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Studies on the History of Logic and Semantics, 12th–17th Centuries

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This volume contains xii + 334 pages
PUBLISHER'S NOTE

The articles in this volume, as in all others in the Collected Studies Series, have not been given a new, continuous pagination. In order to avoid confusion, and to facilitate their use where these same studies have been referred to elsewhere, the original pagination has been maintained wherever possible.

Each article has been given a Roman number in order of appearance, as listed in the Contents. This number is repeated on each page and is quoted in the index entries.
PREFACE

The study of the problems and solutions of modern philosophy may aid the interpretation of texts belonging to the history of philosophy, and the study of previous theories may help to sharpen our insight into modern philosophical problems and answers. Thus it is important to analyse these older texts and determine the tradition to which they belong.

This statement can be seen as the *credo* of Professor Gabriel Nuchelmans, of whom seventeen articles are collected in the present volume of the Collected Studies series. Gabriel Nuchelmans was born in 1922. After his studies in Greek and Latin and after obtaining his PhD in 1950 (*Studien über φιλόλογος, φιλολογία und φιλολογεῖν*, Zwolle, 1950), he was for fourteen years a teacher of Greek and Latin mainly in Velsen, The Netherlands. In September 1964 he was appointed professor of philosophy at the University of Leiden, with special regard for ancient philosophy (until September 1969, when L.M. de Rijk assumed the chair of history of ancient and medieval philosophy) and analytical philosophy and its history. He occupied this chair until his retirement, in May 1987.

Among his most important (non-Dutch) works are the three volumes *Theories of the Proposition: Ancient and Medieval Conceptions of the Bearers of Truth and Falsity*, Amsterdam/London 1973; *Late-Scholastic and Humanist Theories of the Proposition: Amsterdam/Oxford/New York 1980; Judgment and Proposition, From Descartes to Kant*. Amsterdam/Oxford/New York 1983. The history of the theories of the proposition up to the nineteenth century was a lonely field of research. Nuchelmans ended this project with his discussion of Kant, because later theories of the proposition have been investigated abundantly. Further, Nuchelmans published *Dilemmatic Arguments: Towards a History of their Logic and Rhetoric*, Amsterdam/Oxford/New York 1991. He has also written articles on Hume, Ryle, Wittgenstein, both in Dutch periodicals and in, for example, *Mind*. The articles in the present volume make clear in which important journals and volumes his contributions appeared. Gabriel Nuchelmans is a member of the Royal Dutch Academy of Sciences.

The articles collected in this volume pertain to Medieval and Renaissance semantics and are arranged in five sections.
The first is an article in which the theme “wisdom versus eloquence” is discussed. Nuchelmans sketches the tradition from Isocrates to the twelfth century and devotes special attention to Martianus Capella.

In the next four articles (section 2) he discusses the semantics of the proposition. The second article presents a general survey, while the third discusses the difference between denotation (‘bezeichnen’) and assertion (‘behaupten’). Philosophers such as Plato, Aristotle and Abelard draw a sharp distinction between the two, whereas nominalists such as John Buridan try to establish basic sentences and propose to determine the truth-conditions of other sentences with respect to these. The fourth article investigates the view of Adam Wodeham (ca. 1298-1358) according to which the object of assent is neither a proposition nor a thing but something in between, a mode of being which essentially includes a predicative combination and the time consignified by the copula; Adam’s view is, according to Nuchelmans, somewhat less incoherent than Gregory of Rimini’s well-known notion of the *complexe significabile* (‘that which can be signified by a proposition’). In article V, Nuchelmans draws our attention to the almost unknown philosopher Stanislaus of Znaim (d. 1414), a realist, who shares with Wyclif and Hus the view that in the sentence ‘Socrates runs’ the universality of the predicate ‘runs’ lies in the world of things: it is the universal form of running as it is instantiated by Socrates.

The third section consists of two articles (VI and VII) about the medieval distinction, which was often drawn, between *actus exercitus* and *actus significatus*, or between ‘performed and signified predication’. From an ontological point of view, a form can be taken to exist in two different ways, viz. either as concretely realized in some individual, or as abstractly conceived by the intellect. This distinction has a counterpart in semantics. An expression *in actu significato* (e.g. ‘genus is predicated of a species’) is often taken as a sign, at a higher level, of the expression *in actu exercito* (e.g. ‘man is an animal’). The distinction is important for the medievals to unravel semantic paradoxes (‘insolubilias’), such as the Liarparadox.

In the fourth section (VIII-X) the central notion is the so-called *appellatio rationis* according to which a term in a proposition stands for its aspect, and not for its significates in the outer world. This double kind of signification is in modern times recognizable as the distinction between opaque and transparant contexts, which arise in connection with intentional verbs, e.g. ‘to understand’. In article 8 Nuchelmans discusses Buridan’s nominalist view. In article IX Buridan is compared to the twentieth century philosopher John Searle in contrast to Gottlob Frege. Buridan and Searle try to preserve mental elements in propositions such as ‘The sheriff believes that Mr. Howard is an honest man’, while the tie with the extramental world is preserved; Frege, on the contrary, considers the part after ‘that’ as no more than a reference to a thought. In article X Nuchelmans discusses the substitutivity of terms, which is immediately related to the previous articles and shows that Paul of Venice is well aware of the distinction between real and formal predication. This difference was commonly indicated by a
change in wordorder. When a term is taken in formal supposition in a formal predication, it cannot be replaced by one that indicates something in a certain state in the outside world, without changing its truth-value.

The last section contains seven articles and is concerned with Renaissance philosophy, although Nuchelmans, in his characteristic fashion, takes the medieval background fully into account. In article XI he discusses Lorenzo Valla’s discussion of the Dream Paradox. One of the versions is that, in a dream, Alexander is told not to believe any dreams. In article XII he discusses Walter Burley’s solution of the sentence ‘You are an ass’ in ‘If someone says that you are an ass, he says something that is true’ by reference to the treatment given by Geulincx. Boehner’s text of Burley on the problem is seriously defective, Nuchelmans concludes. In article XIII Geulincx is the focus of interest. For him the central notion in developing the logic of unanalysed statements and the logic of terms is the relation of containment. Two things are either the same, or not the same; if not they are either the same with regard to a part only, or not even partly the same; in the latter case they are entirely different; in the former there are again two possibilities: one thing is a part of the other or the two have a common part. The next article (no. XIV) concerns the problem whether a mental proposition can change its truth-value. Some philosophers thought that this was possible, but they were faced with the fact that authoritative thinkers such as Aristotle and Thomas Aquinas seemed to be of a different opinion. The whole problem depends on how one interprets a mental proposition: is it a thought that is specific in every respect? Then a change is impossible. But one could also conceive of a mental proposition as a thought-type in abstraction from various concrete situations. In article XV a seventeenth-century debate on the so-called consequentia mirabilis is presented (If (if not-P, then P), then P). The Belgian mathematician Andreas Tacquet and Christiaan Huygens represented opposite views: the latter thought that the consequentia implied a reduction to absurdity, the former did not. In article XVI Nuchelmans retraces the history (Ockham, Buridan) behind Locke’s view that particles, as well as negative and privative terms, do not involve ideas, and are therefore exceptions to a general rule. In the final article (no. XVII) Nuchelmans investigates the history of the well-known argumentum ad hominem, which can be described as a way to press someone to consequences drawn from what he or she initially accepts or to which he or she previously had concluded. There have been two separate lines of development, one based on an argument from principles that have been conceded, and one more rhetorically oriented.

Also on behalf of Gabriel Nuchelmans I sincerely thank the editors and publishers for their kind permission to reproduce these articles.

E.P. Bos.

Rijksuniversiteit Leiden,
May 1996
Philologia et son mariage avec Mercure jusqu'à la fin du XIIe siècle (1)

I

Pour donner un cadre plus ample à notre sujet propre, la symbolisation de ce que nous appellerons le thème *sapiencia-eloquentia* (2) par les *Nuptiae Philologiae et Mercurii*, il faut remonter un peu dans l'histoire et fixer les points d'où les lignes de développement prennent leur naissance.

1) Un de ces points est sans doute l'œuvre d'Isocrate et ses idées spéciales concernant τῆς τῶν λόγων παιδεία, où se reflètent du reste des conceptions typiquement grecques. L'ambivalence remarquable du terme λόγος = *ratio* | *oratio* forme la base de son idéal pédagogique. Dès 380 avant J. C. il affirme dans son *Panégyrique* (47) la conviction que l'homme se différencie essentiellement des autres êtres vivants par le λόγος : les λόγοι sont la marque d'une ψυχής εὖ φρονοῦσης de sorte que τὸ φρονεῖν καὶ λέγειν forment une unité indissoluble.

Dans l'éloge enthousiaste du λόγος dans *Nicoclitès* et reproduit plus tard dans l'Antidosis (3) il développe le même sujet, qui atteint son point culminant dans les mots : τὸ γὰρ λέγειν ὧς δεῖ τοῦ φρονεῖν εὖ μέγιστον σημεῖον ποιούμεθα. Tout progrès culturel comme déploiement commun de possibilités humaines est dû à des pensées exprimées en paroles (4).

(1) Le rassemblement des matériaux nécessaires à cet article m'a été bien facilité par un séjour de six semaines à Munich, rendu possible par une subvention de l'Organisation néerlandaise pour les recherches scientifiques (Z.W.O.).

(2) Abréviation commode de cet idéal pédagogique et culturel à deux composantes — l'érudition scientifique du *studiosus rerum* et l'éloquence littéraire du *studiosus verborum* — qui, avec des modifications selon les circonstances, a existé pendant presque toute l'antiquité. Il a été étudié d'une façon détaillée à propos d'Augustin par H. I. Marrou, *Saint Augustin et la fin de la culture antique*, Paris, 1938 (surtout les premiers chapitres).


2) Que Cicéron a été influencé directement et indirectement par Isocrate, est un fait suffisamment prouvé (1). Pour notre but nous devons surtout appeler l’attention sur la préface de l’écrit de sa jeunesse De inventione (2), qui avec la Rhetorica ad Herennium sous le nom d’Ultraque rhetorica a eu une influence profonde sur l’enseignement médiéval. Cicéron nous dit qu’après mûre réflexion il est arrivé à la conclusion : sapientiam sine eloquentia parum prodesse civitatibus, eloquentiam vero sine sapientia nimium obesse plerumque, prodesse nunquam; phrase à laquelle nous reviendrons encore fréquemment. Les hommes primitifs (infantes et insipientes homines) étaient graduellement amenés à une société ordonnée : primo propter insolentiam reclamantes, deinde propter rationem atque orationem studiosius audientes. Qu’une sapientia tacita et inops dicendi n’aurait pu produire ce résultat, Cicéron en est sûr ; cela aurait été impossible, nisi homines ea quae ratione invenissent eloquentia persuadere potuissent. Par opposition au type d’homme qui omissis studio sapientiae nihil sibi praeter eloquentiam comparasset il fait dépendre l’épanouissement d’une société véritable de la condition, si moderatrix omnium rerum praesto est sapientia.

Nous trouvons des pensées analogues, se rapportant également à la différence essentielle entre homme et animal et au développement socio-culturel de l’humanité, dans De oratore, par exemple là où il comprime son idéal oratoire dans la phrase : sapientibus sententiis gravibusque verbis ornata oratio et polita (3). Dans De officis, I, 50 enfin il appelle la ratio et oratio le vinculum de la societas humana et met de nouveau explicitement l’homme en contraste avec les animaux, qui sont rationis et orationis expertes. La notion de λόγος réatteint ici sa pleine puissance et ampleur.

3) Le même idéal a été propagé par Quintilien, pour qui le romanus sapiens (4), « his orator-king », comme dit Austin (5), réunit en soi l’éloquence et la philosophie. Nous retrouvons des pensées de la préface du De inventione dans XII, 1, 1 : Mutas enim nasci

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(2) I, 1-5 passim.

(3) I, 8, 51 ; cf. I, 17, 75-77 ; I, 55, 235-236.

(4) Inst. Or., XII, 2, 6.

et egere omni ratione satius fuisset quam providentiae munera in mutuam pernicem convertere. L'influence directe de Quintilien se manifeste surtout au temps de Jean de Salisbury ; auparavant elle est peu apparente (1).


Intéressante est son observation que dans les écrits rhétoriques de Cicéron le terme virtus s'emploie dans le même sens que sapientia (3). En réalité il faudra toujours tenir compte d'un certain mélange d'aspects moraux et cognitifs : c'est le cas avec φουσείν (4) chez Isocrate et surtout avec le vir bonus de Quintilien. Le mot philosophia présente les mêmes oscillations.

Victorinus définit même l'eloquentia en termes de sapientia : eloquentia, quae quasi sono ipso id optinuit, ut mixta videetur esse sapientiae. A cette eloquentia « liée » il oppose la seule copiam dicendi : ceux qui ne possèdent que celle-ci sont appelés diserti. Une déinition de la différence entre disertus et eloquens se trouve déjà chez Cicéron, De oratore, I, 94 (cf. III, 189 ; Orator, 15) (5). Ils sont également contrastés par Quintilien (6). Il dépend du reste souvent du contexte si disertus a une signification plus ou moins péjorative ou non.

(3) Ibid., p. 156, 4-5.
(4) Cf. BURK, p. 90, n. 2.
(6) Cf. l'observation d'AUSTIN, p. 63.
Il y a peu de différence entre sapientia et ratio ; la paire ratio /oratio est ainsi éclaircie : rationem ad sententiaram gravitatem referendum sciamus, orationem ad orna menta verborum (p. 163, 5-9).

Il faut remarquer en plus que Victorinus construit déjà une comparaison à propos du thème sapientia-eloquentia : sic vestis etiam habet rem, utilitatem texturae ; habet speciem, gratiam scilicet circa aspectus faciem. Ergo ille nescio quis magnus vir ac sapiens et hi, qui postea consecuti accepta vitae praecepta tuerunt, ut perfecti essent, habuerunt rem, id est sapientiam, habuerunt speciem, scilicet eloquentiam (p. 165, 40-42)

Mais son leitmotiv, qui après lecture de son commentaire pédant continue à résonner dans les oreilles, est l'eloquentia mixta (iuncta) sapientiae. De citer ici tous les textes relevants n’aurait pas de sens ; contentons-nous d’un seul : quamquam multa incommoda attulerit rei publicae, tamen eloquentiae studendum est, sed ut ei sapientiam coniungamus (p. 169, 35-39).

Nous garderons pour plus tard cette sapientia « coniunx » et voulons d’abord demander l’attention pour une autre branche de développement de notre motif. Dès ici nous remarquons que le commentaire de Victorinus joue un rôle considérable au moyen âge, ce qui est partiellement dû à la dispute curieuse au sujet de la possibilité d’une naissance virginal (si peperit, cum viro concubuit) (1).

5) Le problème du rapport entre sapientia et eloquentia a également retenu l’attention d’Augustin : il a énoncé ses opinions surtout dans le quatrième livre du De doctrina Christiana, où il met la rhétorique dans le sens de Cicéron au service de la prédication sous la forme d’une théorie de l’éloquence chrétienne, le modus proferendi quae intellecta sunt.

Il met ses lecteurs en garde contre l’insipiens eloquentia (2) ; le contraire n’est pas si grave chez celui qui potest disputare vel dicere sapienter, etiamsi non potest eloquenter. Dans ce contexte il cite la phrase de Cicéron : sapientiam sine eloquientia parum prodesse civitatibus, eloquentiam vero sine sapientia nimium obesse plerumque, prodesse nunquam. Comme veram sapientiam il considère cependant la supernam quae a patre luminum descendit et dont les chrétiens


(2) IV, 5, éd. H. J. Vogela, Bonn, 1930.
sont les filii et ministri. De même il a ses conceptions particulières quant à l’eloquentia : on l’apprend le mieux de la pratique des auteurs canoniques et des pères, qui possèdent une certaine éloquence naturelle s’écoutant d’elle-même de la grandeur de leur sujet (1).

Caractéristique est ce qu’il observe à propos d’un texte d’Amos (VI,1-6): numquidnam isti, qui prophetas nostros tamquam ineruditos et elocutionis ignaros veluti docti disertique contemnunt, si aliquid eis tale vel in tales dicendum fuisset, aliter se voluissent dicere, qui tamen eorum insanire noluisse? (2).

Nous voyons ici le même motif clairement exprimé, mais, comme il fallait s’y attendre chez la personne d’Augustin, des idées antiques sont modifiées dans un sens spécifiquement chrétien (2).

L’effet de ces pensées est redoublé pour ainsi dire par Raban Maur qui en 819, en pleine renaissance carolingienne, compose ou plutôt compile un traité De institutione clericorum. Le troisième livre, où il s’occupe de la formation intellectuelle du clergé, copie textuellement les passages cités d’Augustin, la phrase de Cicéron et le couple sans cesse revenant sapiens | eloquens inclus (4).

6) Pour revenir encore à Cicéron et Marius Victorinus, tous les deux sont cités comme sources de sa rhétorique par Cassiodore

(1) IV, 6, 10 : et in quibus forte locis agnoscitur (sc. eloquentia) a doctis, tales res dicuntur, ut verba quibus dicuntur non a dicente adhibita, sed ipsis rebus velut sponte subiuncta videantur, quasi sapientiam de domo sua, id est pectore sapiens procedere intellegas et tamquam inseparsabilem famulum etiam non vocatum sequi eloquentiam. Cf. IV, 7, 11-12 ; 7, 21.

(2) IV, 7, 16 in fine.

(3) Pour une discussion plus détaillée cf. Ch. BALDWIN, Medieval Rhetoric and Poetic, New-York, 1928, ch. II, et H. I. MARROU, Saint Augustin et la fin de la culture antique, Paris, 1938, III, ch. 6, pp. 505-540. En dehors du cadre spécial du quatrième livre du De doctr. christ. nous rencontrons chez Augustin les locutions suivantes : doctissimum aliquem ... sed etiam eloquentissimum et omnio sapiensissimum perfectum hominem (De quant. animae, 33, MIONE, PL, XXXII, 1075) ; Apuleius ... et liberaliter educatus magnaque praeditus eloquentia (Lettre, 138, 4, MIONE, PL, XXXIII, 534) ; unus e numero doctissimorum hominum idemque eloquentissimus omnium, M. Tullius Cicero (De cito. Dei, XXII, 6, 1) ; A. Gellius vir elegantissimi eloqui et multae ae facundae scientiae (Ibid., IX, 4, 2) ; Saint Jérôme dit dans une lettre à Augustin : libellis tuis ... eruditissimis et omni eloquentiae splendore fulgentibus (Lettre, 134, 1, 1 ; dans la correspondance d’Augustin Lettre, 172, 1, MIONE, PL, XXXIII, 753). J’ai trouvé ces exemples dans le livre de M. Marrou (p. 85 ; 105 ; 106).

dans le second livre des Institutiones, ainsi que Quintilien, ce doctor egregius, qui — virum bonum dicendi peritum a prima aetate suscipiens, per cunctas artes ac disciplinas nobilium litterarum erudendum esse monstravit (1).

Au commencement de l’Ars rhetorica d’Alcuin nous rencontrons tout un passage de la préface du De inventione, où Cicéron dépeint comme début et premier fruit de la rhétorique l’élévation de l’homme de son état primitif par un magnus vir et sapiens (2).

7) Nous voyons donc que dans la période de Cicéron jusqu’à la renaissance carolingienne on peut parler d’un développement graduel d’une association très spéciale entre les termes sapientia et eloquentia. On obtient même l’impression d’un certain cliché dans lequel l’union du savoir et de la forme d’expression est rendu par l’accouplement de mots comme sapiens (doctus, eruditus) et eloquens (disertus, facundus). Ainsi il n’est pas surprenant, si au moyen âge ces termes sont fréquemment juxtaposés même dans un contexte moins technique. Ici nous ne signalons ce phénomène qu’en passant (3). Dans la tradition latine nous rencontrons comme première source la préface du De inventione, notamment la phrase concernant le prodesse et obesse de la sapientia et eloquentia, qui émerge continuuellement, même sous forme de catéchisme dans des

traités de rhétorique, comme chez Notker Labeo, où le disciple pose la question : _an sapientia sine eloquentia obertit?_ et le maître répond : _oberit quidem quia per eloquentiam vim suam exserit sapientia_; verumtamen sapientia prodest sine eloquentia, eloquentia autem numquam proderit sine sapientia (*). Les mots : _quia per eloquentiam vim suam exserit sapientia_ ont été empruntés au commentaire de Marius Victorinus (éd. Halm, p. 155).

