans", quasi "consignificativa".

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1. "...est modus determinatio adjacens rei" De propositionibus modalibus, .719
2. "...modus autem, sive determinatio subjecti secundum esse accidentale, tripliciter accipi potest..." ST I-II.49.2
3. In I PL 22.2
4. In Post An I.42.376-77. "...manifestum enim est quod sensus cognoscit aliquid tale, sed non hoc..."
5. In IV Met. 7.615
6. De Anima I.1.10,15; De Ente et Essentia I.1.2; III.2 In Post An II.2.419; 5.458; 8.484,485; In VII Met. 9.1460; 12.1537; 17.1658 etc. etc.
7. In I PL 4.1.2; 22.1.1; 34.1.2; IV PL 38.2.3

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1. In VII Met 17.1658
2. ST I.13.9 ad 2
3. PH I.5.55-56

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1. PH I.5.58
2. PH I.4.42

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1. In I PL 18.1.2
2. De Fallaciis .651
3. Quaestiones Quodlibetales IV.9.2

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1. In I PL 1.1.1; 9.1.1; cf p 144 note 2 for text
2. ST III.17.1
3. ST. I.31.2 ad 4
4. ST I.30.4

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1. PH 1.5.54, 59; 8.98.
   cf page 48 above for Hispanus on consignificatio ex consequenti.
2. PH I.5.69-73 for this whole question. "Composition" is the general term used in the De Interpretatione for an affirmative judgement, and "Division" for a negative. The difference between the function of est and other verbs in this is that there is no determinatus nominativus in the verb esse, while there is in the others. cf. p 148 below

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1. SCG I.30. cf De Divinis Nominibus I.4; In I PL 25.1.4, 25.1.2; 9.1.1
2. In I PL 9.1.1; "alius et aliud nonnisi modo significandi differunt, nam alius masculine et aliud neutraliter significat; cum igitur modus significandi non mutat significationem..."
3. In I PL IX.1.2: "Substantiva significant per modum substantiae, ideo rem suam absolute...adjectiva per modum accidentis, quod non habet esse absolutum nec unitatem..."
4. ST I.39.5: "...adveritatem locutionum, non solum oportet considerare res significatas, sed etiam modum significandi... Licet autem secundum rem, sit idem DEUS quod DEITAS, non tamen est idem modus significandi utrobique. Nam hoc nomen DEUS quia significat divinam essentiam ut in habente, ex modo suae significationis naturaliter habet quod possit supponere pro persona...Sed hoc nomen ESSENTIA non habet ex suo modo significationis quod supponat pro persona, quia significat essentiam ut formam abstractam..." and the same would be true for DEITAS
5. PH I.5.54

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1. ST II-II.211
2. ibid 27.2
3. ibid.27.6
4. ibid.30.30
5. ST II-II.35.1, and frequently elsewhere
6. In I Met I.158

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1. I PH 1.2.14

2. PH I.1.5; 4.42; 5.53,58,61,63. II2.214

3. PH I.5.63

4. PH I.5.55, 59, 60; 7.96. II.1.206

5. PH I.5.56,57

6. PH I.5.54,59; 8.96

7. PH I.5.53,54

8. PH I.5.54ss; 8.96

9. PH I.3.34

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1. PH I.3.34; 5,54; 5.59,60; I.3.26

2. PH I.3.34; 8.104. In IV PL 3.1.2
   tonat and pluit are called verba exceptae actionis.
   cf. Priscian, XVII. 1043

3. PH I.5.61,62. II.1.209

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1. PH II.1.209

2. PH 1.3.33,34

3. PH I.5.69

4. PH I.8.104, quoted on page 122

5. cf preceding page and PH II.1.209 for the reduction of the verbum indefinitum as a dictio to the negative in a proposition. The reason seems to be that the negative with the verbum makes the proposition negative, not just the verbum, while the indefinite non homo as subject term can still be distinguished from homo in a positive or negative proposition.

6. PH I.5.69

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1. PH I.5.66
2. PH I.5.67,68
3. PH I.5.53
4. PH I.5.64; 13.166

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1. PH II.1.209. cf In I PL 8.2.1
2. ST III.71.3
3. PH I.8.86
4. PH I.5.65

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1. ST I.37.1 ad 2. cf I.14.2; 18.3 ad 1.

1a. cf ST I.36.3, quoted on pages 155-156

2. In I PL 34.1.2
3. In III PL 7.3.1
4. In Ev. Joann I.1

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1. In I PL 11.1.4
2. PH 1.5.56
3. PH I.1.6
4. PH I.4.47
5. ST III.24.1 ad 3
6. ST III.78.1 ad 1
7. In IV PL 8.2.1 solutio 4

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1. PH I.8.104 cf pp 160-161

2. PH I.1.6. cf pp 79 ff supra

3. PH I.1.6; 6.77-79 The "binding elements", like the nails in a ship, is a favorite classical allusion to the ship in which Theseus returned safely from Crete, after killing the Minotaur. To signal his victory, he was to have shown a white or scarlet sail on his return, but forgot to do so in his excitement, and his father Aegeus plunged from a cliff into the sea in despair. Plutarch records that his ship was preserved by the Athenians until the 4th century:BC: "At intervals they removed the old timbers and replaced them with sound ones, so that the ship became a classic example for the philosophers of the disputed questions of growth and change, some of them arguing that it remained the same, and others that it was a different vessel." "The Rise and Fall of Athens: Nine Greek Lives/" tr. Scott-Kilvert, Penguin Classics, 1960, pp.13-41, esp. pp 22-29

4. PH Proem .3

5. ibid.

6. PH I.5.70

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1. In I PL 5.2.1; also dist 35

2. ibid. ST III.32.2

3. ST I.45.1 ad 3

4. In I PL 5.2.1

5. cf p. 136

6. In I PL expos. text. 25

7. In I Post An 10.83

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1. ST I.36.3. In I PL 12.1.3. "Ballivus" = bailiff, official

2. In I PL 32.1.1; 32.2.1. ST I-II.57.1

3. IN I PL 34.1.2, 36.1.3; IV PL 9.1.2. ST I.39.8

4. ST I.93.1; 93.5 ad 4; III.58.3. In I PL 5.3. exposit. text.

5. ST I-II.1.1 arg 1; 2.6 ad 1; 70.1 ad 2. II-II.27.3

6. ST III.78.2 ad 5

7. De Fallaciis .657: "...quia oratio per compositionem partium constituitur, et ipsae partes se habent ad orationem sicut materia, compositio autem sicut forma; ubi ergo sunt eaedem partes sed non eadem compositio, est oratio eadem multiplex potentialiter et materialiter, sed non formaliter et actualiter."

8. In I Ad Rom. lect. 4.53

9. ST III.57.2

10. ST III.58.3

11. ST I.60.4 ad 2, II-II.26.11 ad 4

12. ST I.14.6 ad 1

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1. ST III.80.3. ad 2

2. In Ad Titum II.2, lect I.52 (taken almost literally from Aristotle's "Rhetoric" II.13)

3. In III PL 8.1.4

4. ST I.12.6 ad 1. cf preceding page for sicut as conjunction.

5. In I.Pol. 1.36

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1. "Oratio autem est vox significativa, cujus partium aliquid significativum est separatim, ut dictio, non ut affirmatio." PH I.4

2. PH I.6.75

3. PH I.4.44; 6.76; 8.91,96

4. PH I.6.76: "Secundo autem ponit, id, in quo differt oratio a nomine et verbo, cum didit: Cujus partium aliquid significativum est separatim. Supra enim dictum est quod pars nominis non significat aliquid per se separatum, sed solum quod est conjunctum ex duabus partibus. Signanter autem non dicit: Cujus pars est significativa aliquid separata, sed cujus aliquid partium est significativum, propter negationes et alia syncategoremata, quae secundum se non significant aliquid absolutum sed solum habitudinem unius ad alium...Quasi dicat: pars orationis est significativa, sicut dictio significat, puta nomen vel verbum, non sicut affirmatio, quae componitur ex nomine et verbo..."

5. PH I.4.44; 6.76

6. PH I.6.76-78

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1. PH I.6.77

2. PH I.6.77

3. PH I.7.85

4. PH I.7.85. That is, it satisfies the intellect in the second type of intellectual act, not the first, the understanding of a simple term.