1) Fixons maintenant notre attention sur Martianus Capella et son œuvre *De nuptiis Philologiae et Mercurii*, datant probablement d’environ 430. Comme on sait, il nous a donné dans les livres III-IX le premier exposé complet et systématique des sept arts libéraux qui, divisés plus tard en _trivium et quadrivium_, forment l’ensemble de la culture générale d’alors. Il fait précéder la partie scientifique d’une description des noces de Philologie et Mercure, une allégorie assez obscure et pleine de digressions savantes qui parfois pousse au désespoir l’interprète habitué à un langage clair et net.

Nous nous bornerons aux questions suivantes : comment Martianus est-il venu à l’idée d’un mariage et pourquoi a-t-il choisi comme figures allégoriques justement _Philologia_ et _Mercurius_? Il va sans dire qu’il y a mainte idée qu’on peut rattacher quelque part dans la tradition littéraire ; souvent on peut identifier aussi des éléments formels : _les testimonia_ de l’édition de Dick (Leipzig, 1925) en témoignent. Notamment il s’est laissé inspirer par l’épisode des noces de Cupidon et Psyché dans les _Métamorphoses_ d’Apulée (*).

Il me paraît maintenant qu’un facteur au moins (sans aucun doute entre autres, il y a ici un problème philologique très compliqué) est formé par le commentaire de Marius Victorinus. Martianus l’a certainement connu et quand on lit Victorinus on ne peut guère se soustraire à l’impression qu’ici se trouve l’étincelle qui a en-

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(2) Cf. P. Courcelle, _Les lettres grecques en Occident de Macrobe à Cassiodore_, Paris, 1948, pp. 200-205 ; il croit que le caractère dramatique des noces de Philologie et Mercure est dû à l’influence des mystères qui se présentaient sous forme de tableaux vivants.
flamé la fantaisie bizarre de Martianus. Le thème toujours répété de l'eloquentia mixta (iuncta) sapientiae et surtout la phrase : 
\[ ut ei (sc. eloquentiae) sapientiamconiungamus \] , n'ont pu faillir de jouer un certain rôle, surtout si l'on se rend compte du fait que parmi les vierges qui refusent Mercure se trouve Sophia (nous reviendrons à son heure à l'interprétation donnée plus tard à ce refus). Du reste il ne s'agit ici que d'une hypothèse difficile à prouver par manque de données suffisantes.

Laissons de côté la personnification de l'éloquence par Mercure et passons à la figure de Philologia. Elle symbolise l'étude acharnée et l'érudition qui en résulte, ceci est clair, mais pour le reste on ne peut que faire des suppositions assez vagues. Pour ma part je voudrais risquer la proposition suivante : le terme technique latin pour les sciences était disciplinae (à côté de doctrinae) ; Varron s'en est servi comme titre de sa grande encyclopédie et c'est aussi le titre original de l'œuvre de Martianus, où les Disciplinae sont même personnifiées quelques fois (2). Mais disciplina signifie également étude, érudition en général, culture dans le sens de παιδεία (3). Chez Vitruve on rencontre l'expression encyclis disciplina (De arch., I, 1, 7 ; VI, préf., 4) : la disciplina représente et embrasse pour ainsi dire toutes les disciplinae. Cependant Disciplina comme figure allégorique de premier plan était trop latin ; de même que pour les autres vierges, Sophia, Mantice et Psyché, Martianus a préféré un mot grec.

Maintenant φιλολογία était très étroitement lié au terme παιδεία (4) ; en latin il était assez rare, mais dans le sens d'érudition on le trouve justement chez Vitruve dans un contexte où il s'agit des arts libéraux et qui est sans doute emprunté à des sources grecques (5). Vitruve était un chaînon important dans la tradition des sept arts en latin : serait-ce possible que Martianus ait trouvé

(2) La distinction entre Artes et Disciplinae qu'on trouve dans De nupt., II, 138 est trop vague pour être importante.
(4) Cf. Gabriel Nuchelmans, Studien über φιλόλογος, φιλολογία und φιλο- 

logeiv, Zwolle, 1950, p. 50, n. 87. Là on trouve aussi tous les exemples de philologia en latin.
(5) VII, préf., 4 et 8 ; VIII, 3, 25.
sa Philologia, comme synonyme de Disciplina, chez lui ou dans des traités semblables (?) ?

Quoi qu’il en soit, il est évident que l’allégorie des noces de Philologie et Mercure n’est que le thème sapientia-eloquentia sous une autre forme, adaptée aux besoins spéciaux du sujet.

2) L’influence de Martianus sur le moyen âge a été énorme (1) : grand est le nombre d’emprunts, partout on retrouve son nom et le titre de son ouvrage. Ce dernier semble avoir été à l’origine De septem disciplinis, comme Cassiodore le fait remarquer explicitement (2) et comme nous pouvons conclure d’un passage de Grégoire de Tours, Hist. Franc., X, 31 : quodsi te, sacerdos dei, qui-cumque es, Martianus noster septem disciplinis erudit.

Mais de bonne heure on trouve pour les premiers deux livres en tout cas le titre De nuptiis Philologiae et Mercurii (ou inversement). Le premier à l’employer est peut-être Fulgence au commencement du viᵉ siècle : dans son Expositio sermonum antiquorum il explique le mot celibatum et ajoute : unde et Felix Capella in libro de nuptiiis Mercurii et Philologiae ait (4).

Ce même Fulgence a déjà écrit un commentaire sur les premiers deux livres (qu’on rencontre souvent séparés des autres), comme on peut voir chez P. Lehmann, Mittelalterliche Bibliothekskataloge Deutschlands und der Schweiz, II, Munich, 1928, p. 16, 3 (Erfurt) : Item commentum solempe Fulcencii insignis viri super duobus libris Marciatis de nuptciis Mercurii et philologie ; idem Fulgencius de astronomia quam Marcialis langit in secundo, une note, qui, je crois, n’a pas encore suffisamment attiré l’attention. Ceci nous mène aux commentateurs du xiᵉ siècle.

3) Jusqu’à présent les deux plus anciens seulement ont été édités,

(1) En plus il ne faut pas exclure la possibilité d’une influence de traités astrologiques : chez Firmicus Maternus, Matheseos, III, 7, 4 par exemple, ceux qui sont nés sous une constellation déterminée de Mercure deviennent philologos aut laboriosarum litterarum peritos ; cf. en grec Vettius Valens, Anthologiae, II, 16 (concordance textuelle avec Firmicus Maternus) ; Artemidorus, Onirocriticon, II, 12 et 37 ; Ptolemaeus, Tetrobiblos, III, 13, 163.


(3) Institutiones, II, 2, 17, éd. MYNORS, p. 109 ; cf. II, 3, 20, p. 130, où on lit qu’il n’a pu mettre la main sur un exemplaire du livre de Martianus.

(4) 45, éd. HELM, Leipzig, 1898, p. 123.
le commentaire de Dunchad (1) et celui de Jean Scot (2). Pour commencer par ce dernier : c'est chez lui que vont se joindre les deux lignes que nous avons esquissées jusqu'à maintenant et qui trouvent leur point de départ dans Ciceron, De inventione et dans Martianus.

Après avoir appelé l'attention sur l'influence de Ciceron (il n'exclut pas la possibilité que lui et Martianus aient été contemporains) il continue dans la préface (éd. Lutz, p. 3) : *volens autem de septem liberalibus disciplinis scribere, fabulam quandam de nuptiis Filologia et Mercurii finixerat, nec hoc sine acutissimi ingenii obtentu ; Philologia quippe studium rationis, Mercuriusve facundiam sermonis insinuat, quasi simul veluti quodam conubio in animas sapientie studia dissentium convenerint, absque utla difficultate ad artium liberalium notitiam habitumque pervenire promptissimum est.*

Un peu plus loin nous tombons sur la glose Sophiam : sapientiam, où il note : *in hoc loco si quis leges allegorie intentas perspexerit, inveniet Mercurium facundis sermonis, hoc est copiosae eloquentiae, formam gestare.* — *Sermo siquidem eloquens et copiosus rationabilis naturae qui in nomine specialiter intelligitur subsistere maximum indicium est et speciale ornamentum (3).* Sed — *ipse sermo (4) non solum infructuosus et inutilis, verum etiam nocivus esse perhibetur, nisi sapientiae pulchra atque modesta virtute veluti cuiusdam virginis inermaté sobrio atque modesto stabilitetur et moderetur amore. Non fabulose igitur sed pulchre et verisimilitudine Cyllenius formatur inermatam sapientie pulchritudinem ordine. Hinc est quod Tullius in primo de Rhetorica libro ait « Eloquentia sine sapientia numquam profuit, sepe nocuit ; sapientia vero absque eloquentia sepe profuit, numquam nocuit. » Quoniam vero sapientiae


(2) *Iohannis Scotti annotationes in Marcianum_, Cambridge Mass., 1939.

(3) Le ἐθν[ια]ς est la _differentia specifica_ de l'homme.

castitas moderata supervacui sermonis immoderataque elloquentiae effugit contagium, non immerito ad eternas virgines describitur migrasse et consortium incontaminatae eternitas et integritatis in cuinis significatione Pallas formalur numquam deserere voluisse. Il s’agit donc ici de Sophia ou Sapientia, une des vierges qui refusent Mercure. Elle est la personification de la vertu symbolisée d’habitude par Minerva (1). Dunchad nous offre une démarcation élégante des compétences des deux dans ces mots : Pallas in significatione summae sapientiae quae incorruptibilis et incomprehensibilis est ponitur. Phylologia vero inferior intellegentia per quam intellegimus res visibles et invisibles significatur. Quae tunc Mercurio copulatur quando sermonem comprehenditur. Igitur Mercurio copulata Pallas non est quia inferior sapientia cum sermonem comprehenditur ; a summa sapientia, quae incomprehensibilis est, removetur (éd. Lutz, p. 13).

Jean Scot explique toujours le nom Philologia par studium rationis (16, 19 ; 17, 5 ; 40, 11), rationis diligentia (17, 6), studium sapientiae et amor (42, 19 ; cf. 40, 13). L’accent se pose plutôt sur étude que sur érudition, quoique les deux sens se fondent l’un dans l’autre. C’est justement à ses études que Philologia doit son immortalité.

En raison de ce que nous avons observé à propos du terme virtus chez Marius Victorinus, il est intéressant de voir comme Jean Scot s’imagine les rapports de virtus avec Philologia et Mercurius : 17,5 il dit : non incongrue Philologiam cognatam sibi esse Virtus commemorat, quia rationis studium a nirtute neque virtus rationis studio segregari potest, quippe sibi invicem conexim semper adiunguntur. Et 9, 14 : non enim alia ratione Virtus adherere Mercurio describitur nisi quod sermo quamvis copiants sit, si virtute sapientiae et scientiae non ornetur et refrenetur, nil pulcritudinis et utilitatis effict, superfluosque ac vagus reprehenditur. De telles remarques

sont importantes pour la juste compréhension de l'idéal du *vir bonus dicendi peritus*.

Du commentaire de Remi d'Auxerre (1) n'ont été publiés que des fragments (2). Citons de la préface : *volens autem disputare de septem liberalibus artibus composuit hanc fabulam de nuptiis Philologae et Mercurii, non tamen absque magni ratione ingenii. Nam Philologia interpretatur amor vel studium rationis.... Philologia ergo ponitur in persona sapientie et rationis, Mercurius in similitudine facundie et sermonis. Ut autem dicit Cicero: eloquentia id est copia sermonis sine ratione et sapientia nocet aliquando, raro aut numquam prodest, sapientia vero sine eloquentia prodest semper, numquam obest. Cum ergo in sapiente hic duo conveniunt, acumen videlicet rationis et facundiae sermonis, tunc quodammodo solituntur Mercurius et Philologia, tuncque promissimum est ad scientiam septem liberalium artium posse accedere. Ici la phrase de Cicéron est donc directement et explicitement mise en rapport avec le mariage de Philologia et Mercurius.

Et à travers tout le moyen âge les mêmes idées reviennent constamment. Je donne quelques exemples tirés de manuscrits de Munich que j'ai pu consulter moi-même. Le *codex lat. Monac. 14792 fol. 40-44 (s. xi)* contient une très longue préface où sont assimilés les deux passages de Remi et du *cod. Leid.* 87 que nous venons de citer. En plus nous y lisons : *ni igitur Phylologia iuncta

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(2) éd. M. Mantius, *Didaskaleion, II*, 1913, pp. 62-63. Les mêmes pensées, formulées un peu différemment, se trouvent dans le *cod. Leidensis 87 fol. 2a (s. IX) : Titulantr hi duo libri priores de nuptiis Mercurii et Philologiae et nona bsgue ratione. Cum enim Phylogia amor rationis interproetetur, Mercurius vero in significatione sermonis ponatur, patet proecto quia quibvs inest ratio ae vigor sapientiae, que propalatur per sermonis acuminina, in ipsis quasi fiunt competentia copulae et nuptiae Mercurii et Philologiae; multos enim novimus habere quasi phylologiam id est amorem sapientiae et rationis, carent tamen Mercurio id est eloquenti luculentisque sermone; et contrario multos facundiam copiamque sermonum, amittere tamen fundamenta perfectionemque rationem; desiderat enim Mercurius copulati Phylogiae. Itemque Phylogia adnectit Mercurio, quia et sermo ex plenitudine rationis subsistere et ratio per ostia sermonis desiderat propagari.*
esset Mercurio, non habitaret quasi praeessentialiter inter homines.
Si ergo Phylologia non esset inter homines, liberales artes non essent.
Sed quia nuptie facte, ideo septem artes sunt scripte. Nisi enim sermo
fuisset, nulle littere scriberentur. Presque le même texte se trouve
dans cod. lat. Monac. 14271 fol. 12-13 (s. XIII) ; la première partie
seulement dans cod. lat. Monac. 4643 fol. 110 (s. XIII) ; le reste
dans cod. lat. Monac. 14732 fol. 1 (s. XIII).

Nous rencontrons partout l’étymologie de Philologia : amor racionis, le plus clairement dans cod. lat. Monac. 14732 (1) : Philologia quippe amor rationis interpretatur quoniam philos grece amor latine logos grece tam rationem quam sermonem significat equivoco. Sed hic pro ratione ponitur.

Il est évident, je crois, (et probable a priori), que les commentateurs comprenaient Philologia seulement par l’étymologie sans être à la hauteur des manières dont le mot était employé dans la langue vivante de l’antiquité. Ceci nous mène à la question de savoir comment ils sont venus à cette explication étymologique (remarquons que chez Martianus toute allusion à l’étymologie manque). Il y a toujours la possibilité qu’ils l’ont prise dans des commentaires antérieurs que nous ne connaissons pas. Cependant il est assez plausible que pour Jean Scot et Remi d’Auxerre l’étymologie de Philologia était facile à construire. En premier lieu ils connaissaient naturellement un terme comme philosophia et son étymologie (2). Le mot λόγος leur était également familier (3). En outre le mot πραξικολόγος se trouve expliqué dans plusieurs glos-saires, justement de ce temps (4). Toutes ces données pointent dans la direction du sens étude, aspiration au savoir.

(1) C’est ici seulement que nous trouvons la comparaison suivante : sic gladius indifferentes in sui natura in manu iudicis iusti utilis, in manu vero ti-ranni pernilius existit. Ila sermo in ore sapientis thesaurus desiderabilis a Salomone nuncupatur. In proierio autem et garruido est quoddam damnosum nequitiae instrumentum. Un peu plus loin on nous informe qu’en sus de sa femme légitime, Mercurce possède encore une concubine, Venus. Celle-ci symbolise la superflua et inanis loquacitas et de leur liaison sont nés des hermaphrodites monstrueux.

(2) Cf. par exemple Augustin, De civ. Dei, VIII, 1 ; Boèce, Comm. in Isag., Migne, PL, LXIV, 10 ; Isidore, Etym., II, 24, 3 ; Alcuin, De dial., 1, Migne, PL, CI, 952.


(4) Cf. J. HESSELS, An Eight-Century Latin-Anglo-Saxon Glossary, Cambridge,
4) Il apparaît donc que le ixᵉ siècle se soit particulièrement intéressé à l'étude de Martianus. Notons encore la forme bizarre de *Philologia* dont Jean Diacre se sert dans le prologue de son *Souper* (après 876) : *Cyprianus post Felicem Mineum / Thalamum Logiae septem qui dotavit artibus* (1). Il est permis de supposer que Logia a été construit en analogie avec *philosophia-sophia* : ces mots sont très fréquents et sa connaissance du grec n'allait guère si loin qu'il se rendit compte de l'impossibilité d'un tel expédient (2).

A Saint-Gall, Notker Balbulus a subi l'influence de Martianus dans son poème sur les sept arts libéraux d'environ 890 : *Musas ter trinas Matugene comites, / Que dentur pariter ducende Phylologia / Sub dotis specie artis honore date* (3).

Cependant la critique ne manque pas non plus : Prudence de Troyes reproche à Jean Scot de préférer Martianus à la *veritas evangelica* et à *veridicus Augustinus* (4).

5) Cette influence, quoique moins spectaculaire, se continue dans le xᵉ siècle. Région de Prüm cite Martianus dans son *De harmonica institutione : quae omnia figurate Martianus in libro, quem de nuptiis Philologiae et Mercurii conscribit, — confingit. Il parle aussi de *in nuptiis Philologiae* tout court (5).

Qu'une distinction était faite entre la partie allégorique et le contenu proprement scientifique s'avère clairement de la lettre


(4) MIONE, *PL*, CXV, 1294.
bien connue de Gunzon de Novare aux moines de Reichenau : 
Martiani in septem liberalibus disciplinis succincta veritas ; quam 
contemnendam putant, qui fabulae solummodo delectionibus oblec-
tantur, qui non integre capitur, si veritatis qualitas ignoratur (1).

Une allusion à Philologia se trouve dans l’Ecloga Theodali, poème 
très répandu : Egregiam sobolem cui per Stilbontis amorem / Vi 
superum magna sociasti, teste Capella, / Obsecre te, Phronesi, iubeas 
reticere sorori (les vers 333-335).

Comme symbole des sept arts libéraux Philologia est employé 
par un poète anonyme de la fin du x\textsuperscript{e} siècle, qui nomme le moine 
Bovon un vir sapiens : Felicis cum sis depastus prata Capellae, / 
Philologiae te septem docuere puellae. Lui-même par contre est 
quelqu’un un Phylologiae quem numquam novere ministrae (2).

6) Au début du xi\textsuperscript{e} siècle, les premiers deux livres, avec le com-
mentaire de Remi d’Auxerre, ont été traduits en allemand par 
Notker Labeo de Saint-Gall, comme il le fait savoir dans une lettre 
à l’évêque de Sion (3) : transtuli Nuptias Philologie (4). Dans la 
préface il informe ses lecteurs que Remi interprète le mariage de 
Philologia et Mercurius comme l’union de la sagesse et de l’élo-
quence. Le terme Philologia n’est nulle part traduit.

Ekkehard IV, Casus S. Galli (MGH, SS, II, p. 123) a noté que la 
duchesse Hedvige de Souabe avait offert à Saint-Gall une aube 
Philologiae nuptiis auro insignis. Étant donnée la popularité de 
reproductions artistiques de personnages allégoriques au moyen

(1) 
(2) 
(3) 
(4) 

Migne, PL, CXXXVI, 1293.
Gustav Ehrismann, Geschichte der deutschen Literatur bis zum Ausgang 
des Mittelalters, I, Munich, 1932, p. 433, conclut de ces mots que Notker a 
traduit l’ouvrage entier. Mais de ce que nous avons vu jusqu’ici il ne paraît 
 pas du tout certain qu’au temps de Notker déjà le titre De nuptiis Philologiae 
et Mercurii désignait tous les neuf livres. On a plutôt l’impression du contraire : 
dans la liste de livres (de 872) de Ratpert, Casus S. Galli (MGH, SS, II, p. 72), 
on trouve les titres suivants : Martiani de nuptiis Mercurii et Philologiae libri 2. 
Item de 7 liberalibus artibus libri 1. Cf. aussi P. Lehmann, Mittelaltl. Bibliotheks-
kat., I, Munich, 1918, p. 87 : Martiani de nuptiis Mercurii et Philologiae libri 2, 
dans un catalogue de la bibliothèque de Hartmut de 883. Les préfaces des 
manuscrits et des commentaires suggèrent également une distinction entre la 
fabula et les septem artes liberales proprement dits. Voir cependant p. 104, n. 2.
Âge, souvent inspirées par les descriptions de Martianus, on ne s’étonne pas d’y voir figurer aussi Philologia (1).


III

1) Ainsi une ligne ininterrompue d’intérêt pour le monde allégorique de Martianus nous mène à la première moitié du xiiie siècle. C’est ici qu’on peut parler d’une véritable apogée du thème sapientia-eloquentia. Commençons notre analyse par la préface de l’Eplateuchon de Thierry de Chartres, datant d’environ 1140 : nous avons uni et comme marié ensemble le trivium et le quadrivium, pour l’accroissement de la noble tribu des philosophes. Les poètes grecs et latins affirment en effet que la Philologie s’est fiancée solennellement à Mercure... Et ce n’est pas sans motif. Pour philosopher il faut deux instruments (organa) : l’esprit et son expression ; l’esprit s’illumine par le quadrivium, son expression, élégante, raisonneuse, ornée, est fournie par le trivium. Il est donc manifeste que l’Eplateuchon est l’instrument propre et unique de toute philosophie (2). Il considère donc les sept arts libéraux comme l’organe de la philosophie et attribue le trivium à Mercure, le quadrivium à la Philologie, justement pour accentuer leur cohérence indissoluble (3).


(3) Cette cohérence des sept arts dont nous parlerons encore plus tard avait été déjà prônée par Hugues de Saint Victor, Eruditio didascalica, Migne, PL, CLXXVI, 769, De artium cohaerentia. Cf. aussi le traité d’Adéard de Bath, De eodem et diverso (éd. Willner, Munster, 1903), où la philosophie est représentée comme une source d’où s’écoule un ruisseau à sept coursants, dont le trivium est circa voces, le quadrivium circa res ipsas (pp. 22-23).
Dans ce cadre il faut prendre en considération que Thierry est l'auteur d'un commentaire sur le *De inventione* de Cicéron où il s'appuie entre autres sur le commentaire de Marius Victorinus (1).

2) A peu près du même temps date l'introduction du *De philosophia mundi* de Guillaume de Conches, où il critique âprement les maîtres qui limitent leur enseignement au *trivium* (2) : *Quoniam, ut ait Tullius in prologo Rhetoricorum, eloquentia sine sapientia nocet, sapientia vero sine eloquentia, etsi parum, tamen aliquid, cum eloquentia autem maxime prodest, errant qui, postposita proficien
te et non nocenti, adhaerent nocenti et non proficienti. Id namque agere est Mercurii et Philologiaeconiugium, tanta cura virtutis et Apollo
nis quaesitum, omnium conventu deorum approbatum, solvere. Id etiam est gladium semper acuere, sed nunquam in praelio percute
tere (3).*

A la fin de son traité il dit clairement qu'il voit le *trivium* ou l'éloquence comme une préparation à et non comme une partie de la philosophie (4). Cette dernière est explicitement restreinte au *quadrivium*, dont traite le *De philosophia mundi*. Le résultat un peu paradoxal en est que *Philologia* devient le symbole de *sapientia = quadrivium = philosophia*, nous dirions des sciences exactes. (Un peu paradoxal seulement : après tout le mariage de *Philologia* et *Mercurius* symbolise principalement l'union ; les éléments restent un peu dans le vague).

Le *trivium = eloquentia* est exclu d'une façon analogue de la *philosophia = sapientia* par l'Anonyme de Bamberg (première moitié du xiiie siècle) (6). Il distingue deux sortes de *scientia* : eloquent-

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(2) Sur cette question et celle des Cornificiens dont Guillaume lui-même a été victime nous reviendrons chez Jean de Salisbury.

(3) Migne, PL, CLXXII, 41-43 (sous le nom d'Honorius Augustodunensis).

(4) Migne, PL, CLXXII, 100 : *Quis sit ordo discendi*.


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tia et sapientia ; qu'elles diffèrent l'une de l'autre est prouvé d'une manière fort curieuse : sapientia numquam obest, sed semper prodest, eloquentia autem non semper prodest, quandoque obest. Ergo nec ipsa (donc eloquentia) est species philosophie, que numquam obest. Le quadrivium est chez lui une partie de la philosophia theoria (pars mathematica).

Quoique le système de Dominique Gundissalvi soit beaucoup plus élaboré, les mêmes lignes peuvent y être découvertes. Dans son De divisione philosophiae (1) (du milieu du xiii* siècle) il divise le humana scientia en eloquentia (grammatica, rhetorica, poetica) et sapientia (entre autres le quadrivium). La logica tient le milieu entre eloquentia et sapientia et le trivium est préparation à la philosophie proprement dite (2).

3) De l'année 1149 nous possédons une lettre de Manegold de Paderborn à Wibald de Corvey, avec le passage suivant : quoties Mercurii et Philologiae coniugium tanta cura virtutis et Apollinis quaesitum et omni conventu deorum comprobatum (3) considero,..... amplexus tam desiderabilis coniugii non carnalibus brachii exhibitos vobis attribuo, dum totius philosophiae florem, dum et divinitatis et septem liberalium artium et omnium pedissecurum scientiam apud vos, et armarium studio invento aptissimum. Wibald y répond : sed vide ne erraverit judicium tuum, quod in me scientiam et facundiam praedicasti, quae illo Martiani Capellae multiplici et enigmatico epithalamio figurantur (4). Ici le contexte est moins technique et le coniugium embrasse simplement tout le savoir.

4) Il est difficile d'ébaucher en peu de mots le grand rôle que les noces de Philologie et Mercure ont joué dans l'œuvre de Jean de Salisbury. Prenons d'abord son Entheticus de dogmata philosophorum. A partir du vers 165 il expose brièvement les elementa fin du xii* siècle Radulfus Ardens dans son Speculum universale, chez GRABMANN, Die Geschichte, I, Fribourg, 1909, p. 252).

(1) Éd. L. BAUR, Munster, 1903 ; dans l'introduction il se plaint également que le studium sapientiae soit négligé pour le studium eloquentiae (p. 3).

(2) Chez Dominique il y a aussi des réminiscences du De inventione de Cleéron, probablement par l'intermédiaire de Marius Victorinus : par exemple : maximam enim virtutem habet eloquencia in civitate, set si sapiencie sit iuncta, sieni Tullius ostendit (éd. Baur, p. 64).

(3) Ceci concorde mot à mot avec le texte de Guillaume de Conches cité ci-dessus.

(4) MIGNE, PL, CLXXXIX, 1248 et 1251.
sciendi et bene dicendi. Et si en conséquence quelqu'un et pectore pollet et ore, Mercurium iungit Philologia tibi (176) (1): alors la Philologie épouse Mercure. Après quelques observations intéressantes au sujet de la prosodie du mot Philologia il dit qu'après tout cette question n'est pas tellement importante: sed insta, Ut sit Mercurio Philologia comes, Non quia numinibus falsis reverentia detur, Sed sub verborum tegmine vera latent. Et tout le thème est déployé dans les vers 211 et suiv. (2). Le mariage ne peut cependant être heureux et fécond qu'à base de vertu. Le motif est récapitulé d'une façon frappante dans les vers 1255-56: sed quantum prosit sapiens facundia, lingua / Sit licet insignis, dicere nulla postes.

Dans le Metalogicon (1159) il se dresse de toute sa force contre un certain Cornificius, représentant d'une espèce d'individus qui considéraient l'étude seulement d'un point de vue pratique et lucratif et ne montraient point d'appréciation pour l'aspect littéraire-humaniste des branches du trivium (3). En revanche Jean défend avec ferveur l'union de la ratio-sapienfia et l'eloquentia qui se fécondent mutuellement dans illa dulcis et fructuosa conjugatio rationis et verbi: (4) Mercurio Philologiam invideo et ab amplexu Philologie Mercurium avellit qui eloquentie preceptionem a studiis philosophie eliminat et quamvis solam videatur eloquentiam persequi, omnia liberalia studia convellit.

Sa conviction que la logique est un élément indispensable de l'enseignement de la philosophie est éclairée comme suit: ut diver-tamus ad fabulas, Fronesim sororem Alicie (5) nec stilem reputavit antiquitas, sed egregiam eius somatite castis Mercurii iunxit amplexis; est enim soror veritatis prudentia, et amorem rationis


(3) Un très bon résumé de la question pas très claire des Cornificiens se trouve chez Paré-Brunet-Tremblay, La renaissance du XIIe siècle, Paris-Ottawa, 1933, pp. 190-192.


et scientie per eloquentiam fecundat et illustrat. Siquidem hoc est Philologiam Mercurio copulatam. La logique fournit les rationes, Philologia comme amor rationis doit donc être inhérente à l'éloquence véritable (p. 64).

La phrase de Cicéron ne manque pas non plus : eloquentiam sine sapientia non prodesse, celebre est et verum (p. 77). Il continue : ergo et pro modo sapientie quam quisque adeptus est eloquentia prodest ; nocet enim hec, si dissocietur ab illa. Mais le savoir scolaire est vomi par Philologia (1).

L'interprétation de Philologia comme amor ou studium rationis que nous avons constatée chez les commentateurs se rencontre dans la remarque : et est Philologia sicut philosophia nomen temperamentum ; quia sicut appetere quam habere sapientiam facilius est, sic amore quidem quam exercere rationem (p. 180). Un peu plus loin (p. 183) il dit qu'Agrimmia (2) a été mise à la disposition de Philologia pour veiller contre des excès d'étude ; amor enim otiosus non est.

Tout un passage de Martianus est cité pour illustrer qu'il faut, en devenant adulte, se servir d'un langage de plus en plus raisonnable (3).

Selon Jean de Salisbury il y a trois buts que l'homme doit avant tout poursuivre : vera bonitas, veritas sincera, ratio incorrupta et certa. Unde tres sorores filias Fronesis fabulosa gentium finxit antiquitas (4), Philologiam, Philosophiam et Philocaliam. Genus Philosophiae et Philocaliae Augustinus, Philologie Martianus, sed cognitionem trium indicat Esopus (p. 196). On notera de nouveau le sens original de l'élément φιλολογία. Philologia est la première des

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(3) Mart. Cap., I, 5, éd. Dick, p. 6 : ac iam pubentes ... non sinehant ; p. 195, Jean y ajoute : Cipris enim, que mixtura interpretabatur, vigens in eis qui sapientia et eloquentia mixtura condiantur, inermis, nude ventoque facundie deridet ineptias. L'interprétation de la figure de Vénus est tout à fait différente de celle que nous avons vue dans la note 1, p. 96. L'allégorie est patiente.
trois sœurs, parce qu'elle veille contre des erreurs dans les recherches et examine tout d'un zèle infatigable.

Récapitulons brièvement ces données. Phronesis-Prudentia est la personification des recherches scientifiques et dans cette qualité la sœur d'Alicia. Elle a besoin du support de la ratio et de la science de la ratio, la logique, et pour cela elle donne naissance à Philologia qui l'accompagne ou mieux forme un certain aspect de Prudentia. Elle unit cette Philologia avec l'Éloquence dans un mariage fécond. Prudentia s'occupe des terrena ; quand elle étudie les divina, elle devient sapientia ou sophia. Cette transition est symbolisée par l'apothéose de Philologia (1).

D'un côté donc Philologia représente le contenu, le savoir scientifique, dont Mercure est la forme et l'expression, de l'autre côté elle est, comme amor rationis, étroitement liée avec la logique. La seconde interprétation basée sur le sens étymologique a été empruntée sans doute aux commentateurs du ixᵉ siècle (2).

5) Un passage du traité De instructione clericorum de Philippe de Harvenget, qui dans la seconde moitié du xiᵉ siècle était abbé de Bonne-Espérance en Belgique, n'est pas moins important pour notre sujet. Celui qui est chargé de l'enseignement doit se servir intensément de sa voix, ut intellectus vel ratio quae divinitus infunditur animo spirituali,sermo habeatur, cum ei copulatur sermonesfoedere maritali (3). Ce thème est ensuite élabore dans toutes sortes de variations, suivant de près le texte de Martianus. La ratio ne suffit pas pour le sage si elle n'est pas fécondée par le sermo pour enfanter une soboles brillante.

Il est intéressant qu'il donne à Philologia un sens plus ou moins éthique: per Philologiam spiritualis ratio figuratur, quam in cuiusvis anima summus ille artifex operatur, per quam iustum et injustum apud se illa cernit. C'est la ratio qui prête honestas vel utilitas au sermo.

Plus loin il se réfère aux Actes des Apôtres (XIV, 8-13), où les habitants de Lystra prennent Saint Paul pour Mercure, quia ipse erat dum verbi. Et il pose la question: Nonne vobis in Paulo videntur huiusmodi nuptiae celebrari et Philologiae Mercurii quodam

(2) Chez Jean de Salisbury le titre De nuptiis Philologiae et Mercurii désigne manifestement l'ouvrage entier (éd. Webbe, p. 50 ; p. 156 ; p. 192).
(3) VI, 20, Migne, PL, CCIII, 977 et suiv.
matrimonio copulare, dum intus in secreto rationis amor eum efficit eruditum et inde velut sponsus de thalamo verbum productur expositum?

Le texte célèbre de Cicéron y figure aussi : scio enim et sermonem vobis plurimum non prodesse, imo forte non mediocriter et obesse, si tanquam onager nobis voluerit solitarius præsto esse, et rationis integritatem fructus non salis congruos parturire, si in complexum verbi recusavit devenire.

Enfin Philippe plaint le sort de la ratio qui comme une virgo sterilis doit se passer des complexus verbi et il allègue plusieurs textes bibliques pour illustrer la virginitas infecunda.

6) Après ce que nous avons vu, il n'est pas étonnant qu'on trouve aussi des traces du τόξος Philologia-Mercurius dans la poésie contemporaine. D'abord il existe une adaptation poétique du texte de Martianus dans le cod. Meerm. 471 (1). Voici les vers d'introduction : Vim fidei menti facundia dat sapienti, / Cum resonat plene prolatio vocis amene (2). / ... Cum nequeas fari, sapiens vis falsa notari. / Mercurii vatis velut indicium probitatis / Traditur eximia coniunx fore Philologia.

Dans les Carmina Burana, n° 182 (3) on trouve, dans un contexte assez confus, l'exclamation : O si forem Mercurius, / Philologiae sedulus.

La Metamorphosis Goliae Episcopi a été en grande partie inspirée par les premiers livres de Martianus. Philologia y est désignée sous le nom de nupta et notre thème se retrouve dans les vers 89-92 : Nisi sapientiae sermo copuletur, / Vagus, dissolutus, infirmus habetur ; / Et cum parum proicit, parum promeretur ; / eget ut remigio eius gubernet (4).

Finalement dans l'épitaphe que Rahewin a dédiée à Othon de Freising (5) l'intérêt du défunt pour l'étude est résumé dans les mots : Huius frequens otium in philosophia, / Maius exercitium in theologia, / Foedus sibi mutuum cum Philologia, / Nunc sit ei spe-
culum summa theoria. Ici on peut interpréter Philologia comme l'ensemble des sciences profanes tandis que foedus est sans doute une réminiscence de son mariage avec Mercure.

IV

En terminant nous pouvons constater que dans la période examinée le mot Philologia s'emploie seulement en rapport avec l'œuvre de Martianus Capella. Je ne connais qu'un texte où ce n'est certainement pas le cas. Dans un traité De epistulis (1) l'auteur inconnu se sert du terme grec : quod ad elocutionem attinet, sermo esse deebit purus et simplex, interdumфизiologyav redolens aut figura aut apte interpositis sensibus vel poeta rum vel historicorum. Il signifie érudition et la phrase elle-même est sans doute un savant équivalent d'occasion d'une expression comme doctrinam redolere.

Un deuxième passage est légèrement postérieur à notre période et se trouve chez Conrad de Fabaria, Casus S. Galli (± 1234) : il s'agit d'un abbé qui philosophica quadam perlustrabat cuncta sagacia et circumseplus undique miro philologia indagabant cuncta sermone (2). Dans ce cas aussi il faut sûrement interpréter philologia comme érudition, mais le fait qu'il y a un rapport avec sermo nous dirige vers l'association sapientia-eloquentia, quoiqu'il ne soit plus question d'une personification allégorique.

On peut donc conclure que le mot était seulement connu à travers l'œuvre de Martianus. Résultat qui n'est pas très étonnant : en latin il n'y a jamais eu de trace d'une forme verbale ; de philologus je n'ai pu trouver après le ive siècle que des exemples dans des glossaires ; ni philologia ni philologus n'étaient jamais devenus des mots latins généralement acceptés (3). Et les textes grecs où φιλόλογος et φιλολογία sont employés étaient inconnus au moyen âge.

Il est permis de supposer que pour Martianus lui-même philologia avait encore un sens traditionnel, c'est-à-dire qu'il était encore en contact avec des emplois plus ou moins vivants du mot. Mais dans la période après, le terme se rencontre uniquement dans un

(1) Éd. HALM, Rhet. Lat. Min., p. 589.
(2) MGH, SS, II, p. 171.
sens qui d'une part dérive de l'allégorie de Martianus et d'autre
part d'une explication étymologique qu'on trouvait dans les glos-
saires ou reconstruisait à l'aide d'autres données.

C'est donc grâce à la fantaisie de Martianus que le terme Philo-
logia a pu prolonger son existence précaire en latin et cela dans le
cadre d'un lieu commun vers lequel le moyen âge s'est senti appa-
remment fort attiré et qu'on peut suivre à travers toute la litté-
rature. De nos exemples il s'est manifesté clairement que le thème
des noces de Philologie et Mercure ne se prête guère à une défini-
tion très exacte : il est toujours adapté aux besoins spéciaux du
sujet en question. Cependant il y a un noyau invariable, l'union
de l'éloquence et de la sagesse, ou bien dans un sens moins technique
ou bien appliquée à la division des arts libéraux en trivium et
quadrivium et à la division des sciences en général.
THE SEMANTICS OF PROPOSITIONS

Terms and propositions

Separate treatments of the semantics of terms and the semantics of propositions are justified by the Aristotelian distinction between two levels of speech and thought (Categories 1a16, 2a4; De interpretatione 16a10): the level of names and verbs and the thoughts corresponding to them, which do not yet involve any combination (sympleke, complexio) that makes the notions of truth and falsity applicable, and the level of expressions and thoughts formed by a kind of combination that has to do with truth and falsity. Just as Aristotle had made the applicability of the notions of truth and falsity the criterion for the relevant kind of combination, the medieval semantics of complex units of speech and thought (complexa) concentrated on sentences that are used for making statements and are thus either true or false – the sort of sentences with which logic is primarily concerned. A combination of words that is used to make known something that is either true or false (oratio verum falsumve significans)¹ was called an enuntiatio or propositio. The Latin word ‘propositio’ practically always designates a declarative sentence; accordingly, in this chapter ‘proposition’ is used in this medieval sense and never in the modern sense of that which is expressed by a declarative sentence. Most medievals were aware of a distinction between a complexio in the sense of mere predication, without any assertive (or other) force, and a complexio which is accompanied by an act of judging or asserting that it is so. Abelard considered mere predication as the common element in different speech acts;² and from the beginning of the twelfth century it was customary to distinguish between an act of merely putting a predicative combination before the mind and an act of judging that that combination is the case in reality. The author of the Ars Meliduna³ (between 1154 and 1180) even employed a terminological distinction to mark the difference in

¹. Cf. Boethius, De differentiis topicis, PL 64, 1174B, 1177C.


assertive force between propositions uttered by themselves and propositions in so far as they are part of compound statements. Uttered by itself, a categorical proposition both signifies an inherence and asserts that the predicate inheres in the subject (significat et enuntiat); as part of a compound statement it only signifies an inherence (tantum significat), without asserting that it is so. For many purposes, however, the words 'complexio' and 'complexum' could be used in such a way that they included both the predicative and the assertive aspects.

Written, spoken, and mental propositions

As in the case of incomplexa, or terms, it was held that there are three kinds of propositions: written, spoken, and mental. Written and spoken declarative sentences and their mental images were contrasted with the corresponding thoughts, which were seen as belonging to a sort of universal mental language. Now the first question of the semantics of propositions concerns the relation between conventionally signifying written and spoken propositions and their mental counterparts. This question, which we might call the problem of the meaning of a declarative sentence, received a relatively uncontroversial answer.