5. PH I.7.85

6. PH I.1.6

7. Oratio enunciativa, imperativa, interrogativa, vocativa and deprecativa

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8. PH I.7.85

9. PH I.7.86

10. PH I.7.87

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1. PH I.6.80-81. cf I.4.46, ST I-II.94.1; SCG I.58: In III De Anima 11.751

2. PH I.6.80, in which he refers to the proof offered by Aristotle and discussed by him, that intellect is different from sense in lacking any bodily organ upon which it depends intrinsically, yet like the senses in being proportioned to its objects, (In III De Anima lect. 7.672-690.) It was this text, in which Aristotle said the intellect was "separate" from the body, that was the point of departure for the Averroistic doctrine that the possible intellect (i.e. the intellect considered as capable of knowing all things, not as actually knowing them) was one for all men. Aquinas explained "separate" meant only lacking a bodily organ, not "separate" like Plato's Ideas (689-699)

3. The English "proposition", "judgement", "assertion", "predication" and so on are variously expressed in the Latin of Aquinas. In his logical writings, propositio is more often used of the major and minor premisses of a syllogism, elsewhere it has the general meaning of statements that are true or false, hence judgements. Although every propositio is an oratio perfecta, not ever oratio perfecta need be a statement. Oratio alone usually means oratio perfecta, although it can also be used of an oratio imperfecta. Only the oratio enunciativa means something that can be true or false, and this is synonomous with interpretatio or enunciatio (PH Proem. .3). An affirmation (affirmatio) is also called compositio; a negation (negatio) is called divisio, and either can be called a judicium.

4. PH I.7.83; 8.93, 108

5. ST I.16.8 ad 3. PH I.7.84

6. PH I.1.6

7. PH I.1.6; 8.95,96

8. PH II.1.209

9. ibid.

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1. PH I.12.160

2. PH I.8.100-103

3. PH I.8.98-103

4. PH I.8.104

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1. cf p. 156, referring to the problems about Christus, secundum quod homo. In such statements, the homo evidently restricts Christus and vice versa, and the relationships of both to the verb or predicate are likewise affected, not grammatically, but as far as the possible true statements which can be made about such a subject are concerned. It would therefore be possible to examine the expressions expected to follow upon, or excluded by Christus, secundum quod homo in certain writers. cf J/R/Firth, "Papers in Linguistics" (London 1957), pp 190-215 for the modern notion of collocation.

2. PH I.8.90; 9.110; 13.165. II.1.210

3. PH Proem, I.8.96

4. PH I.8.96

5. PH I.10.125,131,133; 13.165

6. PH I.10.119

7. PH I.10.120-121

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1. PH II.2.215-216. II.2.212, 214

2. PH I.13.166-169

3. PH I.13.166

4. PH I.1.8; 8.96

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1. De Propositionibus Modalibus 719
2. ibid .720: However., *Socrates currit* would be a *propositio de re*, and *Socratem currere est verum* a *propositio de dicto*, as explained below.
3. De Propositionibus Modalibus 722

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1. De Propositionibus Modalibus .723
2. PH I.13.166. cf. p 163
3. De Propositionibus Modalibus .724
4. ibid. .723
5. cf. pp. 134-135

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1. cf pp 45-49 and Summulae Logicales Petri Hispani, ed Bochenski, Rome 1947. The following are some of the pertinent passages:

Tractatus IX, De Ampliationibus:

9.1 Personalis suppositio est acceptio termini communis pro suis inferioribus; cujus alia est determinata alia confusa, ut prius patuit. Item, personalis suppositionis alia est divisio, nam alia restricta, alia ampliata. Et ideo restrictio et ampliatio habent fieri circa personalem suppositionem.

9.2 Restrictio est coarctatio termini communis a majore suppositione ad minorem, ut cum dicitur "homo albus currit", hoc adjectivum "albus" restringit "hominem" ad supponendum pro albis. Ampliatio est extensio termini communis a minore suppositione ad majorem, ut cum dicitur "homo potest esse Antichristus", iste terminus "homo" non solum supponit pro eis qui sunt, sed etiam pro eis qui erunt. Unde ampliatur ad futuros. Dico autem "termini communis" quia terminus discretus non restringitur nec ampliatur.

9.3 Ampliationum alia fit per verbum, ut per hoc verbum "potest" ut "homo potest esse Antichristus"; alia per nomen, ut "hominem esse Antichristum est possibile"; alia per participium, ut "homo est potens esse Antichristus"; alia per adverbium, ut "homo necessario est animal". "Homo" enim ampliatur non solum pro praesenti tempore, sed etiam pro futuro. Et ideo sequitur alia divisio ampliationis: ampliationum alia est respectu suppositorum, ut "homo potest esse Antichristus", alia est respectu temporis, ut "homo necessario est animal", ut dictum est

9.6 De ampliatione quae fit ratione suppositorum. talis datur regula: terminus communis supponens vel apponens verbo habenti vim ampliandi a se vel ab alio ampliatur ad ea quae possunt esse sub forma termini supponentis, ut "homo potest esse albus"; iste terminus "homo" non solum supponit pro praesentibus, sed et amlialtur ad omnes qui erunt. Dico autem "a se", quia hoc verbum "potest" de se habet naturam ampliandi. Dico autem "ab alio" quia hoc participium "potens" et hoc nomen "possibile" dant virtutem verbo, cui adjunguntur, ampliandi, ut "homo est potens esse animal" vel "hominem esse animal est possibile".

9.7 De ampliatione autem quae fit ratione temporis, talis datur regula: terminus communis, supponens vel apponens verbo, habenti vim ampliandi quoad tempus, supponit pro his qui sunt et qui erunt, ut "homo necessario est animal"; hic tam "homo" quam "animal" tenetur pro his qui sunt et qui semper erunt...

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Tractatus XI. De Restrictionibus

11.01 Dicto de ampliationibus et appelationibus, dicemdum de restrictionibus. Restrictio est coarctatio termini communis a majore suppositione ad minorem ut dictum est prius.

11.02 Restrictionum alia fit per nomen, ut cum dicitur "homo albus", iste terminus "homo" non supponit pro nigris, nec pro medio colore coloratis, sed restringitur ad albos: alia fit per verbum, ut cum dicitur "homo currit", iste terminus "homo" supponit vel restringitur pro praesentibus. Alia fit per participium, ut "homo currens disputat"; iste terminus "homo" restringitur ad currentes; alia fit per implicationem, ut cum dicitur "homo, qui est albus, currit", haec implicatio "qui est albus" restringit homines ad albos.

11.04 De restrictione facta per nomen communiter sumptum talis datur regula: omne nomen non diminuens nec habens vim ampliandi, junctum ex parte eadem termino communi, magis restringit ad suppondendum pro eis, ad quae exigit sua significatio, ut patet in exemolis supradictis...

11.05 Sciendum autem, quod minus commune restringit magis commune, ut cum dicitur "homo albus", quia "homo" reperitur in hominibus albis et nigris et medio colore coloratis, "albus" autem non...hoc quod est albus, reperitur in hominibus et in brutis et lapidibus, et sic "albus" est magis commune, et "homo" minus commune, et sic "homo" restringit "album" ad albedinem existentem in hominibus; et sic utrumque coarctat aliud secundum diversa.

11.07 Ex praedictis sequitur alia regula, quae est talis: nihil positum a parte praedicati potest restringere terminum communem positum ex parte subjecti quoad principalem significationem...

11.08 Dico autem "quoad principalem significationem" quia praedicatum restringit subjectum quoad significationem, ut cum dicitur "omnis cignus est albus", ist terminus "cignus" restringitur ad mares et non ad feminas. et sic "albus" restringit subjectum quoad consignificationem quae est genus et non quoad principalem significationem.

11.09 Item, de restrictione facta per implicationem, talis datur regula: omnis implicatio immediate adjuncta termino communi restringit ipsum. sicut et suum adjectivum...

11.21 ..."esse" non restringit ad existentes, sicut nec hoc verbum "currit" ad currentes, quia nullum verbum restringit terminum sibi supponentem quoad propriam significationem, sed quoad consignificationem, quae est tempus. Unde non restringit ad supposita existentia, sed ad praesentia...

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11.23 Solet autem poni quod restrictio fiat ab usu, ut cum dicitur "nihil est in arca", quamvis sit plena aere, quia iste terminus "nihil" supponit pro rebus solidis et firmis. Et "rex venit" pro rege patriae. et "magister legit" pro magistro proprio. Solet etiam poni quod sit restrictio per transitionem verbi, ut cum dicitur "Socrates pascit hominem" iste terminus "hominem" supponit pro alio a Socrate virtute transitionis illius verbi, quia dans et recipiens sunt per se diversa...

2. SL 9.2. "Interpretation" is a term from modern logic as used here, and is not to be confused with interpretatio as the act or expression of a judgement about what is true or false as used by Aquinas. Suppositio is also translated as "supposition" or "standing for", "taking the place of", or "applied to".