The meaning of a declarative sentence

In accordance with Aristotle’s conception in De interpretatione 16\(^\text{3}\), it was held that a written proposition or its mental image conventionally signifies the corresponding spoken proposition and that a spoken proposition or its mental image conventionally signifies the corresponding mental proposition or act of thought. Some authors, for instance Ockham\(^4\) and Gregory of Rimini,\(^5\) were of the opinion that written and spoken propositions have the same significate as the mental propositions, the first two as conventional signs and the latter as natural signs, but even they restored something of the Aristotelian hierarchy by considering the written proposition as a secondary conventional sign compared to the spoken proposition, and the spoken proposition, in its turn, as secondary and subordinate to the mental proposition. The written and spoken propositions discharge their signifying function in subordination to the mental acts of apprehending and judging which always precede them. In the last instance, therefore, it is the mental proposition which is immediately directed towards the outside world.

\(^{4}\) William Ockham 1974a, Summa logicae, I, 12.

\(^{5}\) Gregory of Rimini 1522, Prologus, q. 1, art. 3; cf. ii, Dist. 9–10, q. 2, art. 1.
The mental proposition

The mental proposition is an act of thought which consists of an act of combining the predicate with the subject in an affirmative or negative way and of an act of judging that what is thereby conceived is so in reality. Considered as a unit of a universal mental language, it is said to signify in a natural manner; at the same time — and this, as will appear, is a point of crucial importance — it contains a mental copula, and its total signification is thus determined by a syncategorematic element.

The signisicate of a mental proposition

In order to understand clearly the second and most controversial question of the medieval semantics of propositions, namely the problem of the signisicate of a mental proposition, one should realise that the word 'signisicare' has a special sense in this context. On the one hand, it is used of a person who performs an act of expressing a belief or making known an opinion, and of the expression involved in that act; in such cases it has the same meaning as the verbs 'enuntiare', 'dicere', 'proponere'. On the other hand, in keeping with the interpretation of thought as mental speech the terminology of the speech act of asserting could easily be transferred to the purely mental acts of judging, assenting, dissenting, believing, and knowing; judging is then conceived of as a kind of asserting in the mind (enuntiare mentaliter quod sic est). The question of the total or adequate signisicate of a mental proposition, as contrasted with the signisicates of written and spoken propositions and with the signisicates of the categorematic terms, thus becomes the problem of the specific object of an act of judging or an act of asserting, or, in other words, the question of the nature of 'the thing' (pragma, res) which, according to Aristotle, underlies an affirmation or negation (Categories 12\textsuperscript{b}6-15). In so far as such an object is postulated for both true and false assertions or judgements, it must have the character of something intermediate between the acts of asserting or judging and the outside world; if only true assertions and judgements are considered, it may be asked what kind of place such an object occupies in the actual world. This problem concerning the nature of the object of what we would call the propositional attitudes naturally leads to the further question of what are the primary bearers of truth values, the modalities, and the logical relations. Again, part of this further question may be seen as the problem of deciding what Aristotle meant by 'the thing' in his formula 'It is because the thing is or is not that the statement is said to be true or false' (Categories 4\textsuperscript{b}8, 14\textsuperscript{b}21).
The breadth of medieval semantics

From the foregoing it will be clear that the medieval semantics of propositions included, apart from problems which we would call semantic in a strict sense, certain issues which are at least very closely connected with such disciplines as philosophical psychology, epistemology, and ontology. The questions treated, which still belong to the core of what is now called philosophy of language, were often conditioned by such typically medieval interests as God’s knowledge, the articles of faith, and the object of theology. But the ways in which those questions were asked and answered can usually be sufficiently dissociated from these narrow contexts to remain instructive for the modern philosopher of language.

From Abelard through the thirteenth century

Both in the *Logica 'Ingredientibus'* and in the *Dialectica* Abelard draws a sharp distinction between mere predication and the act of asserting. Since the copula is a syncategorematic sign, predication is essentially a manner of conceiving (*modus concipiendi*), an operation of linking subject and predicate in an affirmative or negative way. In order to get a full statement-making utterance, however, it is not enough to perform such a formal act of compounding or dividing; one must also assert, by means of a finite verb, that the constructed inherence is as a matter of fact the case. Now the *dictum*, or that which is asserted to be the case, although it is about things and not about ideas or words, cannot itself be a thing in the sense of things which are denoted by nouns; it is rather an asserted state of affairs or manner in which the things denoted by the categorematic subject-term and predicate-term are related (*rerum modus habendi se*). Because of the syncategorematic character of the copula a proposition can signify or assert only the way in which things are connected; the significate of the proposition, therefore, does not belong to the category of things, but is a way of being which can be made more explicit by such impersonal or non-denoting expressions as 'ita (or sic) est', 'accidit', 'contingit', 'evenit' when they are combined with an expression in indirect discourse (accusative plus infinitive). This way of being can be signified only in a complex manner, namely by adding a certain mode of conceiving to the conceptions of the things which by this very *complexio* become the subject and the predicate of the proposition. Abelard considers the *dictum*, or asserted predicative connection, as the primary bearer of the truth values; the written or spoken
The semantics of propositions

propositions and their mental counterparts are true or false in a derivative sense. As a *dictum* can be true or false, it must be something intermediate between the act of asserting and the actual world, but apart from the emphatic categorisation as a non-thing its ontological status is left very much in the dark.

Some of the treatises on logic which date from the period between the middle of the twelfth century and the beginning of the thirteenth century clearly show the influence of Abelard’s *dictum* theory. Besides ‘*dictum*’ and ‘*significatum propositionis*’ they often use the word ‘*enuntiabile*’ for that which is asserted to be the case; in accordance with its form, this term also occasionally stands for an assertible, in the sense of that which can be asserted although it is not actually asserted. The author of the *Ars Meliduna*\(^7\) mentions several opinions concerning the nature of assertibles and prefers the view adhered to by his teacher, according to which *enuntiabilia* are neither substances nor qualities but have a peculiar being of their own: they are grasped only by reason and thought and are inaccessible to the senses. This Platonising doctrine is also found in the *Ars Burana*,\(^8\) where an assertible is called an *extrapraedicamentale*, not, however, because it does not belong to any category at all, but because it belongs to a separate category of being which is not one of the ten distinguished by Aristotle.

Whereas Abelard and his followers limited their attention almost exclusively to the object of an act of asserting, theologians of the same period saw themselves forced to deal with the object of acts of believing and knowing (the *credatum*, the *scitum*) by certain difficulties concerning the identity of the articles of faith and the immutability of God’s knowledge. The problem of the identity of the object of faith arose from some remarks made by Augustine in his exegesis of the Gospel according to Saint John 10. 8,\(^9\) and in his *De nuptiis et concupiscientia*:\(^10\) although what is believed about the events in Christ’s life is worded in different ways, notably by different tenses of the verbs, by those who express their belief before and after his coming, the content must remain exactly the same.

One answer to the question of what the object of faith actually is came to be called the *res* theory: the object of faith which in spite of different ways of expressing it remains the same is the actual thing or event, for instance Christ’s birth (*nativitas Christi*), considered as an *incomplexum*, as something

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10. Il, 11, PL 44, 450.
which in any case does not have the complexity of a proposition. This view was supported by pointing to the fact that God, the prime object of faith, is absolutely simple. Moreover, the faith of the believers who live in this world has the same object as the future vision which they will enjoy in heaven; and the object of that vision, which is a simple intuition of the highest light, is certainly not complex or determined by qualifications of time.\footnote{Cf. Bonaventure 1882–1902a, Dist. 24, art. 1, q. 3; Peter of Tarantasia 1652, Dist. 24, art. 3.}

Against this res theory it was urged by others that the object of an act of believing is something to which the notions of truth and falsity are applicable and which must therefore be the product of a complexio: a complexum or proposition. The adherents of this complexum theory often use the word ‘enuntiabile’ for the proposition which is the object of belief; it should be noted that in this context ‘enuntiabile’ has practically the same meaning as ‘enuntiatio’ and designates a declarative sentence or the accusative-plus-infinitive expression corresponding to it. Now in order to save the sameness of the object of faith which they identified with a proposition, the complexum theorists tried to replace the declarative sentences which have an indexical character because of the different tenses of verbs by some kind of eternal sentence in which the indexical elements have been neutralised or eliminated and whose truth value cannot change. The simplest device was to make the proposition which is the object of faith consist of the disjunction of three differently tensed verbs, for example: ‘that Christ was born or is born or will be born’ (‘Christum esse natum, vel nasci, aut nasciturum esse’).\footnote{Cf. Chenu 1934, p. 131.} Another solution was suggested by the so-called nominales, who made a distinction between the principal signification and the accidental signification of words. Words which belong to different word-classes, such as ‘albedo’, ‘albet’, ‘album’, have a common principal signification and different accidental significations, just as ‘albus’, ‘alba’, ‘album’, are one and the same nomen, with the same principal signification and different accidental significations. In the same way, it was argued, declarative sentences with different tenses of the verbs and consequently different accidental significations may be taken as varying forms of one and the same proposition, whose identity is determined, not by the sounds or the accidental modes of signifying, but by the unity of the thing signified.\footnote{Some of the relevant texts are quoted in Chenu 1934.}

\begin{itemize}
\item Others, for instance Bonaventure\footnote{Bonaventure 1882–1902a, Dist. 24, art. 1, q. 3.} and Peter of Tarantasia,\footnote{Peter of Tarantasia 1652, Dist. 24, art. 3.}
\end{itemize}
who had objections against certain aspects of the theory of the nominales, distinguished two kinds of propositions, one with tenses of the verb which are in accordance with the contingent position occupied by the believer in the course of time, and one that is neutral and indifferent to all time, with a verb that has been made tenseless. The substance of faith does not depend upon superficial changes in the position of the believer and may thus be best expressed by means of tenseless propositions. Finally, there were also mixed views. Thomas Aquinas,\(^{16}\) for example, was of the opinion that according as the question is considered from the standpoint of the believer or from the standpoint of that which is believed both the complexum theory and the res theory may claim relative truth.

Indexical expressions were also discussed in connection with the immutability of God's knowledge. Peter Lombard\(^{17}\) mentions the following objection against the doctrine that if God knows something at a certain time, he has always known it and will always know it. God formerly knew that the world would be created; but he does not know now that the world will be created; therefore he knew something which he does not know now. From a consideration of the proper function of such indexical expressions as 'yesterday', 'today', 'tomorrow' and the tenses of the verb, Peter concludes, however, that in the same way as those who believed that Christ would be born and those who believe that he was born have the same faith in spite of the differences in the wording, God, who knew before the creation of the world that it would be created and who now knows that it has been created, has exactly the same knowledge about the creation of the world.

**The fourteenth century**

The theories concerning the significate of a proposition which were put forward in the course of the fourteenth century show a marked continuity with the views that had been developed in the past. But while one gets the impression that Abelard's *dictum* theory and, on the other hand, the res theory and the complexum theory were not really rivals, in the later period theories of all three types were commonly seen as in sharp conflict with each other. The theory which comes closest to Abelard's *dictum* theory is the theory of the *complexes significabile*, usually associated with Gregory of Rimini. It is not unlikely that a similar view had already been defended by William of Crathorn, but from the few sources which are available at

\(^{16}\) ST, I, 1, art. 2.
\(^{17}\) Sent., I, Dist. 41.
present it is hard to tell exactly what William's doctrine was. According to Gregory, then, a mental proposition in the proper sense is either an act of assenting or an act of knowing. At the very beginning of his commentary on the Sentences, which he completed shortly before 1345 in Paris (Prologus, q. 1, art. 1), he raises the question of what exactly the object of theology is and in that connection discusses the more general problem of the nature of the object of knowledge that is acquired by scientific proof. Rejecting the view that the object of knowledge is a proposition or *complexum* and also the view that it is a *res* in the outside world, he defends the thesis that what is known and assented to or believed is that of which the mental proposition is a natural sign and of which the written and spoken propositions or their mental images are conventional signs. This total and adequate significate of the proposition he also calls the *enuntiabile* (in the sense in which that word was used in such treatises as the Ars Meliduna and the Ars Burana) and the *complexe signíficabile*: something that can be signified only by a proposition which contains an act of *complexio* and never by a single word or a combination of words that lacks affirmative or negative force. It should be noted that Gregory does not use 'dictum' in Abelard's sense; when he makes use of that term, it means the words uttered and not that which is asserted by those words. In trying to answer the question of the ontological status of this object of assent and knowledge Gregory distinguishes three nuances of meaning in such words as 'aliquid', 'res', 'ens'. Although it cannot be held that an assertible is something in the sense of a substance or accident as denoted by categorematic terms, it is a thing in the sense in which Aristotle speaks of the thing which underlies an affirmation or negation and in which he says that a statement is true or false because the thing is or is not; and it may also be called a thing, in case the proposition is true, in so far as it is part of the actual world. In other words, it is either that which is asserted or believed (or could be asserted or believed) to be the case and can thus be true or false, or that which is actually the case, but never a thing in the narrowest sense. For Gregory the bearers of truth and falsity (and of the modalities) are not only actually existing propositions and the significates of actually existing propositions, but also states of affairs that are capable of being signified by true or false propositions even if these corresponding propositions do not in fact exist. In that case the true assertibles are always actually signified by God as the uncreated sign of all truth.

19. Gregory of Rimini 1522, I, Dist. 39, q. 1, art. 2.
Among those who followed Gregory in postulating some kind of complexe significabile — Bonsembiante Beduanus of Padua, John of Ripa, and Albert of Saxony — there were also some, notably Ugolino of Orvieto and perhaps Paul of Venice, who held that in certain cases the complexe significabile may be identified with a thing in the strictest sense. If, for example, the complexe significabile is the content of a proposition that asserts the existence of one actual thing, such as that there is a God (deum esse), then the signifycante is nothing but the thing in so far as it actually exists. The only difference between the signifycante that God exists and the incomplexe thing, the existing God, is that they are signifycated and understood in different ways: in a verbal way (deum esse) and in a nominal way (deus ens). Only if an actually existing thing is signifycated in a verbal way, by means of a complexio which makes the notions of truth and falsity applicable, is it a proper object of acts of assenting and knowing.

The Ars Meliduna had already mentioned a theory according to which an assertible is nothing but an act of thinking that something is the case. If 'complexum' is taken in the sense of a mental proposition as a particular act of apprehending things in a manner characteristic of a complexio, then such an act theory of the assertible may also be called a complexum theory. In the fourteenth century this type of theory was put forward by William Ockham and Robert Holkot. In their view the immediate object of an act of believing or knowing is nothing but that act itself; the act of naturally signifycating and the thing signifycated are one and the same. The mental propositions or particular acts of believing and knowing are also the primary bearers of the truth values; truth and falsity are not qualities of such propositions, but those propositions themselves. More or less the same thesis was maintained by John Buridan and Marsilius of Inghen. Buridan holds that such accusative-plus-infinitive expressions as 'Socratem currere' (‘that Socrates runs’) can often be interpreted according...
to material supposition, in such a way that they stand for the proposition 'Socrates currit'. If, on the other hand, they have to be taken in a signifying function (significative or personaliter), then they refer to exactly the same thing in the outside world as does a combination of words or concepts which does not contain a copula. Just as the phrase 'Socrates currens' ('running Socrates') has an application if in the outside world there is an individual named 'Socrates' in the state indicated, the expression 'Socratem currere' is true if the same individual in that state exists. If there is any one significate of a complexum as such, it is a thing in a certain state (res sic se habens); but exactly the same thing can also be signified in a nominal way. Peter of Ailly,\(^\text{30}\) on the other hand, who was also an adherent of the complexum theory, rejected the doctrine that basic affirmative propositions, if true, name one entity in a certain state as determined by the catenomeric and syncatelogermatic parts of the proposition. According to him such propositions refer to all the entities referred to by the catenomeric parts and they do so in a certain way (aliqualiter), but asking what kind of thing the significate of the proposition as a whole is betrays a lack of insight into the proper workings of language.

Finally, mention should be made of some variants of a res theory. In the first place, some authors agreed with the complexum theorists that the mental proposition is the primary bearer of truth and falsity, but at the same time rejected the view that the proposition is the object of acts of assenting or knowing. A res theory in this sense was probably held by Walter Chatton\(^\text{31}\) and quite clearly by André de Neufchâteau.\(^\text{32}\) According to the latter it is not the proposition 'God is three and one' that is the object of assent, but rather that which is signified by the proposition, namely that God is three and one. Before we judge that the proposition is true, we must give our assent to this significate. But when he comes to explain what this significate is, André does not follow Gregory of Rimini, but sides with Buridan: that God is three and one is nothing but God being three and one, the thing that is such and is in such a state as is required for the truth of the judgement. To a certain extent this theory resembles the view taken by the Thomistic school in the debate concerning the object of assent and knowledge. John Capreolus,\(^\text{33}\) for instance, is of the opinion that the proximate object of belief and knowledge is the proposition

\(^{30}\) Peter of Ailly 1490–95b, esp, the first part of the Insolubilia.


\(^{32}\) Audre de Neufchateau 1514, Prologus, q. 1–3; Dist. 2, q. 1–2; Dist. 33–4.

\(^{33}\) John Capreolus 1900–8, 1, pp. 51–7.
formed by the mind; this mental proposition is the product of an act of compounding or dividing and is the matter to which the act of judging is related. This internal object, however, is not that to which the act of believing or knowing is actually directed, but only the medium through which the mind tries to establish contact with the outside world. The ultimate object of belief and knowledge is, therefore, the thing in the outside world or rather the way in which things in the outside world may be connected, namely either as a combination of matter and form or as a combination of substance and accident. Such a proposition as 'Socrates is white' does not, according to Capreolus, have any one significate, but rather has many significates: it signifies Socrates, whiteness, that Socrates falls under the concept of whiteness, and the present. All these things, however, do not constitute a genuine unity. The Thomistic view thus seems to differ from the extreme realism maintained by Walter Burley, who argued for the existence of *propositiones in re* which are compounded of things outside the mind and form the adequate and ultimate significate of true mental propositions, which consist of concepts. In a proposition which exists in the world the things that serve as subject and predicate are the matter, and the copula, which consists in the compounding or separating activity of the mind, is the form. Just as an act of attention unites the seeing in the eye and the visible object outside the eye so that we can speak of an object seen, the intellectual act of compounding or separating together with the subject-thing and the predicate-thing forms a unity which is a copulated entity (*ens copulatum*). This copulated entity presumably consists of the subject-thing and the predicate-thing in so far as they are truly judged to be identical or separate.

Sentence-tokens and sentence-types

This survey of the main currents in the medieval semantics of propositions may be concluded by briefly describing at least one further important issue connected with determining the nature of the proposition and its significate. When the proposition was considered as a bearer of truth values, either primary or secondary, it was generally taken to be a sentence-token. That at least some medievals were aware of a distinction between sentence-tokens and sentence-types is evident from Abelard, who maintained that one cannot make sense of the objection that the same utterance, for
instance 'Socrates is seated', seems to be both true and false, unless the utterance is taken in the not unusual acceptation of those who call different utterances the same sentence on account of a similarity in form. This notion of a sentence-type is, however, mentioned only to be rejected. The interpretation of a proposition as a sentence-token was supported by the Boethian definition of a proposition as a combination of words which signifies (significans) something true or false. This definition was held not to apply to an ambiguous sentence (multiplex propositio). In the same vein sentences containing such indexical expressions as demonstrative or personal pronouns were thought to signify nothing if they are uttered without reference to a thing present. By themselves, without context or situation, they are not sufficient to assert something, although they are capable of being used to make a statement which is either true or false.\textsuperscript{36} When Paul of Venice\textsuperscript{37} felt that not only sentence-tokens but also sentence-types should be counted as propositions, he accordingly changed the Boethian definition and spoke of a combination of words which is capable of signifying (significativa) something true or false. That sentence-types were occasionally taken as signifying the true or the false is obvious from those cases in which the truth value is said to change. Bonaventure,\textsuperscript{38} for example, thinks it wrong to hold – as the nominales did – that a verb in the present tense signifies different present things at different times. Just as the noun ‘man’ has exactly the same signification when it is used to refer to Peter and when it is used to refer to Paul, so a verb in the present tense has exactly the same signification whether it is uttered today or tomorrow; it signifies the present in general. Similarly, a sentence to the effect that you will be born remains the same at whatever time it is uttered; consequently, the same sentence which was formerly true is now false. And Peter of Ailly\textsuperscript{39} says that such a proposition as ‘The Antichrist will exist at the future moment $c$’ is true before $c$ if the Antichrist exists at $c$, but false (rather than inapplicable) after $c$. It may cease to be true and is therefore mutably true; but once it has become false it remains immutably false. In this connection it is worth mentioning that the author of the \textit{Ars Meliduna}\textsuperscript{40} considers the ascertainable which belongs to the sentence ‘Socrates loves his son’ as nugatory (nugatorium) when Socrates ceases to have a son. The context makes it clear that

\textsuperscript{36} Introductiones Montanæ minores, in De Rijk 1962-7, ii(2), p. 19.
\textsuperscript{37} Paul of Venice 1499, \textit{Logica magna}, f. 101.
\textsuperscript{38} Bonaventure 1882-1902a, Dist. 41, art. 2, q. 2.
\textsuperscript{39} Peter of Ailly 1490, q. 11, art. 1, C-D.
\textsuperscript{40} In De Rijk 1962-7, ii(i), pp. 362-3.
The semantics of propositions

The semantic of propositions

'nugatory' means the same as 'neither-true-nor-false'. There are, therefore, assertibles which, according to the circumstances in which they are asserted (iuexa rei variationem), can repeatedly begin and cease to be either-true-or-false. Apparently the assertible is here taken as belonging to the sentence-type.