3. SL 9.2; 11.01

4. SL 9.1

5. SL 6.03.

6. SL 9.3

7. SL 11.02

8. SL 11.09

9. cf preceding pages

10. SL 9.3-7

11. ST I.25.5 ad 2

12. In III PL 7.3.1

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1. In I Ad Rom. III.52. The same ideas are repeated in ST III.24. 1 ad 3, In III PL 7.3.4

2. ST I.14.13 ad 2

3. ST I.39.4 arg 2: Praeterea, terminus in subjecto positus non restingitur per terminum in praedicato positum ratione significationis; sed solum ratione temporis consignificati.." SL 11.07, 11.21

4. In III PL 7.3.1, 7.3.4

5. ST II-II.60.1

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1. ST II-II.118.2

2. ST II-II.141.2

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3. ST II-II.186.1
4. ST I.29.2 ad 1
5. SL 11.05
6. cf pp.
7. ST I.3.2,3; 13.9; 14.11; 29.3 ad 4; 54.3 ad 2; 56.1 ad 2; 86.3; 75.4; 76.2 ad 3; 85.1. I-II.63.1. III.2.3 ad 3; 6.1 ad 2; 77.2. SCG I.21,42,44; II.49,50,75,82,92,100; IV.10,40,63,65. De Ente et Essentia, passim
8. PH I.8.96; 10.127, 140
9. PH I.8.97
10. PH I.6.74 ff

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1. SL 6.03
2. ibid.

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1. cf pp. 76-77
2. SL 11.04

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1. cf pp. 167-168
2. cf pp. 71-73 for Aquinas' view; "word" here is the institutionalized word, as separated in writing

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1. PH I.1.6; 6.76

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1. cf. pp 68-70 and note 3 to page 101
2. cf. p. 159
3. cf. p. 102
4. PH I.3.29. ST I.16.1; 21.2; 85.7; II-II.109.1; 110.2. SCG I.59,62. De Veritate I.8 et passim. In I PL 19.5.1; In II PL 28.5 etc
5. PH I.9 and passim. This is merely the basic statement, since it is not just the existence of the subject that is affirmed, but the inherence of the predicate in the subject as each is defined, for categoric propositions, and other qualifications must be made for other sorts of propositions. but what remains basic is the affirmation of some nexus

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6. 7 - cf. sources under note 4
8. In II Phys I.145
9. Proem In Pol. In II Phys 4.173, 272, 274. PH I.4.40, 49, 11.150
10. ibid.

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1. PH I.7.84. In V Met 4.1223-1244
2. In Boeth. de Trin. 15 ad 1
3. PH I.13, 14, 15
4. ST I.1.1
5. PH I.15
6. e.g., First Cause and second causes, proximate and remote causes, causes per se and per accidens (with many subdivisions) full and partial causes, causes that can be impeded and those that cannot, actual and potential causes, particular and universal causes, simple and composite causes, etc. etc. Aquinas' views are found chiefly in the Liber de Causis, and in his commentaries on Aristotle's Metaphysics (especially Books I and IV) and Physics (especially Books I and II)
7. In II Phys 10.240. In I Met 4.71; V Met. 3.777, 782, 2.763-772
8. De Causis I.1.10 ff. In V Met 1.749, 6.827
9. In I Phys 1.5, II Phys 10.240. In VI Met 17.1675-1680 In V Met V.750

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1. In VII Met 17.1675-1680. In VII Phys 5.917
2. In VII Met 5.917 and sources in note 1
3. In V Met I.750
4. In II Phys 5.178
5. ibid 5.183
6. ibid 5.180
7. ibid 5.181
8. ibid 5.186
9. ibid 5.179, cf De Ente et Essentia I.2 and VII Met
10. In II Met 4.320
11. In V Met 2.764

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1. In II Phys 11.242. In V Met 2.775
2. In VII Met 7.1417-35, 8.1438-1442
3. In VII Met 3.1709-1711, VII Met 1.1687
4. In XI Met 12.2381 cf X Met
5. In XI Met 12.2381

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1. In II Phys 11.242
2. cf note 7 on p. 168 for sources
3. In II Phys 11.242
4. In II Met 3.305-315
5. In II Met 4.316-319
6. In II Met 4. 320-330
7. In II Met 3.301-315
8. ST I.46.1 and ad 6, In XII Met 5.2498
9. In II Met 3.303,4 V Met 14.955, XII Met 6.2517

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1. In Post An I.42.376 ff
2. Creation is treated in the first questions of the Summa Theologica, Commentary on the Sentences and Summa Contra Gentiles

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1. In the Summa Theologica. for instance, God's absolute perfection is developed to show his self-subsistence, lack of any composition, which would imply potency, capacity for change, which involves either loss of perfection or the addition of perfection, his eternity, being outside time, which is a measure of change. In terms of act and potency, God is said to be pure act; in Him there is consequently no composition of matter and form (I.3.2), essence and existence (I.3.5) substance or accident (I.3.6). Hence He is utterly simple (I.3.7), immutable (I.9.2) eternal (I.10.1-6) and the source of all perfections. such as knowledge and self-determination, found in natural things (I.4.2)
2. ST I.45.1 ss

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1. ST II-II.110.1. Cf ibid 69.1; 70.4; 89.1; 93.1; 124.5 ad 2

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1. ST I.14.6. In I PL 35.3. SCG I.50. De Pot. 6.1. De Veritate 2.4. De Causis lect 10

   This is important for Aquinas' idea that concepts are not true or false in themselves, and is linked to the notion of revision of knowledge and increase in knowledge through experience and being taught. If "true knowledge" is equated with knowledge that cannot be revised because it is complete and unalterable, then Aquinas would say that this can only be said of God's knowledge, since He is the source of it. Man is essentially changeable, his knowledge is discursive, therefore by definition always incomplete and therefore always subject to revision without the implication that he repudiates past knowledge as necessarily false, but only inadequate compared to new knowledge

2. In I Ad Cor 14. 1.814, 831
3. In Post An I.2.17
4. ST II-II.1.1

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1. SCG IV.13
2. SCG II.75. De Ver 11.1 ad 2,3,4
3. II.565
4. In Post An I.4.33
5. In Post An I.2.13-21

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1. ST I.79.13
2. ST I-II.49.2 ad 3
3. In I PL 10.1.4
4. ST II-II.1.9 ad 5
5. In VII Phys 5.915
6. In II PL 24.1.1
7. In II PL 24.1.1 ad 2
8. In I PL 25.1.4 expos text
9. In I PL 25.1.1. Aquinas noted elsewhere that it is also a technical expression in Grammar

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1. ST I.39.3 ad 3
2. ST III.60.7
3. secundum proprietatem vocabuli. cf p. 90
4. servet sententiam
5. mutet autem modum loquendi secundum proprietatem linguae in quam transfert
6. Contra Errores Graecorum 1029, 1030.
He applies this principle in the light of modes of signification, consignification, etc. throughout the work. Eg. 1039: Hoc autem nomen Deus, quia significat essentiam communem per modum concreti (significat enim habentem Deitatem) potest supponere ex suo modo significationis pro persona; et ideo etiam hujusmodi locutiones convenienter conceduntur: Deus generat Deum, Deus nascitur vel procedit a Deo.
Hoc autem nomen essentia et Divinitas, et quaecumque in abstracto significantur, non habent ex suae modo significationis quod significent neque supponant pro persona. Et ideo non proprie ea quae sunt propria personarum de hujusmodi nominibus praedicentur, ut dicatur essentia generans vel genita...
1040: Sed licet modus significandi diversus sit cum dicitur Deus est Deitas, tamen res est penitus eadem; et ideo propter rei identitatem, sicut unum de altero praedicatur. ut cum dicitur , Deus est Deitas, vel persona divina sive Pater est divina essentia....

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1. SCG 33
2. In I PL 26.1.1; ST I.29.2 ad 3
3. In IV Met 7.618
4. In XII Heb 2.681
5. In Post An. I.4.33, ST III.3.7 ad 2

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1. In I Phys 4.26
2. PH I.7.83
3. Especially fallacy of composition and division Cf De Fallaciis, 662 ss.
4. De Fallaciis 664
5. ST III.60.7
6. SCG I.42
7. ST II-II.141.2; 186.1

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8. In I PL 21.2 expos. text. This clearly alludes to the typical medieval etymological thought

9. In Post An II.16.552 ss

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1. In IV Met 7.611

2. In IV Phys 506 ss. In Post An I.1,2 etc.

3. In Post An II.6.467-468, 461

4. In I PL 25, quoted from Hilary's De Trinitate, c. 4
Cf. In I PL.27.2.2: "We should use words as ordinary people do, but judge about facts as philosophers..."Since once the facts are clear, it is foolish to argue about words..."
Also De Divinis Nominibus 4.9.412-415, which says that when the meaning is clear, almost any word will serve to communicate it, and although one should always choose the more common and clearer expression, such choice should never be a matter merely of words

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1. In Pol I.1.36-37

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1. De Regimine Principum ad Regem Cypri 740-743

2. In Pol I.1.22-23

3. In VIII Eth 1657, 1665-1671

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1. In I ad Cor 14. 1.831. In this same place it is interesting to note that a person who understands only a single language, his own, is termed idiota (ibid. 4.860)

2. De Veritate 9.4 ad 10

3. In VIII Pol 1.1270

4. In VIII Pol 1.1278: "...puta eas quae fiunt per disciplinam audiendo ab alio, quod non fit nisi per sermonem significativum, cujus significationem et rationem modi significandi, simul autem autem et ordinationem convenientem docet praedicta scientia."

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1. Thurot, op. cit., pp. 123 ss
2. cf. pp. 83 ff for Aquinas' distinction between arts and science and their foundations.
3. This seems to be the method of argument employed by those who have held that certain languages, e.g. Vietnamese, "have no grammar": taking the Greco-latin grammar they know as the only concept of grammar in this way amounts to saying that Vietnamese does not have the grammar of Latin or Greek

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1. In Post An. II.6.461 ss
2. cf. pp. 186-1 and references
3. ibid. and In IV Met 7.618

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1. Grabmann, "Mittelalterliches Geistesleben" Bd. II, pp. 118 ss for the authorship; the text, Grammatica Speculativa, Duns Scotus (Quarrachi 1902)
2. cf. C. Harris, "The Philosophy of Duns Scotus" (Oxford, 1927), E. Longpré, "La Philosophie du B. Duns Scot" (Paris 1924), B. Jansen, "Beiträge zur geschichtlichen Entwicklung der Distinctio formalis" (Zeitschrift für katholische Theologie, 53 1928, B. Lonergan, S.J., "Insight", (london 1958) and "The concept of Verbum in the Writings of St. Thomas Aquinas" (Theological Studies, Woodstock, Maryland) VII (1946), VII (1947) X (1949)

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1. e.g., English "What are you waiting for?" in my experience, has been analyzed as "really": "You are waiting for what", as a proposition with "you" as subject, "are waiting" as the verb, and "for what" as indirect object of the verb.

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1. cf. pp. 83 ss for this distinction

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1. PH 1.5.56

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1. e.g. F. R. Palmer, "Linguistic Hierarchy", in Lingua, VII.3 (1958), pp. 225-241

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1. Leonard Bloomfield, "Language" (New York 1933), esp. Ch. 9
2. These terms have a vast literature, and will be briefly summarized in the Introduction to the section on Aquinas' Relevance to Modern Linguistics
3. Louis Hjelmslev, "Prolegomena to a Theory of Language" (Baltimore 1953) p. 8 and passim

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1. Such exceptions are not necessarily denied, but considered insignificant, and this is an interesting comment on the notion of scientific method, well documented by J. B. Conant in his "On Understanding Science" (Mentor Books, Oxford University Press, 1956). He concludes that a few facts never bother anyone with a good theory they will not fit: only a better theory overthrows a good theory. Lavoissier based his theory of combustion on facts taken from Priestly's experiments; Priestly combatted Lavoissier's theory on facts taken from the latter's work. Due to technical difficulties in the analysis of gases, neither could disprove the other's theory conclusively, but neither were bothered by the fact.
2. In I PL 27.2.1, quoted on page 102 above

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1. Chomsky, N., "Syntactic Structures" ('s-Gravenhage 1957, Janua Linguarum Nr, 4) Starting with N and V in a completely abstract way, the author developes a technique of rewriting these two basic elements in a determined order to produce sentences which appear to have the same structure, but only can be produced by different re-write rules. The same technique could be employed to see what, if any, regularities would hold between the rules for producing propositional types and the others.

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1. Aquinas has a confused appreciation of this in his discussion of one-word sentences employing either nomina or verba, particularly the impersonal verbs like tonat and pluit. cf. pp. 107 and 146 above, referring to PH I.3.34, 8.104.
   The distinction is much more fully exploited by Charles Fries, "The Structure of English" (London 1957), who examined recordings of telephone conversations
2. "A linguistic form which is never spoken alone is a bound form; all others (as, for instance, John ran, or John or run or running) are free forms" Bloomfield, op.cit. p. 160

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1. The standard works already cited (Ahrens, Pedersen. Thomsen, Benfy) give details of this discovery being communicated to European scholars by William Jones. Cf. also W. S. Allen, "Phonetics in Ancient India" (London 1953).

   L. Kaiser, "Manual of Phonetics" (Amsterdam 1957), pp. 3-28 gives a brief history of technical phonetics from ancient times to the 20th century, with special attention to European contributions up to the discovery of the Indian techniques.

2. E.g. The International Phonetic Alphabet gives symbols for the chief articulations discussed in greater detail by the phoneticians. The consonantal type is more accurately described in articulatory terms than the vocalic, whose identification includes the acoustic impression on the listener. A good short introduction to the theory and techniques is K. L. Pike, "Phonetics" (Ann Arbor 1943)

3. E.g. Kymographs and Palatograms (mechanical), and the Sound Spectrograph (electrical). There is an extensive bibliography in Kaisers' Manual

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1. At the turn of the century, de Saussure enunciated the principle that "Dans la langue, il n'y a que des différences" (Cours de Linguistique Générale, (5th edit. Paris, 1955) p. 167), and this was taken up by Bloomfield, "The importance of a phoneme then, lies not in the actual configuration of a sound-wave, but merely in the difference between this configuration and the configurations of all other phonemes of the same language", op. cit. p. 128. It is still a central consideration in the latest modern works, e.g. C. Hockett, "A Course in Modern Linguistics" (New York 1958): "The phonological system of a language is therefore not so much a 'set of sounds' as it is a network of differences between sounds... the elements of a phonological system cannot be defined positively in terms of what they "are", but only negatively in terms of what they are not, what they contrast with." p.24

   The literature and controversies about the status and methods of defining and describing phonemes is prodigious. Hockett has an extensive bibliography. But basic to a solution is the decision about what constitutes the environment of the phoneme, as Twaddell shows in "On Defining the Phoneme" (Language Monography No. 16. 1935), also in "Readings in Linguistics" (Baltimore 1957) editor, M. Joos, pp. 55-81.

2. Those who seek to find two and only two distinctive features for each related phoneme are called Binarists (e.g. Jakobson and Halle, "Preliminaries to Speech Analysis" (Mass. Inst. of Tech. 1955) and "Fundamentals of Language" ('s-Gravenhage 1956); the view that

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there are more is that of the Prague School, founded by Jakobson and Troubetzkoy (cf. Troubetzkoys' "Grundzüge der Phonologie", translated as "Principes de Phonolgie" by Jean Cantinaeau (Paris 1957), and advocated by most European phonologists, e.g. André Martinet, "La Description Phonologique" (Paris 1956)

3. PH I.6.79, cf. pp. 181 ss above

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1. In II PL V.1.1

2. cf. pp. 110 ss above

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1. cf. pp. 110 ss above

2. The terminology is that of Rulon Wells, in his article on "Immediate Constituents" (Language 23.81-117 (1947) which distinguishes free and bound morphemes (in "deadly", "dead" is a free morpheme, since it can occur alone, "-ly" is bound because it never occurs alone). Morpheme classes (morphemes are assigned to a class according to the environments in which they occur, e.g., the environment ( )ly with which "slow", "near" and "quaint" occur as adverbials, "dead" as adjectival, "far" not at all) Sequences (one or more morphemes) Sequence classes (A sequence-class is the class of all sequences whose first morpheme belongs to the same morpheme-class as the first morpheme of the sequence in question.) Applicable to the task of distinguishing equiferus and equus ferus are the notions of expansion and model : "Some sequences occur in the same environment though they have different internal structures. When one sequence is at least as long as the other (contains as many morphemes) and is structurally different from it (does not belong to the same morpheme-class as it) we call it an expansion of that other sequence and the other sequence itself we call the model." Both equi- and -ferus are bound morphemes; both equus and ferus are free morphemes. They therefore belong to different morpheme classes, equus ferus can be considered the expansion of the model equiferus since they both share many common environments. such as (_____) currit bene, (_____) multum valet, etc.

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1. The square of opposition assigns the contraries, contradictories, subcontraries and subalternate oppositions, PH II.3, De Prop modalibus 725

2. Priscians' work on syntax is based explicitly on semantic criteria, but like the rest of his books, the two on syntax both use and call attention to formal criteria as well. He starts with the excellent formal procedure of taking a sample sentence, and then seeing what substitution and addition of various parts of speech do to it. His sentence is:

   Idem homo lapsus heu hodie concidit.

   This sentence, he says, contains all the parts of speech except the conjunction, and if one were added, it would require another sentence. He has omitted consideration of the preposition here, and his treatment of the cases prepositions take is sketchy.

   Another sound procedure is his statement that he intends to rely on what he hears from Latin speakers and reads in reputable authors to assist in deciding what is grammatical. In Book XVII, he then proceeds to analyze the sentence given, assigns the proper order of words relative to each other, gives a long treatment of pronouns and when they are used, then which cases of the noun can be joined to other cases of the noun, and what they mean when they are joined.