The bearers of logical relations

As to the question of the bearers of logical relations, an interesting distinction is found in the *Tractatus Anagnosti*.\(^1\) Such a logical law as the law of the conversion of negative universal statements may be formulated about things (No man is a stone; therefore no stone is a man), about propositions (The proposition 'No man is a stone' is true; therefore the proposition 'No stone is a man' is true) or about assertibles (It is true that no man is a stone; therefore it is true that no stone is a man). In practice, though, logic was done mainly in the first way. The relevance to logic of the question of the nature of the bearers of truth and falsity becomes clear when one considers the consequences of such a *complexum* theory as was held by Robert Holcot.\(^2\) According to him a proposition which is not actually formed cannot be true or false. Consequently, such logical rules as 'Some proposition is true; therefore its contradictory is false' apply only to those cases in which the proposition concerned really exists. Without this presupposition of existence the rules do not hold, for it is quite conceivable that, for example, the true proposition 'You run' is the only proposition in existence, and then it does not follow that its contradictory is false, since that contradictory has not been formulated. Walter Burley\(^3\) pointed out that if this view were correct, it would be impossible for a debater to get involved in a contradiction. For given that the affirmative proposition and the negative proposition do not exist at the same time, the first is not true when the second is false and the second is not false when the first is true. Moreover, every disputation becomes pointless, since the respondent cannot react to the propositions that are propounded by his opponent. As an answer to this difficulty Burley maintains that the mind can understand a proposition which is abstracted from particular utterances, just as it can think of a lion or an elephant in general without conceiving of a particular lion or elephant. In the same way as the word 'homo' uttered by me and the word 'homo' uttered by you have something in common – the universal

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\(^1\) In De Rijk 1962–7, ii(2), p. 236.
\(^2\) Courtenay 1971, p. 15.
\(^3\) Walter Burley 1497, ad Cat. 14\(^b\)12.
nature of the word that exists in both particular utterances and is dis-
tinguishable from them — so the mind can understand a proposition which
is the universal nature common to different particular utterances. It is this
kind of abstract proposition which both the respondent and the opponent
in a disputation have before their minds; by means of this universal it can be
explained that a debater contradicts himself, because the universal is some-
thing that remains the same throughout the debate and can be first con-
ceded and then denied.

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BEZEICHNEN UND BEHAUPTEN¹

Zusammenfassung

Summary
On the level of the contents of such complete speech acts as asserting, asking, ordering, and wishing a problem arises which is very similar to the much discussed problem of universals. On the one hand, there seem to be good reasons to assume a peculiar kind of being for that which is asserted (asked, ordered, wished), a kind of being that is different from the way in which denoted things exist. On the other hand, the ontological unclarity of such states of affairs easily leads to theories which, in some way or other, try to replace the suspect notion of an asserted state of affairs by the less objectionable notion of a denoted thing. Already in ancient and medieval philosophy noteworthy arguments were adduced for each of these views.

I

Diese verschiedenen Charakterisierungen des vollzogenen Sprechakts stützen sich auf gewisse Indizien, welche in den Worten selbst, im Kontext oder

¹ Vortrag, gehalten an den Universitäten Graz, Innsbruck und Salzburg im Mai 1973. [Note that the text has been retyped. The pagenumbers of the original have been adopted between square brackets — E.P. Bos].
in der Situation vorhanden sind, meistens auf eine ziemlich implizite Art und Weise. Unter Umständen aber können diese Indizien vom Sprecher selbst deutlicher hervorgehoben werden. Er wird dann anstatt "Peter ist vernünftig" sagen "Ich behaupte, daß Peter vernünftig ist"; anstatt "Ist Peter vernünftig?" "Ich frage, ob Peter vernünftig ist"; anstatt "Peter, sei vernünftig" etwa "Ich bitte, Peter, daß Du vernünftig bist"; und anstatt "Wenn Peter nur vernünftig ist" "Ich hoffe, daß Peter vernünftig ist".


Obgleich ich gesellschaftlich sehr einfache Beispielsätze gewählt habe, ist es nicht schwer zu zeigen, daß auch diese ziemlich unkomplizierter scheinenden Fälle schon mehr als genug Probleme liefern, um die Sprachphilosophen hinreichend zu beschäftigen. Die drei Teil-Sprechakte, die wir gerade unterschieden haben, vollziehen wir zwar fortwährend in der Alltagspraxis, nämlich so oft wir einem Hörer zu verstehen geben, daß wir etwas behaupten oder fragen, etwas befehlen.

Ein letztes Problem, das ich erwähnen möchte, ist etwas anderer Art. Wenn jemand unter normalen Umständen einen Sprechakt des Behauptens vollzieht, scheint es immer etwas zu geben, das behauptet wird. Wir könnten das den behaupteten Sachverhalt oder den Aussage-Inhalt nennen, zum Beispiel: daß Peter vernünftig ist. Weil es leider auch falsche Aussagen gibt, ist es nicht möglich, diesen behaupteten Sachverhalt mit dem, was in der außersprachlichen Welt der Fall ist, zu identifizieren. Auch wenn Peter in Wirklichkeit nicht vernünftig ist und der Sachverhalt, daß Peter vernünftig ist, deshalb nicht zu den Tatsachen gehört, scheint der falsche Sachverhalt doch irgendwie vorhanden zu sein, wäre es nur als Objekt der Haltung des Behauptens. Auf dieselbe Weise

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3 In: *Zeitschrift für Philosophie und philosophische Kritik*, NF 100, 1892, S. 25-50; das Zitierte steht auf S. 41.
I


II

Für eine richtige Formulierung der angedeuteten Probleme – und a fortiori natürlich für ihre Lösung – ist die Entwicklung eines adäquaten Begriffsapparats von größter Wichtigkeit. Man könnte sogar sagen, daß hier die Bildung einer treffsichereren Terminologie wenigstens die halbe Arbeit ist. Für Philosophen, welche sich diesen Aufgaben widmen, dürften die Versuche früherer Generationen, welche sich mit gleichen Fragen beschäftigten, lehrreich und interessant sein. Ich hoffe, das im Folgenden anhand einiger Beispiele illustrieren zu können.

In der Zeit PLATONs wurde viel diskutiert über die paradoxen These, daß falsche Aussagen unmöglich sind. Einer der Wege, die zu diesem Paradoxon und von dort zu einer unbequemen Aporie zu führen schienen, war eine gewisse Manipulation mit dem Zeitwort λέγειν (légein). Dieses vieldeutige Wort kann im Griechischen verwendet werden für einen Sprechakt, worin man mit einem Sprachausdruck auf etwas hinweist, aber auch für den Sprechakt des Behauptens. Wenn nun „auf etwas hinweisen“ im selben Sinne aufgelaßt wird wie die Zeitwörter „berühren“, „sehen“ und „hören“, welche man oft Erfolgszeitwörter nennt, dann folgt logisch, daß es unmöglich ist, auf etwas hinzuweisen, das es gar nicht gibt; genau so wie man nicht etwas berühren, sehen oder hören kann, das es nicht gibt. Auf griechisch gesagt: λέγειν τὸ μὴ ὅν (légein tò mè ón) – hinweisen auf etwas, das es nicht gibt – ist eine Unmöglichkeit. Auf Grund der Mehrdeutigkeit des Wortes λέγειν und auch des Wortes ὅν, kann man daraus leicht diese erste Deutung des Ausdrucks λέγειν τὸ μὴ ὅν durch eine andere ersetzen, nämlich durch „heben, was nicht der Fall ist“, und dann folgern, daß dies gleichfalls unmöglich ist.

In einem seiner Spätdialoge, dem Sophistes, hat PLATON versucht, diesen Übergang von der einen Bedeutungsnuance zur anderen durch eine terminologische Differenzierung abzusperren. Er macht dort (261 – 264) einen scharfen Unterschied zwischen ὄνομαζειν (onomázein) und λέγειν, zwischen Bezeichnen und Behaupten. Auf der Ebene des Bezeichnens stehen dem Sprecher zwei Arten von


Nach ARISTOTELES sind die Ausdrücke der gesprochenen Sprache konventionelle Zeichen von dem, was einem vor der Seele steht. Mit vereinzelten Gedanken korrespondieren ὄνοματα und ἰδέα solche Namen und Prädikat-Ausdrücke sind weder noch falsch. Ein Gedankenkomplex dagegen, worin eine Opera-
tion der Vereinigens oder Trennens vollzogen worden ist, wird ausgedrückt durch einen λόγος ἀποφαντικός (lógos apophantikós), eine Rede, worin eine gewisse Meinung geäußert wird. Ein solcher Behauptungssatz unterscheidet sich von anderen vollständigen Äußerungen, zum Beispiel einem Gebet, dadurch, daß nur er wahr oder falsch genannt werden kann.


Über dieses Verhältnis zwischen dem Sprechakt des bloßen Prädizierens und dem Sprechakt des Behauptens oder anderen Sprechakten finden wir einige höchst in-


Wie dem auch sei, ABAELARD hat hier den Unterschied zwischen dem Sprechakt des Prädizierens und dem Sprechakt des Behauptens in aller Klarheit hervorgehoben. Das bloße Verbinden eines Prädikats mit einem Subjekt ist etwas anderes als sagen oder behaupten, daß ein Prädikat in einem Subjekt inhäriert. Für dieses Behaupten verwendet ABAELARD meistens das Zeitwort *dicere*. Und in seinen Glossen zu ARISTOTELES' Abhandlungen über Logik bildet er davon die Bezeichnung *dictum* für dasjenige, was behauptet wird, den behaupteten Sachverhalt oder den Aussage-Inhalt. Es kommt mir nicht unwahrscheinlich vor, daß

5 Herausgegeben von B. GEYER, Peter Abaelards philosophische Schriften (Beiträge zur Geschichte der Philosophie und Theologie des Mittelalters XXI, 1-3), Münster 1919-1927.

ABAELARDS Gedankengang kann, glaube ich, folgendermaßen rekonstruiert werden:
1) Im Lateinischen werden passive Verbalformen häufig unpersönlich verwendet: *curritur* zum Beispiel heißt wörtlich “(Es) wird gelaufen”, *ad ecclesiam ventum est* heißt wörtlich “(Es) ist zur Kirche gekommen worden”. Wir übersetzen dann “Man läuft” und “Man ist zur Kirche gekommen”, aber eigentlich sind es subjektlose passive Sätze. Im Lateinischen ist es deshalb unmöglich zu sagen *aliquid*
Ill Bezeichnen und Behaupten 9

curritur ("Etwas wird gelaufen") oder zu fragen quid curritur? ("Was wird
gelaufen?"). Das sind einfach keine grammatischen Ausdrücke, weil aliquid und
quid in dieser Form nicht mit einem unpersönlichen Passiv verbunden werden
können.

2) Dasselbe gilt nun nach ABAELARD auch für solche unpersönliche aktive
Formen wie accidit, contingit oder evenit, die wir für unsere Zwecke vielleicht mit
"(Es) geschieht", "(Es) trifft sich" übersetzen dürfen. Wenn accidit rein unpersönlich
verwendet wird (und nur dann), sind aliquid accidit und quid accidit?
ungrammatische Verbindungen. Wenn wir also den Satz haben accidit Socratem
legere librum – etwa "Es trifft sich, daß Sokrates ein Buch liest – , dann kann das
Komplement Socratem legere librum – " daß Sokrates ein Buch liest – nicht durch
aliquid ersetzt werden; denn daraus würde sich eine ungrammatische [50] Ver-
bindung ergeben. Folglich kann es auch nicht als ein aliquid oder als irgendeine
Sache charakterisiert werden. Was sich trifft, ist eben ein verbales Geschehnis
und nicht eine Sache, die mit aliquid bezeichnet werden kann. Die richtige Kon-
struktion wäre vielmehr aliquid accidit esse, "Es trifft sich, daß etwas der Fall
ist".

3) Als nächster Schritt wird nun ein Ausdruck wie verum est, "(Es) ist wahr", den
unpersönlichen Formen accidit, contingit und evenit gleichgestellt. Wenn wir
sagen verum est Socratem legere librum – "Es ist wahr, daß Sokrates ein Buch
liest"–, dann kann man das nicht als aliquid verum est auffassen, sondern nur als
verum est aliquid esse: "Es ist wahr, daß etwas der Fall ist".

Aus diesen Überlegungen folgt, daß ein dictum oder ein behaupteter Sach-
verhalt – zum Beispiel: daß Sokrates ein Buch liest – nicht ein aliquid oder eine
bezeichnete Sache ist, sondern vielmehr eine gewisse Art und Weise, wie Sachen
sich zu einander verhalten.

Was ABAELARD hier meint, könnte vielleicht auch folgenderweise zu-
sammengefaßt werden. Obgleich in den Sätzen "Was ist rund?" und "Was ist
passiert?" dasselbe Wort "Was" verwendet wird, ergibt sich aus den möglichen
Antworten, daß trotzdem ein Kategorie-Unterschied vorliegt. Auf "Was ist
rund?" paßt die Antwort "Der Tisch"; auf "Was ist passiert?" kann man nicht
antworten "Der Tisch", sondern nur etwas wie "Der Tisch ist zusammenge-
brochen". Und ähnlicherweise paßt auf die Frage "Was ist wahr?" nicht die Ant-
wort "Der Tisch", sondern nur "Der Tisch ist zusammengebrochen" oder noch
besser "Daß der Tisch zusammengebrochen ist".

Es ist deutlich, daß ABAELARD viel daran gelegen war, die Eigenart des
behaupteten Sachverhalts ins Licht zu stellen. Das Resultat ist übrigens vor-
wiegend negativ, in dem Sinne, daß er zwar plausibel macht, daß der behauptete
Sachverhalt nicht eine bezeichnete Sache sein kann; aber wenn es darauf an-
kommt, den ontologischen Status des dictums mehr positiv zu präzisieren, läßt er
den neugierigen Leser eigentlich im Stich. Er überzeugt uns vielleicht davon, daß es so etwas wie behauptete Sachverhalte oder Aussage-Inhalte geben muß und daß es Entitäten *sui generis* sind, aber was sie genau sind, enthüllt er nicht.

IV

Eine solche Lage führt leicht zu Skepsis. Wenn gewisse Entitäten postuliert werden, ohne daß ihr ontologischer Status befriedigend erläutert werden kann, sind argwöhnische Geister geneigt zu fragen, ob es wirklich notwendig ist, sie in das Seinsinventar aufzunehmen. Ist es vielleicht doch nicht möglich, den gegebenen Tatsachen Recht zu tun, ohne diese Extra-Entitäten einzuführen? Kurz, man ist geneigt, das Ockhamsche Rasiermesser in die Hand zu nehmen. Und das ist genau das, was im vierzehnten Jahrhundert in nominalistischen Kreisen geschehen ist. Zum Schluß werde ich versuchen, in großen Zügen zu beschreiben, was für eine Theorie dabei herauskam.


dieser Unterschied eigentlich unwichtig. Mein Gedanke ist richtig oder wahr, wenn es in der Außenwelt ein Wesen gibt, das zugleich Sokrates und laufend ist, und der Gedanke ist falsch, wenn es ein solches Wesen nicht gibt. Mit anderen Worten, was in der Welt eine Wortgruppe mit Kopula wahr macht, ist genau dasselbe wie dasjenige, was eine Wortgruppe ohne Kopula zutreffend macht: nämlich Sokrates, insofern er läuft. Wenn eine Wortgruppe ohne Kopula zutreffend ist und eine Wortgruppe mit Kopula wahr, dann ist genau dasselbe in der Außenwelt vorhanden; die bezeichnete Sache und das Behauptete fallen also zusammen. Dieser Schluß konnte um so leichter gezogen werden, als sowohl für das Behauptete als auch für die bezeichnete Sache dasselbe Wort *significatum* verwendet wurde. Man war sich übrigens bewußt, daß in den zwei Sätzen "Socrates current" *significat (= nominat, "bezeichnet") Socratem currentem* und "Socrates currit" *significat (= dicit, "behauptet") Socratem currere* die syntaktische Konstruktion verschieden ist. Aber der Unterschied wurde eben als nur syntaktisch betrachtet. Was den Bezug auf die Außenwelt betrifft, ist der behauptete Inhalt, daß Sokrates läuft, nichts anderes als Sokrates, insofern er läuft.

Es ist klar, daß hier der Unterschied zwischen Bezeichnen und Behaupten fast völlig verschwindet; auf jeden Fall sehen diese Philosophen keinen Grund, den behaupteten Sachverhalt als etwas von der bezeichneten Sache vollkommen Verschiedenes anzuerkennen. Die wahre Sachverhalt, daß Sokrates läuft, ist einfach dieselbe Entität wie der laufende Sokrates.


Natürlich haben auch die Nominalisten nicht alle Schwierigkeiten überwunden. Aber für diejenigen, welche mit PLATON, ARISTOTELES und ABAE-LARD eine scharfe Trennung zwischen Bezeichnen und Behaupten und zwischen
bezeichneter Sache und behauptetem Sachverhalt befrüworten, ist der Himmel ebensowenig unbewölkt. Wie widerspenstig das Problem, womit beide Parteien ringen, ist, erkennt man daran, daß es noch immer eine der aktuellsten Fragen der heutigen philosophischen Logik und Sprachphilosophie ist. Ich hoffe sogar gezeigt zu haben, daß die heutige Diskussion über das Für und Wider beider Standpunkte mitunter einige Anregung aus den alten Schriften scharfsinniger Pioniere schöpfen könnte.
ADAM WODEHAM ON THE MEANING OF DECLARATIVE SENTENCES

1. As is well-known, Aristotle, in the Categories 1 a 16, makes a distinction between things that are said with a specific kind of combination (symplokē, complexio) and things that are said without any combination. Such complexa and incomplexa are primarily natural signs, that is, acts of thinking or conceptions, and secondarily conventional signs, the spoken or written expressions belonging to a particular language. The simple acts of thinking and their corresponding expressions are directed at the substances and accidents in the outside world which figure in Aristotle's list of categories. The complex conceptions are acts of thinking of things in a compounding or dividing way which find their appropriate expression in affirmative or negative declarative sentences. These acts of thinking things together or apart may be mere predications — when a proposition is only formed or entertained — or they may be accompanied by an act of assenting or dissenting. It is at the level of these acts of predicative or of predicative and judicative thinking that the notions of truth and falsity make their appearance.

The assumption that complex conceptions which are true have some correlate in the world outside thought and language that renders them true naturally leads to the question whether or not this correlate of a complex conception differs from the substances and accidents at which simple acts of thinking are directed in some manner which parallels the fundamental difference between the two kinds of conception. In the 12th century, an affirmative answer to this question was given by Peter Abelard and his followers, who held that the dictum or that which is asserted to be the case is of such a nature that it cannot be characterized by any of the ways of thinking or speaking which are peculiar to the categories of substance and accident (cf. Nuchelmans 1973: 139-76; Tweedale 1976). In 1342-43, a somewhat similar doctrine was put forward
by Gregory of Rimini (1522), namely, that the adequate significate of a declarative sentence, whether mental, spoken, or written, is something that is signifi-
able only by means of a complex conception (*tantum complexe significabile*). Until recently, our knowledge was limited to these two points, lying rather far apart and apparently not connected by any continuous line of thought. Part of such a line, however, has become visible since the appearance of Scheijpers' (1970, 1972) articles on Holkot’s polemic with William Crathorn and the edition of a highly interesting text of Adam Wodeham by Gál (1977). Both Crathorn and Wodeham (c.1298-1358) advocated views of the same general type as Gregory’s doctrine; their relevant writings are dated several years before Gregory’s commentary on the *Sentences*; and it is certain that Gregory was well acquainted with Wodeham’s work (cf. Courtenay 1978:123-33). Perhaps, then, the historical perspective on this particular problem may be broadened by inquiring into the kind of background against which the main features of Adam Wodeham’s thesis about the meaning of a declarative sentence become most intelligible. In this article I shall suggest that Wodeham’s thesis should be viewed in the light of a debate whose beginnings lie as far back as the 12th century.