   Taking parts of speech which can be inflected, he examines the accidents which different parts share and how they must agree. Then in the XVIII book he deals with the various moods of the verb - including the "optative" with utinam, which he notes is like the subjunctive in using the perfect tense, and then distinguished four types of construction, (1) intransitive, (2) transitive, (3) reciprocal and (4) restransitive, depending on the persons involved, (1) by a person, as in percurrit homo excelsus, (2) person acting on person, as in Aristophanes Aristarchum docuit, (3) person acting on self, as in Ajax se interfecit, and (4) the action affects another and rebounds upon the actor, as in orare jussit ut ad se venias.

   This division is not exhaustive, and it is not clear that he thought it was. While all the statements (except those about the optative) seem accurate enough, reliance on meaning makes them difficult to use, complicated, and less clear then a purely formal treatment from the beginning.

3. cf Wells' article above, and Bloomfield, op. cit. pp 194-196

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1. Recalling Aquinas' idea that "form" in an artificial composite like the sentence is the ordering or shape or arrangement of the parts, it is interesting to compare his and Bloomfield's statements about this:

   "...quia verbum importat compositionem, in qua perficitur oratio verum vel falsum significans, majorem convenientiam cum oratione videbatur habere, quasi quaedam pars formalis ipsius quam nomen, quod est quaedam pars materialis et subjectiva orationis" (PH I.5.54) "...principia materialia enunciationis sunt nomen et verbum, utpote partes ejus existentes; oratio est principium formale enunciationis utpote genus ejus existens" (PH I.6.74)

   "Since most of the contructions of any language are endocentric, most phrases have a center: the form-class of a phrase is usually the same as that of some word that is contained in the phrase. The exceptions are phrases of exocentric construction, and these, too, we have seen, are definable in terms of word-classes... An English actor-action phrase (such as John ran or poor John ran away) does not share the form-class of any word, since its construction is exocentric, but the form-class of actor-action phrases is defined by their construction: they consist of a nominative expression and a finite verb expression (arranged in a certain way), and this, in the end, again reduces the matter to terms of word-classes" (Bloomfield, op. cit., pp. 195-196)

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1. Wells (art. cit. Nos. 2 and 5) does not distinguish counterparts of material and formal parts and considers endocentric and exocentric constructions as more particular instances of the general notion of Expansions. In expansions, any part can be considered the focus, compared to which the rest is the environment. He does distinguish trivial and important foci, however.

   Besides the center or head of an endocentric construction, which would correspond to the material part for Aquinas, Bloomfield has this to say of exocentric constructions, which do not, properly speaking, have a head or center: "...the resultant phrase in an exocentric construction has a different function from the function of any constituent, yet one of these constituents is usually peculiar to the construction and serves to characterize the resultant phrase..." (op. cit., pp 194-195

2. In Wells' sense. Cf. also R.H.Robins, "In Defense of WP", TPS 1960 pp. 116-144

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1. cf. Thurot, op. cit.

2. The term is Malinowski's, "Coral Gardens and Their Magic" Vol. II (London 1935) p. 11 and passim. Cf. also his Supplement to

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Ogden and Richards' "The Meaning of Meaning", "The Problem of Meaning in Primitive Languages" (London 1946), and was taken up by J.R.Firth (Bibliography in his "Papers in Linguistics"). cf. Bloomfield, op. cit. 139 ss. The term may seem pretentious at first sight when applied to one's own language, but it must be realized that this is meant for General Linguistic theory applicable to any human language. Cultures vary and this point of view is meant to focus attention on the observable features, without prejudice from the analyst's language.

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1. cf supra, pages 46 ssand Moody, op. cit. p. 23

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1. He dealt briefly with Aristotle's difficult modal logic, of which his mentor, Albertus Magnus, is said to have had a perfect understanding by Bochenski, "Ancient Formal Logic" (Amsterday 1951) p. 4
2. Cf. Susanne Langer, "Introduction to Symbolic Logic" (N.Y. 1953) pp. 51 ff.

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1. Pelican Books: "Body and Mind in Western Thought". J. W. Reeves (London 1958) gives historical survey, "The Psychology of Thinking", R. Thomson (London 1959) and "Minds and Machines", W. Sluckin, (London 1960) discuss the trends and revisions in recent Behaviorist studies, referring principally to O. Hobart Mowrers' works, "Learning Theory and Behavior" and "Learning Theory and the Symbolic Processes" (New York, London 1960): Mowrer now advocates some mechanistically defined "imaging" or "symbolizing" process to explain latent learning, always the weak point in Behaviorism, which requires an observed response to establish a stimulus and <u>vice versa</u>. For some psychologists, this would amount to the funeral of Behaviorism. Cf. also "Verbal Behavior", B.F.Skinner (N.Y. 1957) and the devastating review of it by Noam Chomsky in <u>Language</u> 35 - 1 (1959) pp. 26-58

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1. J.C.Eccles, in his "The Neurophysiological Basis of Mind" (Oxford University Press 1952) thinks that modern techniques have made certain forms of mental activity public in a scientific sense since encephalographs show a different electrical state in the brain during conscious activity from states where there is none, even when sensations are artificially produced by electrical stimulation of the proper areas

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1. A. C. Crombie, "Augustine to Galileo", 2 Vols., (Mercury Books 3 and 4, London 1961)
2. op. cit. Vol II. p. 110
3. cf pp 126 ff supra
4. Crombie, op. cit. Vol I. p. 67
5. ibid. p. 69
6. ibid. p. 74
7. ibid. p. 78
8. ST I 32.1

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1. Crombie, op. cit. Vol I. p. 89
2. ibid. p. 25
3. ibid. Vol. II, p. 109
4. ibid Vol II, pp. 106-107

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1. Sir James Jeans, "The Mysterious Universe" (London 1930) p. 134, quoted and discussed, along with the views of Planck and Eddington, in "Philosophy and the Physicists", L.S.Stebbing (New York 1958)
2. R.B.Braithwaite, "Scientific Explanation" (Cambridge U. Press 1953)
3. R. Carnap, "The Logical Syntax of Language" (Paterson, N.J. 1959). cf. also his "Introduction to Symbolic Logic and its Applications" (N.Y. 1958) and "Meaning and Necessity (Chicago 1958)
4. op. cit. p. 277
5. op. cit. p. 310

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1. op. cit. p. xv
2. op. cit. pp. 96 ff

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1. J. Carroll, "The Study of Language" (Cambridge 1953) p. 2 besides Bloomfield and Sapir, already mentioned, cf. B. Bloch and G. Trager, "Outline of Linguistic Analysis" (Balto. 1942) E. Sturtevant, "An Introduction to Linguistic Science" (New Haven, 1947), H. Gleason, "An Introduction to Descriptive Linguistics" (New York, 1955)

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1. Cf. K. Pike, "Phonetics" (Ann Arbor, 1958) and his bibliography; "A Manual of Phonology". C. Hockett, (Baltimore 1955) and his bibliography; "Morphology", E. Nida (Ann Arbor 1946), "Structural Syntax", E. Nida, (Ann Arbor 1951)

2. K. Pike. "Phonemics. A Technique for Reducing Language to Writing" (Ann Arbor, 1956)

3. "Meaning" is generally used only initially as a criterion for establishing morphemes, especially in the light of bound morphemes like the -ity of nationality and electricity. In the final analysis, their status as morphemes is based on their distribution, or "privileges of occurence".

4. Bloomfield's definition of 'word' is widely used: "A word is a minimum free form" ("Language" p. 177). For many purposes this is not considered central: cf. A. Martinet on syntagms in "Éléments de Linguistique Générale" (Paris 1960) ch. 4 and "Syntagmatic Relations in Linguistic Analysis", T/F.Mitchell, TPS 1958, pp. 101-118

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1. cf Einar Haugen, "Directions in Modern Linguistics" (Language 27.1951) referring to Harris' "From Morpheme to Utterance" (Language 22.1946) and Hjelmslev's "Prolegomena" cited above. Haugen's and Harris' articles are in Joos' "Readings in Linguistics" (Washington D.C. 1957)

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1. "Cours de Linguistique Générale" publié par Charles Bally, Albert Sechehaye, Albert Riedlinger (5th edition, Paris 1955)

2. op. cit. p. 143

3. ibid. pp. 30, 37-38, 138ss, 231

4. ibid. pp. 25-26, 112

5. ibid. pp. 25, 31ss, 97, 112, 227-78

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1. ibid. pp. 117, 140 ss, 193 ss

2. cf. refs. above

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3. ibid. pp. 43, 125ss, 153

4. ibid. p 99

5. ibid. p. 157

6. ibid p. 162

7. ibid. p. 166-67

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1. ibid. pp. 170 ss

2. ibid. pp. 153 ss

3. ibid. p. 99

4. ibid. p. 28

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1. ibid. pp. 144-45

2. ibid. pp. 166-67. Saussure's use of 'substance' and 'form' differs markedly from that of Aquinas, as can be seen in the opposition Saussure uses, form / substance. Aquinas' typical oppo-sitions are form / matter and substance / accident. Saussure's substance or substantial then corresponds to Aquinas' matter or material.

   Since both agree that language consists of sounds, Saussure's substance and Aquinas' matter correspond, on the level of mere sounds, to modern phonetics, and the formal aspects of them are dealt with in phonology. On the morphological or syntactic level, things discussed by Saussure as substantial, and by Aquinas as material elements correspond to the modern notion of composition as opposed to the formal aspects discussed in modern terms as distribution. Hjelmslev apparently follows the usage of de Saussure.

3. ibid. pp. 168-69

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4. cf. L. Bloomfield, "Linguistic Aspects of Science" (International Encyclopedia of Unified Science 1:4 (Chicago 1939))

5. "Language" pp. 144-45

6. ibid. p. 139

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1. ibid. p. 142

2. ibid. p. 140

3. ibid. pp. 74-138

4. ibid. p. 159

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1. ibid. p. 141

2. ibid. p. 144

3. ibid. p. 143-44

4. ibid. p. 77

5. ibid. p. 160

6. ibid. p. 161

7. ibid. pp. 163-64

8. ibid. p. 77

9. ibid. p. 158

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1. cf. Haugen "Directions" above

2. Bloomfield. "Language" p. 19

3. Supplement I, "The Problem of Meaning in Primitive Languages", Bronislaw Malinowski, pp. 296-336, in "The Meaning of Meaning" by C. K. Ogden and I. A. Richards (London 1923 - 1956)

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1. B. Malinowski, "An Ethnographic Theory of Language and some Practical Corollaries", pp. 3-74, in Vol. II of "Coral Gardens and their Magic" (London 1935)

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1. the following from J. R. Firth's contribution to "Man and Culture" edited by R. Firth (London 1957), entitled "Ethnographic Analysis and Language". Malinowski derived the phrase and idea "context of situation" from Sir Alan Gardiner, "Theory of Speech and Language" (Oxford 1932) who attributes its origin to Philip Wegneer, "Untersuchungen über die Grundfragen des Sprachlebens" (Halle 1885)

2. that is, the 'meaning' is explained by reference to extralinguistic facts, rather than through internal comparison of linguistic units implicitly defined: it is not "referential" or "extralinguistic" in the psychological sense of Ogden and Richards, even though Malinowski does put the origin of man's linguistic action in some sort of conceptual activity.

3. "A Synopsis of Linguistic Theory, 1930-1955" J.R.Firth's contribution to "Studies in Linguistics" (Oxford 1957): Firth's article contains extensive references to his other works, many of which can be found in his "Papers in Linguistics" (London 1957) p. 7

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1. Firth, "The Technique of Semantics" in "Papers" p. 19

2. Firth, in "Ethnographic Analysis and Language"

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1. Firth, "Synopsis" p. 31

2. "Language, Thought and Reality, Selected Writings of Benjamin Lee Whorf", editor, John B. Carroll (New York, London 1956)

3. op. cit. pp. 112 ff

4. ibid. p. 200

5. ibid. p. 58

6. ibid. p. 58

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1. op. cit. p. 58

2. ibid. p. 59 ss.

3. ibid. pp. 59-60

4. ibid. pp. 59-60

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5. ibid. p. 215

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1. ibid. p. 200
2. ibid. p. 202
3. ibid. p. 143

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1. An active potency is exemplified in the power the eye has to see, even when closed; a passive potency is exemplified in the fact that colors are still potentially visible even in complete darkness.
   Augustine developed the notion or rationes seminales ('seminal natures' or 'natures in seed') to reconcile the notion of God's eternity and immutability with the seven days of creation. The theory is roughly this: all things were created simultaneously by God in the beginning, inorganic things as we now find them, organic things in their seminal natures, appearing through time as we know them. cf. Augustine's Contra Faustum Manichaeum, Migne PL, VIII, and De Genesi ad Litteram, ibid. Also "The Meaning of the Rationes Seminales in St. Augustine", M.J.McKeough (Washington D.C. 1944), "The Philosophy of Creation in At. Augustine" J. O'Toole, (Washington, D.C. 1944), and "Augustine and Evolution, A Study of the Saint's De Genesi ad Litte ram and De Trinitate", H. Woods (New York 1930)

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1. Whorf, op, cit. p. 213

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1. ibid. p. 85

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1. B. F. Skinner, "Verbal Behavior" (New York 1957)
2. Review of Skinner in LANGUAGE 35.1 (1959), pp. 26-58
3. cf p. 246, note 1 for references

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1. Notably the Prolegomena referred to above. In "The Structural Analysis of Language", *Studia Linguistica* I (1947) Hjelmslev parallels his work with that of Carnap and others, and points out the fundamental premise in which they agree: scientific statements are structural in the sense that they must be about relations, without involving a knowledge of or description of the relata themselves.

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1. The selection of the proper data for a suitable statistical procedure is the elementary example: e.g. confusion of the applicability of the mathematical average instead of the mean. Cf. M. J. Moroney, "Facts from Figures" (London 1958)
2. *Prolegomena* p. 11 (Whitfield's translation)
3. Rulon Wells, "Meaning and Use" in "Linguistics Today" (New York 1954) pp. 115-130
4. e.g. "apparent logical form and real logical form" are taken up in the distinction of the *modi significandi*, *intelligendi* and *essendi*; counterpart to the substitution of descriptions for 'proper names' is the position that a term in a syllogism stands for a definition; that a definition is formally one despite material composition. The difference between "tame tigers growl" and "tame Tigers exist" is handled logically by distinguishing propositions *de secundo* and *de tertio adjacente*, and metaphysically by the priority of being over form or essence.

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1. The terms are attribute to F. Householder, cf. his review of Harris in IJAL 18, 1952. Also the discussion by R. J. Robins, "Aspects of Prosodic Analysis" (Proceedings of the University of Durham Philosophical Society I. Series B, Nr. 1 (1957))
2. Phonemics, pp. 57-58

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1. Yuen-Ren Chao, "The Non-uniqueness of Phonemic Solutions of Phonetic Systems" in "Readings in Linguistics", pp 38-54, citation on p. 41
2. W. F. Twaddell, "On Defining the Phoneme" in "Readings", pp. 55-79, citation on p. 67

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1. A typical statement, in addition to those already cited (pp. 139f.): in De Virtutibus in Communi, Art. 11: "Many have fallen into error concerning forms from the fact that they judge about them the same way they do about substances. This seems to happen because forms are signified in the abstract in the substantial mode (per modum substantiarum) as albedo and virtus or something of that sort; and therefore some, relying on the mode of talking about them, judge as though they were substances..."

2. op. cit., p. xv

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1. cf. "The Linguistic Reporter" (Washington D.C. 1960) Vol. 11, Nr. 1, where J. B. Carroll reports the preliminary results of a team investigation of the hypothesis that "The structure of language affects thought and behavior in different ways", based on Whorf's work. He concludes that "It can already be said, however, that while certain effects of different language structures can be identified, they are very small in comparison with the large areas in which all the languages studied seem to operate psychologically in the same way. Linguistic universality seems to be the rule, linguistic relativity the exception."

APPENDIX I

Priscian's Verbal Classification

On semantic, morphological and syntactic criteria, Priscian distinguishes active, passive, neutral, common and deponent verbs. The verbs which are properly called active show three features: (1) the end in -o, (2) passives are formed from them when -r is added, and (3) they are used with the genitive, dative and accusative cases.

As examples, he gives abstineo irarum, impero tibi and oro te. From these, passives are made, and this can be used with the ablative case, with the prepositions a or ab usually present, as in abstineor a te, oror a te. Other cases are rare with the passive, so Priscian's conclusion is that it is peculiar to the passive: "I say 'properly speaking', because it is found with the active only when another case is present, as in video solem oculis or prohibeo filium turpitudine. (VII.787)

Those verbs which end in -o, but do not have the properties just assigned to the actives are called neutral, e.g. vivo, ditesco, sedeo. None of these require any of the cases to form a complete sentence, and Priscian finds this an adequate reason for their not having passive forms, "...neutral verbs neither signify that I am acting on something outside, nor that something is acting upon me, as in prandeo, coeno and curro. In verbs like this, he says, there is no influence exerted on rational beings, and rationality is the basis of the formations in the first and second person: formulations of passives in the third person are not uncommon in poetic style for these verbs, but in the first, they allow only a poetic interpretation, as in "I am ploughed, or I am run" (VII.788)

The common verbs are those which have the passive form, i.e. they end in -or, but are not made from actives, some of which signify actively or passively by the same form (eadem voce) as osculor te and osculor a te, criminor te and criminor a te. (VII.790)

The deponent verbs are those which end in -or, but are not formed from active verbs. They have only one meaning, but it may be active or passive. Active meanings are seen in precor deum, sequor te, loquor verbum, passive meanings in nascor a te, orior a te, patior a te, mereor a te. In discussing these, Priscian identifies as the active construction, which the Greeks called σύνταξις, a verb followed by the genitive, dative or accusative.