2. The core of that debate was formed by the following problem. Those who lived before the coming of Christ believed that he would be born of a virgin, would suffer, would rise from the grave, and would ascend to heaven, whereas those who live after the coming of Christ believe that he was born of a virgin, suffered, rose from the grave, and ascended to heaven. Notwithstanding these differences in the tenses of the verbs, however, that which is believed is supposed to be the same for all believers. Similarly, how can the doctrine that if God knows something at a certain time, he has always known it and will always know it, be reconciled with the fact that God has formerly known that I would be born, but does not know now that I will be born? A solution to this particular problem concerning identity in diversity was sought in two directions. Some defended a *res*-doctrine and held that the actual object of faith is the thing signified by the varying natural and conventional signs used in the formulation of some article. The thing signified was usually indicated by such phrases as *nativitas Christi, passio Christi*, which are conveniently vague about its exact ontological status. They were intended to bring out two cardinal features of the *res*-doctrine. Since they do not contain the *complexio* which is conspicuous in such constructions as *Christum nasciturum esse* and *Christum natum esse*, they are the right descriptions of that which is the common object of assent of those who live in this world and those who enjoy the eternal vision; the latter, of course, know without any predicative combination. Moreover, the absence of *complexio* implies the absence of any *tempus consignificatum*, that is, of any time that is consignified by the tense of the verb. This is a proper
reflection of the fact that something that is first future, then present, and finally past may nevertheless retain its full identity; this identity is independent of the various points of time at which the thing happens to be signified.

Others, however, stressed the necessity of considering the object of faith as a complexum. The complement of verbs of believing is like the complement of verbs for other propositional attitudes in that it involves a predicative combination; and only such a complexum as Christum natum esse can be true. The adherents of the complexum-doctrine allowed for a difference between the ways in which the articles of faith are apprehended by those who live in this world and by those who are in heaven. But they denied that this difference between modes of apprehending, namely, by means of a complexio and without any complexio, causes any difference in that which is apprehended. One and the same thing may be apprehended both by a form of thought that involves predication and by a simple conception (... complexum et incomplexum non faciunt diversitatem a parte rei comprehensae, sed a parte modi comprehendendi, quia unum et idem potest apprehendi sub modo complexionis et incomplexionis. ... Complexum et incomplexum non dicit variationem a parte rei, sed solum a parte modi ... [Bonaventura 1887:517]). Whereas the advocates of the complexum-theory agreed on the indispensability of a complexio, at least for believers living in this world, they had different opinions concerning the relevance of the tempus consignificatum. One group, called nominales, drew attention to the fact that the forms albus, alba, album are normally considered as one nomen, in spite of the different endings. The principal signification is determined by the unity of the thing signified (unitas rei significatae); the difference in gender is purely accidental. In the same way, they argued, the differences shown by such complexa as Christum nascitum esse, Christum nasci, and Christum natum esse are irrelevant to the principal signification which is determined by the unity of the thing signified. The time that is consignified by the tense of the verb is external to the actual event; the variations in tense indicate only that the same event first belongs to the future, then to the present, and finally to the past, without contributing in any way to the identification of the event itself. According to the nominales, therefore, the article of faith may be regarded as a sort of archi-complexum whose signification is that which is left as the common signification of, for instance, Christum nascitum esse, Christum nasci, and Christum natum esse when the accidental significations of the tenses of the verb are ignored. Opponents of the nominales, however, pointed out that a view which altogether disregards the tempus consignificatum has the unacceptable consequence that no distinction can be made between, for example, the orthodox belief that the incarnation of Christ has already occurred and the heresy that it will occur in the future. The nominales fail to observe that a complexum does not signify a thing
ISO [res] but a way of being (modus se habendi [Bonaventura 1882:740]), not just a doing (actus) but a way of doing (modus actus [Petrus de Tarantasia 1652: 343]). For the way in which something exists or is done the time which is consignified by the tense of the verb is essential; it is, therefore, wrong to take no notice of the differences shown by such complexa as Christum nasciturum esse, Christum nasci, and Christum natum esse, and to count them as one article of faith.

This brief survey of the chief positions that were upheld in discussions concerning the identity of the article of faith and the immutability of God’s knowledge (for details see Nuchelmans 1973:177-89) has no other purpose than to show that three theses occupied a crucial place in generally known debates which started long before the first half of the 14th century. These theses are:

(a) One and the same thing may be the object both of a complex apprehension and of a simple apprehension.

(b) The time consignified by the tense of the verb is irrelevant to the identity of that which is signified by a complex apprehension.

(c) That which is signified by a complexum is not a thing but a mode of being.

3. Faith and divine knowledge are rather special instances of the generic act of judging that something is the case. Another kind that was apt to interest both theologians and philosophers is the assent which results from a discursive argument. It is especially in connection with such scientific knowledge that William of Ockham maintained a complexum-theory concerning the object of assent; his view is summarized by Adam Wodeham in the following manner (Gál 1977:81-82). First comes the simple act of apprehending one or more things separately. Then a complexum is formed which is an act of thinking these things together or apart in a merely apprehensive proposition. The third step consists in a simple apprehension of that formed complexum. Lastly, an act of assenting is directed at the formed and apprehended complexum. From about 1320 onwards, this complexum-theory of the object of assent was vigorously attacked, first by Walter Chatton and a few years later by William Crathorn and Adam Wodeham. While at least Chatton and Wodeham agreed with Ockham that an act of assenting or dissenting presupposes the formation of a complex apprehension that is the cause of the assent or dissent, they denied that the act of judging is directed at the complexum. According to them, the formed complexum need not be grasped in a reflexive act of simple apprehension; as a rule, one assents directly to that which is signified by the formed complexum, without any reflexive awareness of the proposition itself. Further, both Crathorn (Schepers 1972:123) and Wodeham (Gál 1977:78, 82) pointed
out that scientific knowledge is of the causes of things and that in general the causes and effects of things are not declarative sentences, but rather that which is the significate of such sentences in the outside world. Whereas, then, Chatton and Wodeham found themselves at one in opposing Ockham’s *complexum*-theory and in defending a world oriented doctrine concerning the object of assent, yet they had very different ideas about the nature of that which is signified by a declarative sentence.

4. Walter Chatton’s version of a *res*-doctrine (cf. Reina 1970:48-74), which Wodeham subjects to a thorough examination, may be summarized in three fundamental tenets. Whereas in the traditional debates concerning the identity of the article of faith the *res* which is the alleged object of assent was often indicated by such phrases as *nativitas Christi, passio Christi*, Chatton prefers to take it as the thing signified by the subject of the complex apprehension that is presupposed by an act of judging and is the cause of that act. When, for instance, someone believes that God is good, he forms a complex apprehension, corresponding, let us say, to the declarative sentence *Deus est bonus*, of God; once formed, this complex apprehension – which remains purely instrumental and is not itself put before the mind in a reflexive act of simple apprehension – causes an act of assenting to the thing signified by the apprehensive proposition, which, according to Chatton, is God. Opponents were not slow to point out that on this interpretation the assent prompted by *Deus est bonus* and the dissent prompted by *Deus non est bonus* would be directed at exactly the same thing, namely, God. Moreover, it was felt that such a view was bound to lead to incongruous constructions of the type *Assentio deo*. In fact, however, Chatton’s theory – which, I think, was developed to the full by Andreas de Novo Castro (1514) around 1360 – was more subtle than his adversaries would have us believe. He understood thesis (a) – that one and the same thing may be the object both of a complex apprehension and of a simple apprehension – in such a sense that the diverse conceptual forms by means of which man thinks and talks about the world are wholly confined to the mind and should in no way be projected into the outside world. As Wodeham put it: *quaesit res, quantumcumque simplex, videtur posse significari complexe et incomplexe. Igitur non oportet quod sit ibi differentia in significato sed in modo significandi tantum* (Gål 1977:87). Similarly, the propositions *Deus est bonus* and *Deus non est bonus* are different complex apprehensions of God; but there is no reason to assume that the divergent ways in which the mind conceives of a thing are paralleled by different correlates in the world. In both cases there is one and the same thing which is apprehended in different ways. Since, however, the modes of conceiving that one thing are different and the act of assenting which is directed at that thing is caused by the preceding complex apprehension,
it is only natural that the mind will assent to God in so far as he is conceived by the proposition *Deus est bonus* and will not assent to God in so far as he is conceived by the proposition *Deus non est bonus*. The fact that the particular complex apprehension determines the assent or dissent with respect to the thing signified is reflected in such constructions as *Assentio deum esse bonum* and *Dissentio deum non esse bonum*. Still, if it is asked what the accusative-plus-infinitive phrases *deum esse bonum* and *deum non esse bonum* signify with regard to the outside world, the correct answer is that they signify, respectively, God in so far as he is good and God in so far as he is not good, and therefore, in the last instance, God. In other words, the act of assenting and the act of dissenting are both directed at the same thing, but under different conceptions. The object of assent or dissent is the thing of which a certain conception is true or false. Chatton’s view may be thought of as suggested by such nominative-plus-infinitive constructions as *Deus creditur bonus esse*, understood as “God is believed-to-be-good”.

In addition to the theses that the significate of a complex apprehension is the thing signified by the subject-term and that the *complexio* which is characteristic of the apprehensive proposition that precedes an act of judging is only in the mind and should not be projected into the outside world, Chatton’s *res*-doctrine comprised a third thesis, regarding the time consignified by the tense of the verb. One of the arguments he adduced against Ockham’s *complexum*-theory concerned the three propositions *Deus erit incarnatus*, *Deus est incarnatus*, and *Deus fuit incarnatus*. If it is conceded that these propositions are different, because of the times consignified by the tenses of the verb, and that those propositions are the immediate object of belief, then it would follow that the Christian faith varies according to the positions in time occupied by the believers. Chatton then mentions an objection which might be raised by opponents, in the form of a *tu quoque*-argument. If the three propositions about the incarnation are different and if, as Chatton holds, those propositions cause the act of believing, he too will have to admit that those acts of believing are bound to vary. In defending himself against this objection, Chatton contends that propositions will cause different acts of assenting to the thing signified only when the subject-concept or the predicate-concept is different; for in that case the propositions will be more or less evident and the acts of assenting will vary accordingly. But the three propositions about the incarnation of Christ have the same subject and predicate; they differ only in the consignification of the copula. The consignification of the copula, however, does not influence the degree to which a proposition is evident; therefore, since the assent caused by a proposition corresponds to the evidence of the proposition and not to the proposition considered in itself, propositions that differ only in the consignification of the copula will not cause different acts
of assenting (Reina 1970:61, 63, 73-74). This thesis is no doubt a variant of thesis (b), that the time consignified by the tense of the verb is irrelevant to the identity of that which is signified by a complex apprehension. On the whole, Chatton's position may be considered as a particular elaboration of the theses (a) and (b) which we found among the points that were at issue in the traditional debates about the identity of the articles of faith and the immutability of God's knowledge.

5. Adam Wodeham sided with Chatton in the attack on Ockham's complexum-theory of the object of assent. Although an act of assenting presupposes the formation of a complex apprehension by which it is caused, the act of assenting is not directed at the formed complexum, that is, at the propositional sign, but at that aspect of the world outside thought and language that is signified by the mental proposition. At the same time, however, he rejected the two variants of theses (a) and (b) that had been adopted by Chatton. He admits that there is a sense in which every thing can be signified both by an incomplexum and by a complexum, but he denies that any thing is signifiable by a complexum in such a way that the complexum is the adequate sign of precisely that thing (sed dico quod non est significabilis signo sibi adaequato complexo [Gál 1977:90]), or, what comes to the same, in such a way that the thing is the adequate or total significate of the propositional sign. This denial is based on the consideration that, if the copula or nota compositionis has any signification at all, it will always be the case that a proposition signifies more than is signified by the subject-term and the predicate-term. In particular, the copula signifies the future, the present, or the past. Consequently, it is simply false that a variation in the copula does not affect the act of assenting, since each of three propositions with the same subject and the same predicate but a different copula may be true while the other two are false. The acts of assenting to that which is signified by the proposition Filius dei est incarnatus and to that which is signified by the proposition Filius dei incarnabitur cannot be only numerically different; for the first belief is an orthodox article of faith and the second belief is a heresy (Gál 1977:77-78). For the same reason it is wrong to argue that God and that God exists (deum esse) are the same or that an angel and that an angel exists (angelum esse) are the same because we need not posit anything but an angel for the truth of the proposition that an angel exists. This reasoning leads to the consequence that an angel and that an angel has existed (angelum fuisse) or that an angel will exist (angelum fore) are also the same, since as far as things are concerned nothing but an angel is required for the truth of Angelus fuit or Angelus erit (quia nullam aliam rem oportet ponere ad hoc quod angelus fuit vel erit [Gál 1977:90]). This means that angelum esse, angelum fuisse, and angelum fore would be identical, which is undoubtedly false.
Wodeham’s rejection of the *complexum*-theory and of the theses (a) and (b) which are characteristic of Chatton’s *res*-doctrine hardly left him any other choice but embracing thesis (c). If the act of assenting is not directed at the propositional sign but at its significate in the outside world and if that significate is more than the things signified by the subject-term and the predicate-term in that it essentially includes a *complexio* and the time consignified by the tense of the verbal sign of that *complexio*, it is a natural conclusion to hold that some version of thesis (c) must be correct. The crucial point at which Wodeham differs from Chatton is that he feels compelled to project the constitutive features of the propositional sign, the *complexio* and the time consignified by the copula, into the outside world; to the mode of signifying in the mind that is typical of a proposition there corresponds a mode of being in the world which is just as peculiar and *sui generis* as the propositional mode of signifying itself. This correlate in the world, or, as Aristotle calls it, that which underlies an affirmation or negation (*Categories* 12 b 6-16), is a *sic esse a parte rei* which does not depend upon any act of the mind or upon any sign. But when an act of the mind is directed at it, this mode of being of things is significable only by a complex thought that apprehends things in a compounding or dividing way and is expressed by means of a declarative sentence. It is *quoddam significabile per complexum*, namely, that something will be, is, or has been a so-and-so or such-and-such. According to Wodeham, it is a grave category-mistake to attempt to characterize the significate of a proposition by means of such terms as *aliquid, nihil, quid, substantia, accidens*. The question whether that man is an animal (*hominem esse animal*) is something or nothing is just as inept as the question whether a people is a man or a non-man (*populus aut est homo aut non homo?* [Gál 1977:89]). In a way that is vaguely reminiscent of Abelard’s keen observations concerning the peculiar nature of the *dictum*, Wodeham drives home the point that the significate of *Homo est animal* is not a proper object for the question “What is it?”. What a proposition signifies — and what one assents to — is what the world is like or how things are, not something, but that something is the case (*non est quid, sed est esse quid* [Gál 1977:89]). If an elucidation of such a phrase as *hominem esse animal* is needed, the only appropriate way of providing it is by means of another phrase which brings to mind the same mode of being, for instance, *animal rationale esse substantiam animatam sensibilem* (Gál 1977:88, 90).

The fundamental difference between the views advocated by Chatton and Wodeham may be summed up as follows. For Chatton, the object of assent is the thing of which the proposition formed by the mind is a complex sign and of which that proposition is true; from this point of view, there is no need to ‘propositionalise’ the world. For Wodeham, on the other hand, the object of assent is the way things are in the world when the world conforms to the
mode of signifying that is characteristic of the proposition formed by the mind.

6. When the foregoing picture is approximately right, it may be concluded, I think, that, if there is a continuous line of thought between Abelard and Adam Wodeham, it is most likely to lie in the debates concerning the identity of the articles of faith and the immutability of God's knowledge. One author who deals extensively with these problems and who in that connection explicitly mentions the *modus se habendi*-theory is Bonaventure, whose commentary on the *Sentences* Wodeham no doubt knew (cf. Courtenay 1978:42). Another author who should be taken into consideration is, perhaps surprisingly, William of Ockham. Because the *complexum*-theory as it was championed by Ockham in his commentary on the *Sentences* was so often selected as target by opponents of that theory, it is easily overlooked that in his *Quodlibeta* (1491: III, q.6; IV, q.17; V, q.6) Ockham unreservedly admitted that there are two kinds of acts of knowledge and belief. One kind, indeed, has for its object a *complexum* which is apprehended as well as formed. In that case the accusative-plus-infinitive phrase in *Scio hominem esse animal* is to be taken according to material supposition: I know the sentence *Homo est animal*. Since that sentence is a thing, it is quite proper to say that I assent to something (*Assentio aliquid*); for a declarative sentence is precisely the sort of thing that is a suitable object for an act of assenting. According to Ockham, it is about this kind of act that philosophers commonly dispute. But there are also acts of knowledge and belief which are not directed at a *complexum* which is apprehended as well as formed, but rather at that which is signified by a propositional thought that is only formed. In such cases the accusative-plus-infinitive phrase in *Scio hominem esse animal* is to be taken according to personal supposition or in a signifying function: I know that man is an animal. Although the mental proposition whose formation is presupposed by these acts of assenting is a mode of apprehending singular things, those singular things cannot be the actual object of the act of assenting; for such combinations as *Assentio homini* or *Assentio animali* are not well-formed. What one knows or believes is that something exists or is such-and-such; that something exists or is such-and-such, however, is not a thing. In this sense, then, it may be said that nothing is believed or known (*Nulli assentio. Nihil scitur. Nihil creditur*). Now this is exactly the point at which Adam Wodeham could step in and elaborate his view that the object of assent and the total significate of the mental proposition which causes the assent or dissent is of such a nature that it eludes all attempts to characterize it in the familiar vocabulary of the Aristotelian categories.

I have no space to dwell upon the way in which Wodeham's theory is related to the views of his contemporary William Crathorn and of Gregory of Rimini. I just want to remark that the latter's conception of the *complexum significabile*
is somewhat less coherent than Wodeham's theory in that Gregory still tries to adapt words like *aliquid, res, ens* in such a way that they become applicable to the total signifcicate of a proposition. The resulting ambivalence made the theory more vulnerable, and that may be one of the reasons why later authors who had occasion to attack this type of doctrine usually chose Gregory's version as their target (cf. Nuchelmans 1973:243-71; 1980).
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Until Dr. Stanislav Sousedík kindly sent me a copy of Stanislaus of Znaim's treatise *De vero et falso* (edited by Vilém Herold, Czechoslovak Academy of Sciences, Prague, 1971), I was not even aware of the existence of that philosopher. Yet, in his native country he is rather well-known among historians of philosophy as one of the teachers of John Hus, whom he made acquainted with the ideas of the English reformer John Wyclif. Indeed, Stanislaus' indebtedness to Wyclif is so great that one of his major philosophical works, *De universalibus*, was wrongly attributed to Wyclif and published for the Wyclif Society (edited by M.H. Dziewicki, in Johannis Wyclif Miscellanea philosophica, II, London, 1905, pp.1-151). Wyclif, Stanislaus and Hus are representatives of a type of realism with respect to universals and propositional dicta of which several traces are already found in Walter Chatton, William Crathorn, and Walter Burleigh, in the first half of the fourteenth century. As this kind of doctrine concerning propositional dicta is still in need of further elucidation, it may be worthwhile to have a closer look at Stanislaus' treatise *De vero et falso*, in which the theory is expounded more systematically and clearly than in the somewhat confused and badly edited works of his master Wyclif. Moreover, some of Stanislaus' elaborations, notably those regarding false propositions, are interesting in their own right.

1. Three types of truth

According to Stanislaus (S 1971, 146; cf. S 1905, 36, and W 1909, 109. For full references see the bibliography at the end), truth is viewed differently by metaphysicians, logicians, and grammarians. When metaphysicians use such phrases as *verum aurum*, they mean that the thing possesses genuinely and purely the form by which it is what it is. By having the proper nature of gold it adequately conforms in its being to the preconception in the divine intellect upon which it depends (W 1909, 107; W 1891, 233). This kind of metaphysical or ontological truth is extended by Stanislaus to such cases as the fact
that a man is an animal (quod homo est animal; S 1971, 32), the fact that a man is white, and the fact that a man is blind. Human cognition naturally captures such realities in a propositional way, by means of composition, but in the actual world and in God's thought they are forms and may therefore be expressed by abstract nouns (nominaliter). The fact that a man is an animal is animality as a substantial form of the man, the fact that a man is white is whiteness as a positive accidental form of the man, and the fact that a man is blind is blindness as a privative accidental form of the man. Or, as Wyclif puts it (W 1909, 109), the sentence Mundum esse est verum is interpreted by the metaphysician in such a sense that the existence of the world - the nominal version of the accusative-plus-infinitive phrase - is true or real, that is, conforming to the way in which the first cause sees it (quod essentia mundi est vera, ut prima causa videt). This identification of facts with substantial or accidental forms which exist as universals in the outside world made it quite natural to transfer the use of verus in such phrases as verum aurum to its use in connection with, for instance, the fact that a man is an animal. Moreover, from this point of view it is not surprising that Wyclif explicitly states that the term ens equally applies to substances and accidents and to the significates of propositions. The expressions Ita est and Verum est, followed by an accusative-plus-infinitive phrase or a quod-clause, are synonymous with Ens est in the same position (W 1896, 24, 33-34, 125). As a matter of fact, practically all examples of a veritas metaphysice dicta given by Stanislaus are states of affairs which in human cognition are apprehended by means of the composition or division typical of a proposition.

With metaphysical truth, which is the mera et pura rei entitas vel forma, Stanislaus contrasts propositional truth, which is either the proposition itself or a certain characteristic in the proposition because of which it is called true. Whereas an ontological truth, which is the state of affairs as it really obtains, belongs to the realm of being and thus to the competence of the metaphysician, propositional truth has its origin in our saying that it is so (tenet se a parte dicentiae nostrae), by means of that composition or division of which the copula is the proper sign. We might also say that a propositional

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or logical truth is the ontological truth or fact in so far as it is appreciated in a propositional manner by the human mind. Or, as Wyclif puts it in connection with the sentence *Mundum esse est verum*, the logician interprets that sentence in a mixed way, namely, that *mundum esse* is a fact in the world as it is conceived of by the human mind (logicus autem concipit sic mixtim, quod mundum esse est verum ex parte rei, ut mens cogitat; W 1909, 109). Understood in the logician's sense, *mundum esse* is an *ens rationis* or *ens logicum*, that is, something in whose existence an act of the mind is essentially involved. As a logical entity, *mundum esse* is a kind of aggregate that consists of a fact in the world and the act of the mind by which it is apprehended, just as a *lapis visus* is an aggregate consisting of a real stone and the act of seeing that is directed at it.

Finally, Stanislaus distinguishes from the logical truth that is peculiar to *dicere* in the sense of mentally saying that something is the case, the grammatical truth that is connected with *significare* in the narrow sense of making known one's judgment to others, by means of a spoken or written declarative sentence. As he is extremely brief about grammatical truth and as it is in any case subordinate to logical truth, I shall leave it out of consideration here.

2. Ontological truth

The verb *dicere* was used most commonly for human acts of either mentally saying that something is the case or giving expression to such a judgment in spoken and written sentences and their mental images. The metaphor from conventional language to mental language that is inherent in this usage could easily be extended beyond the sphere of human activity. In explaining what ontological truths are, Stanislaus points out that they are ultimately grounded in divine thought, more in particular in the acts of inwardly seeing and saying that are ascribed to God's son. In this connection he draws a distinction between *veritas formalis* and *veritas obiectivalis* (S 1971, 134, 143), which is no doubt a variant of the well-known distinction between *conceptus formalis*, the act of conceiving, and *conceptus obiectivus*, that which is conceived.
While the active conceptions of the divine mind are constantly referred to by means of the verb dicere, it should not be overlooked that there is a fundamental difference between this dicere dei and our dicere humanum. God's inner sayings are performed according to his own nature (secundum deitatem, divinitus); and that means in particular that he does not make any use of propositions. Time and again it is stressed that the divine sayings can at least be negatively characterized by denying that in them any signs of a propositional nature are involved. When, for example, the divine word sees and says that every man is a man (quemlibet hominem esse hominem; S 1971, 45, 47), it does not employ any mental, spoken, or written proposition as human beings are forced to do. Since the truth that every man is a man can be nothing but humanity as it is common to every man, God's saying that every man is a man amounts to his being the exemplary cause according to which the universal form of humanity is in every man (veritatem communem, scilicet humanitatem, exemplat in quolibet homine).

Just as to every active conception there corresponds a passive concept, so God's sayings, which of course are always veridical and therefore formal truths, are matched by veritates objectivales, the things that are truthfully said in the formal acts. There is a perfect consonance between God's sayings and the passive truths said by him. And in the same way as the formal truth of the divine word cannot have any falsity as its opposite, it is impossible that any falsity would form the opposite of the truths said by the divine mind. Since God's conceptions determine what there is and in particular that the things which have being are what they are, the truth that is said by God coincides with the metaphysical truth that consists in the fact that a thing is what it is. And since the fact that things are what they are is nothing but their exhibiting the universal forms that make them conform to the divine preconceptions, nothing that is what it is can have any falsity in it. Considered from a metaphysical point of view, falsity is simply non-being; outside the use of human signs there is no place for it.

Occasionally the verb dicere was even applied to the veritas a parte rei that coincides with the passive truth said by God. When the human intellect gives its assent to a state of affairs as it is
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apprehended by an act of compounding or dividing, it does so in agreement or disagreement with the way in which a fact in the world judges and says that something is the case (sicut veritas a parte rei sententiat et dicit; S 1971, 168-169). Stanislaus explains this way of speaking by pointing out that the fact makes itself known or manifests itself entirely as it is (veritatem a parte rei se dicere objective et se dicere objective omnino sicut ipsa est). Elsewhere (S 1905, 164) he states that every concrete thing takes its being from an abstract form. For a white thing has its being from whiteness, because there cannot be a white thing unless whiteness says that it is white (non potest esse album nisi albedo dicat ipsum esse album). Universals outside the mind are substantial and accidental forms which make it the case that something is a certain substance or has a certain accident. That a thing is a man is due to its having the universal form of humanity; that a thing is white is due to its having the universal form of whiteness (S 1905, 29, 171-172). Especially in Wyclif's writings this is also expressed by the statement that an accident is the subject's being in a certain state or that heath is the subject's being hot (caliditas est subiectum esse calidum; W 1899, 123-124; W 1896, 32). When, therefore, whiteness says that something is white, it says or manifests itself, which means that it exhibits itself as instantiated in a subject, as a forma subiectata.

Next, it may be asked what exactly the class of veritates objectivales or veritates a parte rei comprises. In this connection, it is worthy of note that Stanislaus, after introducing the distinction between verum entis and verum propositionis, adds the remark that this distinction was sometimes justified by the consideration that such truths as that no chimera exists, that every man is an animal, and that the Antichrist will exist, cannot be ontological truths, since they are nothing in the world, and that therefore they are only propositional truths (S 1971, 31-32). A fundamental feature of Wyclif's and Stanislaus' realism consists in their complete disagreement with this view. Although we shall see that they recognize some cases in which equivalent variants of a true proposition capture the same fact, on the whole they defend the thesis that to every type of true proposition there corresponds a peculiar way things are in the world outside human
thought and speech. Let us look first at categorical propositions that are universal, negative, about the past or about the future. If it is asked what kind of thing is the fact that every entity is (omne ens esse; S 1971, 51) or the fact that every man is an animal (omnem hominem esse animal; S 1971, 77), the answer must be that it is the being of every entity (esse sive entitas cuiuslibet entis) or the animality of every man (animalitas uniuscuiusque hominis). The identification of the state of affairs expressed by an accusative-plus-infinitive phrase with a universal form expressed by an abstract noun is understandable in the light of these realists' doctrine of universals. A universal in the world is a common form or nature shared by several subjects. Whereas a totum integrale is its parts collectively, but not any of its parts separately, a universal or totum universale is all of its parts or instances collectively and also each part separately. The universal is the community of the things which are fashioned by it, but at the same time it is each of its instances, inasmuch as the universal and its particular instance coincide in reality (subiecto), even though they are formally (ratione) different. The formal difference is evident when we consider that the universal nature, but not the particular instance, is in principle common to more than one thing, and also that notwithstanding the fact that it is the universal form of running which makes it the case that Socrates is running, it is Socrates as a particular entity, and not the universal form, that actually does the running. But this formal difference between universal and particular does not prevent them from coinciding in the concrete union of subject and form that is found in the world (cf. especially S 1905, 36-42, 101, 147-148; W 1905, 164, 176-183; W 1896, 35, 37, 46). Against this background it is not implausible to regard the fact that every man is an animal as the universal form of animality in so far as it is exemplified by every member of the class of men, or, more briefly, as every man's being an animal. Accordingly, Stanislaus holds that in Omnis homo est animal the word animal stands for the universal form of animality and has therefore suppositio simplex (S 1905, 121).

That no man is a donkey (nullum hominem esse asinum; S 1971, 51) is an example of a negative fact. Stanislaus explicitly states that the
forma negativa connected with such true negative categorical propositions as Homo non est asinus and Chimaera non est lapis is expressed by the corresponding accusative-plus-infinitive phrases (S 1971, 163-164). He points out that a forma negativa rei ipsius suppositi, that is, a form which is negative with respect to the thing signified by the subject-term, either entirely denies the thing signified by that term - as in Chimaera non est lapis - or denies something of the existent signified by the subject-term- as in Homo non est lapis. Such a negative form as nullum hominem esse asinum, therefore, cannot be the form of something in which it inheres. Since it does not have a formatum other than itself, it is its own form and strictly speaking it can be said only of itself. In this respect it may be compared to the ideas in God's mind, which as pure forms are just what they are and do not yet have a formatum in the world, and also to such a form as posse non esse chimaeram (S 1971, 175), which lacks a formatum because the thing signified by the subject-term does not exist. On the other hand, it is unlikely that negative forms would have an intrinsic being of their own; therefore, Stanislaus assumes that their being is somehow borrowed from the being of God and of entities in general. Just as ideas in the divine mind are God, while at the same time they are formally different from God and are not forms of God or anything else, but only of themselves (S 1905, 2-15), so negative forms, as forms, are only themselves, but from a quasi-material point of view (quasi essentaliter vel quasi materialiter) they are God or any being in the world you like to choose. For any being is either hominem esse asinum or nullum hominem esse asinum; if it is not hominem esse asinum and if it is a being, it is nullum hominem esse asinum (cf. also S 1905, 100-101). There can be no doubt, then, that a negative form is an entity and not merely something that resides solely in our propositional sayings.

With regard to past and future facts, Stanislaus subscribed to the view according to which the fact that there has been a first moment (primum instans fuisse) is the pastness of the first moment (praeteritio vel fultio primi instantis), and the fact that there will be a day of judgment (diem iudicii fore) is the futurity of the day of judgment (futuritio diei iudicii; S 1971, 56-59). In his opinion,
pastness and futurity are relative forms of things that exist at a
certain time. Pastness is so to speak a vestige or trace of the
existence of a thing and characterizes the existence of the thing in so
far as it leaves behind a trace of its existence (denominant
existential rei sicut vestigiatur). Analogously, futurity is a relative
form that exists as a presage or foreboding of a thing, characterizing
it externally in the manner of a presage or foreboding (denominant
extrinsecus sicut praesagialiter vel praestigialiter).

In addition to the forms in the world that correspond to true
categorical propositions, Stanislaus also posits truths or facts that
render hypothetical or molecular propositions true. In general,
a hypothetical proposition consists of a material component, namely, the
categorical propositions involved, and a formal component, the sign or
nota which indicates how the parts are connected. This connection may
be copulative, disjunctive, temporal, local, expletive, comparative,
causal, or conditional. Since the truths signified by the categorical
propositions are either instantiated forms or merely exemplary forms,
according as the verb of the categorical propositions is in the
indicative mood or in the subjunctive mood, the truth that corresponds
to the hypothetical proposition as a whole will be a form of forms
(veritas hypothetica est sicut quaedam formas positiva vel negativa
formarum exemplarium vel inexistentialium; S 1971, 165-167). The facts
signified by true hypothetical propositions are certain relative modes
(quidam modi relativi) which exist in reality independently of our
signs; they are said by God, who by that saying is their exemplary
cause (S 1971, 65). More in particular, the fact signified by a logical
conjunction is the consonantia of the forms signified by the conjoined
categorical propositions. Local, temporal, causal, expletive, and
comparative truths are defined in analogous ways (veritas localis est
coniunctio veritatum in eodem loco; veritas temporalis est coniunctio
veritatum in eodem tempore; veritas causalis est causatio unius
veritatis ab alia; veritas expletiva proprie est expletio qua una
veritas per aliam expletur; veritas comparativa est comparatio duarum
veritatum secundum aequalitatem vel disparitatem graduum; S 1971,
60-65). In this connection, Stanislaus also observes that this kind of
fact may be signified either by a syncategorematic nota or by a
categorematic term (S 1971, 62-64). To take an example from Wyclif (W 1893, 30), Quia tu es homo, tu es rationalis, which is a hypothetical proposition, has the same significate as Te esse hominem causat te esse rationalem or as Humanitas tua causat rationalitatem tuam; the latter are categorical propositions, because causare is a categorematic term. This example is also an apt illustration of the thesis that the form corresponding to a true hypothetical proposition is relative; it is a relation between two other forms.

More troublesome are disjunctive and conditional hypothetical propositions. While the truth-conditions of all other hypothetical propositions require that the compounding categorical propositions be true, a disjunctive proposition is true when one of the disjuncts is false, and a conditional may be true even though both its antecedent and its consequent are false. Since to a false categorical proposition there does not correspond any truth, fact, or form in reality, it becomes problematic how in these cases there can be a form in the world that is a relation between two other forms. As regards disjunctive propositions, this difficulty is most conspicuous when the disjuncts are contradictories, as in Socrates est vel Socrates non est. In order to solve this problem, Stanislaus (S 1971, 68-71) draws a distinction between relative forms which are positive and relative forms which are privative or negative. A positive relative form, like paternitas or filialitas, posits both of its terms, together with the relation between the terms that is characterized from the standpoint of one of them. A negative relative form, on the other hand, posits only one of the terms and denies that any other term is related to it in the world of reality (quae unum extremum ponit et denominat, et negat a parte rei habere sibi correspondens extremum). Whereas the expression of a positive relation indicates that some entity is related to another entity, in such an expression as Petrum esse opponitur contradictorio ad Petrum non esse the preposition ad is distracted from its proper consignification in that the second term is a non-entity.

While the relation that corresponds to a disjunctive proposition with one false disjunct may be characterized as partly positive and partly negative, the relation signified by a conditional, which may have a false antecedent and a false consequent, is regarded as being
entirely non-positive (quaedam relatio totaliter non positiva; S 1971, 71-74). The fact that if a chimera runs, then it moves is a relative form that does not posit any term at all, but consists merely in the impossibility of the antecedent occurring without the consequent being the case, of hoc sine hoc. This impossibility, which exists in reality independently of our signs, can be expressed either by a conditional hypothetical proposition, such as Si chimaera currit, chimaera movetur, or by a modal proposition, such as Impossibile est chimaeram currere sine hoc quod moveatur. The difference, then, between a causal or rational proposition and a conditional proposition lies precisely in the circumstance that the relation corresponding to the former is an entirely positive form, whereas the relation corresponding to the latter is an entirely non-positive form. Therefore, the conditional Si chimaera currit, chimaera movetur is true, but the causal proposition Chimaera currit, igitur chimaera movetur is false.

To the question as to what kind of proper being or quiddity is peculiar to all these truths signified by molecular propositions, Stanislaus gives the answer that it is a vain question, because they do not possess a being of their own (vanum est de eis quærere quid essentialiter sunt, nec proprie essentiam vel quidditatem proprie habent; S 1971, 66-67). All that can be said is that, considered from a formal point of view, they simply are what they are. From a quasi-material standpoint, however, they should be viewed in the same way as the ideas in the divine mind and the negative forms that correspond to categorical propositions: they are the divine being. In general, it is wrong to hold that the metaphysical or ontological truths which are expressed by accusative-plus-infinitive phrases are significabilia complexe that are neither God nor any creature (S 1971, 77). They are universal forms which, however different they may be as forms, coincide in their material being either with the particulars by which they are instantiated or with God, who is the formal truth by which all exemplary and instantiated forms are said in a non-complex way.

3. Propositional truth
As we have seen, the truths said by God and the truths in which things say or manifest themselves are quite independent of the peculiar signs that are involved in human sayings that something is the case. Truth as it is typical of such human sayings \((\text{dicentia nostra})\) presupposes an act of composition or division of which the copula is the common sign. Stanislaus invites us to imagine a situation in which four persona say, respectively, \(\text{esse, est, Esse est, and Esse non est}\) \(\text{(S 1971, 147; cf. S 1905, 36)}\). It would be generally agreed that the first and the second person do not say anything that is either true or false, that the third says something that is true, and that the fourth says something that is false. Nonetheless, from the viewpoint of what there is in the world \((a \text{ parte rei})\) there is no real difference between what the first two persons say and what the third one says. If it is admitted, then, that only the third person says something that is true or speaks truly, there must be a special kind of propositional truth, having to do with composition and division, which is neither identical with truth as it exists in the world nor to be found in the simple use of a noun or a verb alone. Stanislaus offers two considerations that make it understandable why propositional truth is tied to the use of a complexum \(\text{(S 1971, 159 ff., 167 ff.)}\). In the first place, there must be some sort of structural similarity between a true categorical proposition and being in the extramental world. Wyclif \(\text{(W 1893, 14-15; cf. W 1899, 120, and W 1891, 234)}\) calls such things as that man or that stone \((\text{iste homo, iste lapis})\) a propositio realis. A corporeal substance as it exists in the world has an inner structure that consists of a formal component, for instance, human nature, a material component in which that form inheres, and the tie by which form and matter are connected. Every thing is a propositio realis in so far as its inner structure may elicit a true or false composition in a human saying \((\text{quaelibet res movens ad componendum vere vel false})\). In order to reflect this structure of things in the world, a categorical proposition must have a formal element, in the guise of the verb, and a material element, which supplies that verb with a subject. Moreover, since a categorical proposition is intended to capture a form as it really inheres in a thing, the verb should be in the indicative mood. When the verb is in the subjunctive mood, as sometimes happens in
hypothesis of propositions, it signifies a form that is only an
exemplary idea. An affirmative categorical proposition is true if the
form signifies by the verbal part really inheres in the thing that is
denoted by the subject-term. In the case of the most fundamental type
of proposition, then, it is obvious that an adequate apprehension of
things in the world must be a combination of elements that has some
likeness to the inner structure of the things themselves. An additional
reason why human sayings include an act of composition or division, is
the fact that such an act is presupposed by acts of assenting and
dissenting. Mere apprehension is not sufficient for truth or falsity;
there should also be a claim that the conceived state of affairs
conforms to the way things are in the world. Now, although the act of
assenting has as its object the way things are in the world and not the
proposition by means of which that state of affairs is conceived of, it
is nonetheless true that human acts of assenting to a state of affairs
in the world are normally performed through a propositional conception
of that state of affairs, and such a propositional conception is
necessarily an act of compounding or dividing.