Priscian's division are logically clear, and lend themselves readily to a symbolic representation, which brings out the number of elements he had to consider. It is then possible to regroup them in a simpler fashion, still on his own norms, and finally, to simplify these schemes still further by classifying the verbs in terms of their constructions, and then by omitting the verbal morphology, in syntactic terms alone.

This scheme shows the semantic criterion Priscian uses in the lower-case letters, a, b, c, d, e; it is also morphological, in that verbs with the same form and meaning share the same letter. A second morphological criterion is shown in the addition of -o and -or to the V for "verb". The syntactic criterion is illustrated in letting TE stand for the (Genitive-dative-accusative case) and A TE for the (Ablative with or without the preposition).

ACTIVE	NEUTRAL	
aV^{o} - TE	bV^{o} (no case)	
PASSIVE	COMMON	DEPONENT
aV^{or} - A TE	cV^{or} - TE	dV^{or} - TE
	and	and
	cV^{or} - TE	eV^{or} - A TE

Priscian conceives of the active-passive opposition as a reversible relationship, which demands a common capacity in two terms. The grammatical active-passive class he establishes aptly symbolizes it, since it shows a to be the common capacity and the -o and -or shows the opposition. But it is unfortunate that he equates the signalling of that opposition with the endings since even the materials he himself provides show that this is never the case. The distinction is always signalled by different constructions.

Having made this choice, however, he is faced with a contradiction to be explained, every time he meets an -or form which is not passive in meaning.

If his classes are now regrouped, in terms of the constructions he discusses, rather than in terms of endings, a simpler picture emerges:

ACTIVE	aV^{o} + TE	bV^{or} + TE	cV^{or} + TE	NOTHING
	vs	vs	vs	vs
PASSIVE	aV^{or} + A TE	bV^{or} + A TE	NOTHING	dV^{or} + A TE
NEUTRAL	eV^{o} + (no case)			

This can be further simplified, since some of the forms which Priscian would list under the Neutrals do not fulfill the definition he gives of that class, and those which are legitimately included would be so handled on semantic or lexical, rather than grammatical grounds. His formal criterion for setting up the class is that these forms have no passives opposed to them in the first person, and because they do not take an object. This seems to imply that the actives must take an object, and that is not so.

The examples he give,

vivo, ditesco, sedeo, fervesco

could all be found with passives in the third person in poetic style, as well as ordinary style, and with 1st and 2nd person passives in poetic alone.

In a second list of neutrals, Priscian gives

prandeo		prandeo piscem
coeno	and mentions	coeno panem
curro		curro spatium (spatio)

The first set therefore do not differ sufficiently from the actives since passives can be formed from them, and the second set can take objects. That they do so infrequently deserves mention, but does not justify setting up a separate grammatical class.

Much better candidates for the term "neutral" are the *deponents* Priscian lists. In the schematic presentation, it is clear that the two types of deponents do not oppose each other or anything else. Semantically, this should indicate that verbs in those sets could be indifferently passive, active, both or neither, since there is no active-passive opposition possible.

All the examples he lists under the deponents which always have a passive meaning can be rejected. *Nascor a te* and *orior a te* are not passive constructions since neither *nascor* nor *orior* can be used with a simple ablative. The "passivity" may be physiological or psychological, but not grammatical. Similarly to be rejected are *patior a te* and *mereor a te*, which are passive in only some psychological sense, since we can introduce an accusative noun into both: *patior indignitatem a te*, and *mereor honorem a te*. Priscian himself says that *mereor* alternates indifferently with *mereo*.

This material can now be symbolized in this simple fashion:

ACTIVE	aV^{o} - TE	bV^{or} - TE
PASSIVE	aV^{or} - A TE	bV^{or} - A TE
NEUTRAL	cV^{or} - TE *or* A TE	

The neutrals would now include the familiar sets of deponents we learned in school, "utor, fruor, potior, fungor and vescor plus the ablative."

Since this last schematic representation retains the morphological data about verb-endings, it would not handle the rare and odd set

vapulo a te
exulo a te
veneo a te

which have passive meanings. These could then be listed separately for the sake of simplicity, or the whole could be reduced to a more purely syntactic picture:

ACTIVE	aV + TE
PASSIVE	aV + A TE
NEUTRAL	bV + TE *or* A TE

In this case, those verbs would be listed under "a" which have an active-passive opposition, regardless of ending, and under the neutrals would be listed the"b" class of verbs, which now can include the *vapulo* type as well as Priscian's deponents. The verb-lists could also include mention of the verbs that take the genitive, dative or accusative as well as the rare ones that take the ablative in active constructions. Also listed will be those verbs with defective distribution, those which are only used absolutely, or generally have passives only in the third person.

The possibility of including all the possibilities in a scheme as simple as the last indicates an order in the description or teaching of Latin verbs. Priscian's final classes might be used, but it would be clearer to start syntactically, then include the morphological criterion, and only then, set up the semantic classes, if this is still considered important. By *starting* with the semantic considerations, and using the morphological and syntactic criteria haphazardly and inconsistently, too many "exceptions" have to be provided for.

APPENDIX II

Sancti Isidori Etymologiae Libri XX : Migne PL 81-84

Isidor died in 636, had been bishop of Seville for almost 40 years, and among his many works, the Books of Etymologies were the most famous and widespread. For the seventh century it is a remarkable work, and shows a vast acquaintance with classic literature. Its importance and usefulness in his own age, and for many succeeding centuries, would be hard to overestimate.

The Etymologies cover a fantastic range of studies. By modern standards it is as interesting and amusing to read as a Sunday Supplement and just about as reliable in most areas. But there are still concise statements about the elements of many studies that would be of value to the beginner today in the usual branches of the Liberal Arts. The 'Books' vary in length from a column or so in Migne to several pages, and are entitled:

- I. Grammar
- II. Rhetoric and Dialectic
- III. The Four Mathematical Studies, Arithmetic, Music, Astronomy and Geometry.
- IV. Medicine
- V. Laws, Seasons, Times
- VI. Ecclesiastical Books and Offices
- VII. God, the Angels and Orders of the Faithful
- VIII. The Church and various sects
- IX. Languages, Nations, Kingdoms
- X. Alphabetical list of certain words
- XI. Men and Portents
- XII. Animals
- XIII. The World and its parts
- XIV. The Earth and its parts
- XV. Buildings and Fields
- XVI. Stones and metals
- XVII. Rustic affairs
- XVIII. War and Games
- XIX. Ships, buildings and clothing
- XX. Housekeeping

The _Etymologies_ are dedicated to Isidore's fellow-bishop Braulio. The Latinity is apalling and is much interspersed with Spanish words of the period which often makes its interpretation difficult. One editor has collected over 6000 such words which would be unintelligible to the Latin reader. But his basic doctrine is quite clear, as are his examples, and a few citations of paragraphs relevant to his method, along with some of the more amusing remarks, will give a feel for the work.

Each Book is divided into chapters and numbered paragraphs, so that IX.1.1 would read 'Book 9, chapter 1, paragraph 1.' Where the Latin is more to the point, as in some of the etymologies, it is not translated; where the English rendering is dubious, the Latin is added; where the exact Latin is of additional interest, it is added.

I. ETYMOLOGY

In a brief preface, Isidore dedicates the work to Braulio and says "As I promised, I have sent you this work on the origin of certain things, collected from my recollection of old texts (ex veteris lectionis recordatione collectum) and annotated in some places in the fashion found in the style (stylum - pen?) of the ancients."

I.29.1: Etymology is the origin of words, whence the meaning (_vis_) of a noun or verb is gathered by interpretation. Aristotle called this _symbolon_ and Cicero _notatio_, since nouns and verbs make things known, for example, _flumen_ because it grows by flowing, is said from _fluendo_.

.2: The knowledge of this often has a necessary use in its interpretation. For when you see whence a name has arisen, you more quickly understand its meaning. For the study of every thing, when its etymology is known, is clearer. But not all names were imposed by the ancients according to nature (secundum naturam: more likely, 'according to the nature of the things named'), but only some, and arbitrarilly, just as we are wont to name our slaves and possessions occadionally as it pleases us.

.3: That is why not all the etymologies of words can be found, since some of them no longer have the same quality they did originally, but according to the whims of men, have received other words. But the etymologies of words are assigned (1) from a cause, like _reges_ from _regendo_, that is from _recte agendo_; (2) from origin, like _homo_ from _humo_ (the slime of the earth!) (3) from contraries, like _lutum_ from _lavando_, since _lutum_ (dirt) is not clean, or _lucus_, because deep shade gives little light (parum _luce_at).

.4: Some etymologies are also made (4) from the derivation of the name, like _prudens_ from _prudentia_; and some (5) from the vocal sounds, like _graculus_ from _garullitate_ (jack-daw from noisy chattering) and some (6) from a Greek source are declined in the Latin manner, like _silva_ and _domus_ (quaedam a graeca orta etymologia, declinatae Latinae, ut silva, domus)

.5: Some names are derived (7) from the names of places, cities and rivers. Many too, (8) from the languages of different nations, so that their origin can hardly be known.

For there are very many foreign names which are not intelligible in both Latin and Greek.

II. DIFFERENT LANGUAGES

IX.1.1: The different languages are a result of the Tower of Babel, and before that, there was a single language, Hebrew, both spoken and written by the Prophets and Patriarchs.

.3: The three sacred languages are Latin, Greek and Hebrew...and because of the obscurity of the Scriptures, they are useful, for one can compare the rendering in one to that in another...

.4: Greek is considered the clearest of all languages, for it is more sonorous (sonantior: more letters, sounds? cf. I.3.4, page 5 of Appendix) than Latin and all other languages, and its varieties can be divided into five parts. The first is called koinē (mista) or common or mixed, which all use.

.5: The second is Attic or Athenian, which all the Greek authors used. The third is Doric, which the Egyptians (i.e. the Alexandrians) have, and the fourth is Ionic, the fifth Aeolic, which the Aeolians spoke, and in which one can note certain differences in the observance of the Greek language, for their usage is divergent.

.6: Some have said that there are four Latin languages, the Original, the Latin, the Roman and the Mixed: (Prisca, Latina, Romana, Mista). The original was what the oldest inhabitants of Italy used, under Janus and Saturnus, and it is found to be irregular, as in the carmina Saliorum. ("irregular" - incondita: also "disordered, confused, dead, inartistic, unsophisticated"). Latin is what was spoken under Latinus and the kings of Tuscany by the rest of the people in Latium, and in this were written the twelve tables. (reference to Cicero, II De Legibus).

.7: The Roman language began after the people of Rome demanded kings, and it is the language in which the poets Naevius, Plautus, Ennius and Virgil wrote, and the orators like Gracchus, Cato and Cicero. The mixed or common language arose after the fall of the Empire, and spread with the customs and men descending upon Rome, corrupting the integrity of words by solecisms and barbarisms. (Mista quae post imperium latus promotum simul cum moribus et hominibus in Roman irrupit, integritatem verbi per soloecismos et barbarismos corrumpens: rather confusing) (Barbarismus, verbum corrupta littera vel sono enuntiatum...I.32.2:

Soloecismus est plurimorum verborum inter se inconveniens compositio, sicut Barbarismus unius verbi corruptio...)

.8: All the oriental nations jam tongue and words together in the throat, like the Hebrews and Syrians. All the mediterranean peoples push their enunciation forward to the palate, like the Greeks and Asians. All the occidentals break their words on the teeth, like the Italians and Spaniards. (Omnes enim Orientis gentes in gutture linguam et verba collidunt, sicut et Hebraei et Syri. Omnes mediterraneae gentes in palato sermones feriunt, sicut Graeci et Asiani. Omnes Occidentes gentes verba in dentibus frangunt, sicut Itali et Hispani)

.9: The Syrian and Chaldean have a similar language, agreeing in many things, and sounds of the letters...

.10: But the language of each and every man, whether Greek or Latin or of the other nationas, can be learned either by listening to it, or by studying under an instructor. Even though the knowledge of all languages is difficult for a single man, no one is so idle that he would be ignorant of his own language when he lives among his own people. For what else could be thought of than that he would be worse than the brute animals? They at least manifest themselves with the noise of their proper voices, and he would be even worse than they who lacked knowledge of his own tongue.

III. DIFFERENT NATIONS

IX.2.97: The German nations are so-called because of their immense bodies (Ger<u>mania</u>e...im<u>mania</u> corpora)

.100: The Saxon races, on the shores of the Ocean and in impassable swamps, famed for their valor and agility. And thus they are so-called, because they are a hardy and powerful race of men, and excel the other pirates. (Saxonum thought of as similar to <u>saxum</u>, rock, hence <u>durum</u>, hard etc.)

.101: The Franks, some think, are so-called from one of their leaders, others believe the name comes from their wild customs and natural ferocity...

.102: It is suspected that the Britons are so-called in Latin because they are brutes (Britones..bruti), and they are a race in the midst of the ocean, surrounded by the sea, dwelling as it were, outside this earth (quasi extra orbem posita), and Virgil has this to say of them: "Totos divisis orbe Brittanos..."

.103: The Scots are so-called from a word in their own language which means painted bodies (Picts..picto corpore)

IV. GRAMMAR

I.3.1: The basic elements of grammatical art are the letters, which are common both to literary menand calculators, and their study is a kind of infancy of the art of grammar

I.3.2: The use of letters was discovered in order to remember things...

.3: Letters are so called as if the word were legiterae, since they provide a journey to the reader, or because they are repeated in reading. (litterae autem dicuntur quasi leg<u>iterae</u>, quod iter legentibus praestant, vel quod in lectione iterentur)

.4: The Latin and Greek letters seem to be derived from the Hebrew. For among them, the first letter is called ALEPH, and then, because of the similar pronunciation, the Greeks have ALPHA, and the Latins A. But the Hebrews have 22 characters in the Old Testament we have, whereas the Greeks have 24 and the Latins 23.

I.5.1: Grammar is the science of correct speaking, the origin and basis of the liberal arts.

.2: It is also an art, following rules and regulations.

I.6.1: Aristotle first set up two parts of speech, the Nomenand Verbum. The Donatus defined eight, but all of them revert to the two principle ones (ad illa due principia revertuntur), that is, to the Nomen and Verbum, which signify person and act. The rest are appendices, and take their origin from them.

.2: For the pronoun derives from the Noun, whose funtion it fulfils...the adverb derives from the Noun, like <u>doctus</u>, <u>docte</u>; the participle is from the noun and the verb, as in <u>lego</u>, <u>legens</u>; but the conjunction and preposition and interjection amount to a complex of them (in complexum istarum cadunt).

I.7.2: Nomen dicitur quasi notamen...

.16: ...relativa dicta de eo quod ad aliam personam referantur, ut magister, pater, dominus...

I.8.1: pronomen dicitur quia pro vice nominis ponitur

I.9.1: Verbum dicitur eo quod verberato aere sonat...

.2: Verborum species formae, modi, conjugationem et genera...

.3: Formae tenent sensum, modi declinationem. Nam nescis quid sit declinatio, nisi prius didiceris quid est sensus.

I.10.1: Adverbium dicitur eo quod verbia accidit.

I.11.1: Participium quia nominis et verbi partes quasi capiat partes...

I I.12.1: Conjunctio quia sensus, sententiasque conjungit...

I.13.1: Praepositio quia nomini et verbo praeponitur...

I.14.1; Interjectio, quia sermonibus interjecta, id est interposita, affectum exprimit...

The most important conclusion from this summary account is that Isidore himself does not attach any historical status to his etymologies, except for the occadional place-names and Greek derivatives (I.29.4, .5) In the other cases, the assigning of 'origin' is a matter of <u>interpretatio</u> (I.29.1). He does not explicitate this, but it is evidently not <u>interpretatio</u> as he defines it in the section on Rhetoric and Dialectic: II.27.3, "Interpretatio, scilicet quod res mente conceptas, prolatis sermonibus interpretatur per affirmationem et negationem".

The clearest explanation of what Isidore is doing seems to be that of Peter Helias:

"Ethimologia (sic) est expositio vocabuli per aliud vocabulum, sive unum sive plura magis nota, secundum rei proprietatem et litterarum similitudinem, ut lapis quasi laedens pedem, fenestra quasi ferens nos extra...differt autem ab interpretatione quae est translatio de una loquela in aliam; ethimologia vero saepius fit in eadem loquela." (quoted in Thurot, op. cit, p.146.

The different usage of interpretatio is of no consequence: Petrus Hispanus keeps the same usage of interpretatio as Isidore:

"Interpretatio est duplex. Quaedam est interpretatio quae non convertitur cum interpretato, ut 'laedens pedem' est interpretatio hujus quod dico 'lapis'. Alia autem est quod convertitur, ut 'amator sapientiae' est interpretatio hujus quod dico 'philosophus', et hocmodo simitur hic, et definitur sic: interpretatio est expositio unius nominus minus noti per aliud nomen magis notum..." <u>Summulae Logicales</u> 5.13.

Since he distinguished four historical stages of Latin, he might have seen the possibility of giving historical etymologies, but he considers this impossible for lack of information. (I.29.2) "Naming things according to their natures" in this paragraph doubtless means something like "automobile" as 'self-moving'. As long as only a mnemonic or suggestive purpose is intended, success is the only criterion, and on this basis, even the delightful etymologies through contraries are not unreasonable: I have a friend named John Keenan who has always been called George Keenan for the quite deliberate reason that he doesn't resemble this George Keenan at all.

Finally, the grammatical section shows the stability - or is it ossification - of grammatical ideas, as well as popular ideas about other languages, through the ages.

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