A further question that has to be answered in order to understand
the nature of the truth or falsity that is peculiar to propositional
acts of compounding or dividing concerns the exact meaning of the words
verum and falsum when they are added to such verbs as dicere and
significare. If someone utters the sentence Esse est, we may say of
him: Dicit verum; and if someone utters the sentence Homo est asinus,
we may say of him: Dicit falsum. Are the words verum and falsum in
these contexts used as adverbs which refer only to the way in which
things are said (quod solum importent modum dicentiae; S 1971, 171) or
are they used as nouns which refer to a true or false object of the
saying? According to Stanislaus, in the case of a veridical saying both
interpretations are correct. Let us concentrate first on the nominal
interpretation. In that connection it is important to bear in mind that
it was customary to draw a distinction between the primary and the
secondary significate of a proposition. Though the proposition Omnis
homo est animal signifies in a secondary way that, for instance,
Socrates is an animal, its primary significate is every man's being an
animal. In general, the primary significate of a proposition is that
which is expressed by the corresponding accusative-plus-infinitive phrase, which was also called the dictum of the proposition. To some extent, the distinction between the primary and the secondary significate coincides with the distinction between the formal and the material significate. When someone hears the word album, he primarily thinks of the form of whiteness and only secondarily of the substance in which that form inheres. He concedes that something white is the form of whiteness (album est albedo) before he concedes that something white is a substance. In the same vein, the phrase me legere represents the form lectio mea rather than the material subject ego legens (W 1905, 164). Whereas most nominales considered a corresponding accusative-plus-infinitive phrase as no more than a variant of the proposition itself, regarded as a form of thinking, and restricted its correlate in the world to an individual which is in a certain state, Stanislaus and his fellow-realists held that the truth signified by a true proposition differs from the proposition itself and cannot, on the side of the world, be simply identified with an individual in a particular state. That the truth in question cannot be the proposition itself is evident from the fact that we frame a proposition in order to say something that is true, but not with the purpose of saying that very proposition, as an end in itself (S 1971, 147-148). There must, therefore, be something outside the proposition itself, something that is apprehended in the typical mode of a proposition, but that nevertheless exists quite independently of it in its own way. If, for example, the proposition Socrates currit signifies something true, namely, that Socrates is running, it is externally related to a fact that, as it is conceived of by the complex thought Socrates currit, is an ens rationis and is accordingly expressed by the accusative-plus-infinitive phrase Socratem currere, but that, as it exists in the outside world, is an instantiated form and as such is most adequately expressed by the nominal phrase cursus Socratis. The proposition Socrates currit is made true by the fact that Socrates is running, but that fact is nothing but the inherence of the universal form of running in that individual (cf. Unknown author 1902, 129-133). Stanislaus would not, it seems, deny that from a material point of view Socrates' running (cursus Socratis) coincides with Socrates in so far as he is running (Socrates currens);
but he leaves no doubt that in his opinion the instantiated form is the primary significate of Socrates currit, and thus the truth which is meant in the expressions dicere verum and significare verum. We might also say that for Stanislaus the verbs dicere and significare are achievement words; the only external object they can take is something that is really there in the world of metaphysical truths. And these metaphysical truths are either universal forms as such or forms that are common to the things which actually participate in them. The phrases dicere verum and significare verum are perhaps best translated by 'to state a fact'. A fact is then something that is the case independently of our apprehending it, but that, if it is apprehended, presents itself to the mind under a propositional conception that finds its adequate expression in an accusative-plus-in infinitive phrase.

Given that propositional truth, the truth that is attributed to human sayings that something is the case, presupposes an act of compounding or dividing, and given that dicere and significare take as their external object only metaphysical truths or forms, the truth that characterizes propositional acts of compounding and dividing may be defined as a relation of conformity between a human saying and an ontological truth (quaedam conformitas dicentiae humanae ad veritatem objectivam; S 1971, 155-156). This relation, which may also be said to consist in the saying's having an ontological truth corresponding to it (quaedam habentia vel habitio ipsius dicentiae, secundum quam habet veritatem objectivam sibi correspondentem), is purely external: the circumstance that a propositional conception is directed towards a form in reality that is grasped by it does not in the least alter that form. The relation exists between a mental construct, the conceived state of affairs, and on the other hand something in the world that exists independently of that conception and remains unaltered by it. There is a passage in Wyclif's Quaestiones logicae et philosophicae (W 1891, 236-237) where this relation is further elucidated. If a proposition is true because it has corresponding to it a metaphysical truth to which it conforms, then that metaphysical truth is the form which makes that the proposition is rightly called true. This cannot mean, however, that the metaphysical truth is a form that intrinsically inheres in the true proposition, as the form of humanity, for instance, inheres intrinsi-
sically in a man. For that would be incompatible with Aristotle's statement (Categories, 12, 14 b 21) that a proposition is said to be true or false according as the thing signified by it is or is not. It follows that the corresponding metaphysical truth can be considered only as an extrinsic form of the true proposition; the metaphysical truth is a *forma exemplaris* and the true proposition its *forma exemplata*. The metaphysical truth may be compared to a seal and the proposition to a piece of wax that receives the imprint of the seal. The proposition is true precisely in so far as it exhibits the full imprint of a form that exists in the outside world. That is the reason why the form of humanity alone or the form of animality alone cannot make the proposition *Homo est animal* true. And it also explains why a false proposition is false: a piece of wax cannot receive its form from a seal that does not exist (*cera enim non formatur vel exemplatur a sigillo non existente*).

It may be concluded that for Stanislaus the nominal interpretation of *verum* in *dicere verum* and *significare verum* is undoubtedly prior to the adverbial interpretation. A propositional saying is true because there is a metaphysical truth in the outside world in which the transitive act of saying or signifying terminates as in its external object. It is only on account of thus succeeding in making contact with something outside itself that the mental or linguistic activity can be derivatively characterized as being performed in a true manner. In the same vein, Stanislaus holds that the object of faith and knowledge is not, as many *nominales* maintained, a mental, spoken, or written proposition, but rather the metaphysical truth that is the primary significate of a proposition. We have already seen how often he calls to mind that the divine cognitions, both as acts and as the contents of those acts, should always be viewed in abstraction from the signs that are peculiar to human sayings. Now, if our acts of knowing and believing are true, they have that property on account of their being sayings that signify metaphysical truths, which are the very objects of the divine vision. Therefore, if the latter are entirely independent of any human signs, the objects of our knowledge and faith must have that independence too and cannot be of a propositional nature. This consideration is strengthened by the argument that people in general
and particularly illiterate persons know many truths without being aware of any mental or conventional signs (S 1971, 79, 144). To a similar remark Wyclif adds the annotation that some learned men even doubt if there are such signs in the mind (sic ut versatur tamquam dubium inter doctos si sunt talia signa in anima; W 1896, 215). This may be an allusion to William Crathorn, who had gone so far as to reject the existence of mental propositions in the strict sense. As a matter of fact, the kind of argument Stanislaus and Wyclif adduce against the thesis that the objects of knowledge and faith are propositions is strongly reminiscent of the reasons against that doctrine which had been advanced earlier in the century by Crathorn, Chatton, and Burleigh. For all these thinkers it is quite evident that the truths we seek in scientific research cannot be the propositions which are instrumental in making explicit, to ourselves and to others, the results of our investigations. What we know is something that lies outside our sayings and exists independently of our grasping it by means of propositional conceptions (S 1971, 79–80; S 1905, 25). Similarly, if Christians declare that they are prepared to die for some article of faith, they are not talking about the fugitive proposition in which that article happens to be couched; propositions are far too ephemeral and changeable to be the permanent and identical objects of faith (S 1971, 48; S 1905, 24–25). In the old dispute between adherents of a res doctrine concerning the articles of faith and the defenders of a complexum theory Stanislaus resolutely sides with the former.

The main result of this section may be summarized in the thesis that the universal forms which exist as true beings in divine thought and in the world created by God have a double role with respect to the propositions by which they may be grasped. As true beings they are the exemplary forms from which human sayings and acts of knowing and believing receive their derived truthfulness. But at the same time and most importantly, they furnish the acts of dicere and significare with the only external objects they are capable of having. If these verbs have a primary significate in the sense of an external object, that object cannot be anything else but an ontological truth. Probably alluding to Gregory of Rimini, Stanislaus contends that those logicians err who assert that a proposition can signify primarily a propositional
falsehood, in the proper sense of a primarily signified external object (quodsi logici dicunt propositionem significare falsum propositionale significatonee primaria proprie dicta per modum objecti significati primarii, eorum dicentia videtur esse falsa; S 1971, 190-191).

4. False propositions

If the truth of a proposition consists in its conformity to an ontological truth or in its having an ontological truth corresponding to it, then a proposition is false on account of its not having an ontological truth corresponding to it. Since from a metaphysical point of view verum and ens are coextensive, an entity signified by a false proposition could only be a truth, and that truth would make the proposition true. Because everything that signifies signifies an entity, and thus an ontological truth, an ontological falsity, which is a non-entity, cannot be signified at all (S 1905, 159; S 1971, 67, 135, 178). If the verbs dicere and significare are taken in a way that is called transitive - that is, as transitive verbs that stand in need of being complemented with an external object that lies outside the actual saying and signifying - such expressions as Dicit deum non esse and Significat deum non esse cannot possibly be true. When it is agreed that deum non esse is a falsity and therefore a non-entity, those expressions are equivalent to Dicit nihil and Significat nihil. Understood as achievement words, the verbs dicere and significare cannot be used correctly in cases where there is no external object in which they terminate. Consequently, it is impossible to interpret the phrases dicere falsum and significare falsum in such a sense that the falsehood would be the primarily signified external object.

If, then, we are to give a satisfactory sense to the expressions dicere falsum and significare falsum, the word falsum must be taken modaliter, as an adverb that describes the way in which the saying or signifying is performed (S 1971, 154, 171-172). The falsity is then entirely in the sign, which of course is a truly existing thing. For example, in the case of the fool who says in his heart that there is no God, it is, first of all, impossible to maintain that he says or states something that is primarily signified as an external object; for there
is no such thing as God's non-existence. What we can say is that he formally performs the false and impossible mental saying 'There is no God' (formaliter exercet illam dicentiam mentalem falsam et impossibilem 'Non est deus'; S 1971, 173). This could also be expressed by saying that he speaks or thinks falsely and that the proposition he utters signifies falsely. The same point may be brought out in a slightly different way. In such a sentence as Dicit hoc, scilicet, quod deus non est the pronoun hoc cannot be taken as referring directe, that is, non-reflexively, to an existent that would be the external object of a transitively used dicere. In this context the verb dicere is used intransitively for the performance of a saying (intransitivo pro exercitio dicentiae) and hoc is accordingly used reflexively for the saying itself (non directe, sed reflexe pro ipsa dicentia; S 1971, 176-177). So in order to diminish the danger of confusing intentiones rerum and intentiones signorum it is better to avoid here such constructions as deum non esse and quod deus non est and to quote the words uttered directly, as in Dicit: 'Non est deus' (S 1971, 197).

Analogous considerations apply to the false sentence Homo est asinus, which signifies a man and a donkey in such a manner that a man is a donkey. The sentence is a sign that has a certain form of signifying, but it signifies in a false manner since its form of signifying is the form of nothing (W 1909, 13). Stanislaus compares such cases to the form posse non esse chimaeram (S 1971, 175-176). Such a real form lacks a formatum other than itself and can therefore only be the form of itself. In the same way the form of signifying a false proposition or saying necessarily lacks an external object in which it terminates and thus refers exclusively to itself. Following a suggestion of Wyclif (W 1896, 218), we might also say that in such cases the object of significare is purely internal: sicut enim idem est gaudere vel dolere et habere dolorem vel gaudium, sic idem est significare vel habere significationem vel habere significationem quae est vel significare significationem quae est.

At this point it may be asked whether such false signs, which are empty inasmuch as they have no external object that corresponds to them, are not useless and superfluous. Stanislaus admits that they must be regarded as imperfections that are characteristic of the condition
humaine, but at the same time he points out that they have a certain positive function in so far as they may contribute to the formation of true propositions (S 1971, 178-180, 189, 207). When in the sentence Socrates non potest dicere hoc, scilicet deum non esse the verb dicere is taken transitively and the pronoun hoc non-reflexively, its affirmative counterpart Socrates potest dicere hoc, scilicet deum non esse is false, so that the contradictory sentence is true. He compares this use of empty signs in the formation of true propositions to the use of zero in the construction of arithmetical symbols and formulas. Empty signs justify their existence by helping to bring about true propositions that could not be framed without them. They make the universe more attractive by increasing the amount of truth contained in it.

A further problem concerns the question how it is possible for false propositions to differ from each other. Taken as truly existing signs, the propositions Deus non est and Homo est asinus have of course different shapes and different modes of signifying. But from the crucial point of view of transitive signification of an external object, they both signify a non-entity or nothing; to that extent, therefore, they may be thought to be identical. According to Stanislaus, however, some difference may be found even if we look outside the propositions themselves, at the extramental world. Given that the propositions Nullus homo est asinus and Deus est transitively signify an external object or state a fact, we may explain the difference between the false propositions Homo est asinus and Deus non est by saying that the former fails to signify primarily the ontological truth that no man is a donkey and that the latter fails to signify primarily the ontological truth that God exists (primam directe deficere in significando primarie ab illa veritate significanda, scilicet 'Nullus homo est asinus', et secundam directe deficere ab alia veritate primarie significanda, scilicet 'Deus est'; S 1971, 185-186). As a false proposition fails to signify primarily the fact or truth that is primarily signified by its contradictory, that fact, which is the primary significate of the true proposition, may be considered as the secondary significate of the false proposition (signa incomplexa et complexa falsa et defectuosa a significato primario non habent aliquod
verum pro primario significato, sed habent verum pro secundario
significato, quod tamen alterius est primarius significatum verum; S
1971, 181). Thus the difference between two false propositions can be
accounted for by pointing to the difference between the ontological
truths which they fail to signify primarily.

Stanislaus compares this way of indicating the difference between
two false propositions to the way in which, for example, the difference
between the sin of pride (superbia) and the sin of avarice (avaritia)
may be described (S 1971, 187). To commit a sin of pride amounts to
deviating from the normal degree of being delighted with one's own
excellence (directe deficere ab ordinato amore propriae excellentiae),
whereas to commit a sin of avarice amounts to deviating from the normal
love of temporal possessions (directe deficere ab ordinato amore
temporalium). Playing a bit with the word deficere, Stanislaus adds
that strictly speaking committing these sins is not a positive act of
doing something, not a facere or factio, but rather an instance of
deficere and defecatio: an un-doing of what is good, or a mis-deed.
The difference between the two sins may therefore be described in terms
of the difference between the good things which the sinners fail to do,
or un-do. Analogously, a false proposition which fails to signify an
ontological truth may be said to dis-signify that truth (sic istam
propositionem falsam 'Nullus deus est' significare hoc falsum, scilicet
nullum deum esse, non est proprie primarie significare, sed potius
primarie designificare hoc verum significatum primarium, scilicet 'Deus
est'; S 1971, 188). In the same vein, people who assert, believe, or
defend a falsehood may be characterized as performing an act of
dedicere, decredere, deasserere, or dedefendere with respect to the
corresponding ontological truth. Whereas a true proposition, which has
a primary significate in the outside world, presents an ontological
truth to the cognitive faculty, the contradictory false proposition,
which is an empty sign, withholds that truth from the cognitive faculty
and so prevents the mind from knowing it (S 1971, 203). By thus
shifting the negative or privative aspect of the falsity of a
proposition from the world to the relation between the proposition and
the world, Stanislaus endeavours to retain the positive import of the
verb significare. As the meaning of significare and significantia does

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not seem to include any negative or privative element, it is preferable to reserve those words for cases where both the first and the second term of the relation really exist. Instead of saying that a false proposition signifies a non-existent external object or states a non-fact, one should rather say that a false proposition dissignifies an existing truth or misses a fact (S 1971, 195-197).

Let us finally look at the way in which Stanislaus deals with a difficulty that may be brought up in connection with false propositions (S 1971, 193-199). Someone might argue as follows. If the proposition Deus non est signifies primarily that God does not exist, then God's not existing is signified. Consequently, being signified is truly predicated of God's not existing (esse significatum vere praedicatur de deum non esse). Since every being signified is a truth (cum omne esse significatum sit veritas), it follows that a truth is truly predicated of, and truly belongs to, something that is utterly impossible, namely, that God does not exist. For this impasse Stanislaus offers several ways out. In the first place, the sentence Deum non esse est significatum (per propositionem 'Deus non est') may be treated in the same manner as the sentence Chimaera potest non esse. As we have seen, the latter sentence signifies primarily a form - posse non esse chimaeram - that is an ontological truth. But since the subject-term does not refer to an existing thing, that form lacks a formatum that is different from itself; therefore, it is its own form and inheres only in itself. Similarly, the sentence Deum non esse est significatum is true because it primarily signifies the form or ontological truth deum non esse esse significatum. Since, however, the subject-term, namely, deum non esse, does not refer to an existing thing, the form deum non esse esse significatum lacks a formatum that is different from itself and can only be its own form.

An alternative solution starts from the active sentence 'Deus non est' significat primari deum non esse. That sentence is undoubtedly false if the verb significare is understood transitively, because the proposition Deus non est fails to capture any ontological truth that could be the external object of its signification; it simply does not state a fact. If, then, the truth of the active sentence is to be preserved, it has to be taken in a different sense. One way of
interpreting it can be brought out by replacing it with the equivalent sentence 'Deus non est' designificat deum esse. Transforming the latter sentence into its passive counterpart Esse deum est designificatum does not yield an awkward conclusion, because the subject-term esse deum refers to something that exists; thus it is no longer the case that a truth truly belongs to something that is impossible. Another interpretation of the active sentence equally blocks the inference suggested by the opponent. If the active sentence is read as 'Non est deus' significat sic: non est deus or as 'Non est deus' exercet talen, significantiam: non est deus, that is, in an intransitive and reflexive sense, then it no longer is a suitable premiss for the conclusion Non esse deum est significatum, as intended by the opponent.

5. Conclusion

The essential features of Stanislaus' account of truth and falsity can, I think, be summarized as follows. Let us concentrate on the example 'Socrates currit' significat Socratem currere. In that sentence the accusative-plus-infinitive phrase Socratem currere can be taken in two different ways. First, we may see it as a means of exhibiting the peculiar mode of signifying that is inherent in the propositional sign Socrates currit. To a certain extent, we are able to grasp the meaning of the sign without looking outside the sign itself. Remaining entirely within the sphere of signs, we may express the formal signification of the propositional sign Socrates currit by a dictum that has an adverbial character in a twofold respect. The formal signification of a propositional sign is predominantly constituted by a syncategorematic complexio and is therefore a significare aliquid alter or a significare sic, a typical mode of combining two things. On the other hand, this formal signification is not a kind of entity that lies outside the sign, but rather the sign itself, in so far as it is seen as the very way in which it performs its signification. The verb significare in our example refers, therefore, to the manner in which the propositional sign accomplishes its function, or, if one wants to put it that way, to its content or immanent object. If, then, we wish to evaluate the way in which the sign performs its function, the expressions most suitable
for that purpose are the adverbs vere and false, or verum and falsum, understood modaliter. This evaluation, however, is based on a criterion that forces us to look farther than the sign under consideration, at the world with which it is intended to establish semantical contact. This change of viewpoint also alters the import of the sentence 'Socrates currit' significat Socratem currere. The verb significare now has a strictly transitive meaning in that it points towards an external object that should be supplied by the accusative-plus-infinitive phrase Socratem currere. This phrase indicates the characteristic guise in which the external object appears to the mind in a propositional conception. As a conceived state of affairs, the external object is Socrates' running in so far as it is brought into the shape that is peculiar to a mental act of compounding. But that does not imply - as adherents of the complexe significabile theory maintained - that it has that same shape when it is considered as an item that exists independently of any propositional conception in the outside world. Most nominales would contend that the item in the world is nothing but the individual in a particular state: Socrates in so far as he is running (Socrates currens). Stanislaus rejects that view. Being a realist, he denies that the universality of the predicate currit is restricted to the mind that conceives individual things in a universalizing manner; as he often emphasizes, the universality lies first and foremost in the world of things. Accordingly, for him that which appears to the mind in the guise of Socratem currere is in the extramental world the universal form of running as it is instantiated by Socrates: cursus Socratis rather than Socrates currens. Another important respect in which Stanislaus disagrees with the nominales concerns the question as to whether or not each true proposition has a correlate in the world. Whereas the nominales are rather economical on that score, Stanislaus is both extremely generous in admitting corresponding universal forms and very ingenious in specifying their modes of existence. In the last instance, all these universalia in re are grounded in the universalia ante rem that are the contents of God's veridical acts of thinking. In this perspective, it is only natural that Stanislaus sides with those philosophers who considered the objects of assent, knowledge, and faith, not as propositions, as many
nominales did, but rather as universal forms in the world which are stated as facts by means of true propositions.

If the proposition Socrates currit should happen to be false, the sentence 'Socrates currit' significat Socratem currere is still true, but only in the self-referent sense in which Socratem currere specifies the mode of signifying of the proposition Socrates currit. The expression significat falsum can only mean the same as significat false, or as significat significationem falsam. Since at the moment of utterance the form of running is not instantiated by Socrates in the actual world, the proposition Socrates currit cannot state a fact; it simply states nothing. But rather than using the latter way of speaking, Stanislaus prefers to say that it dissignifies or misstates a fact, namely, the truth that Socrates is not running. Thereby he manages to limit the potential objects of propositional conceptions to real entities or ontological truths. Some of them are signified or stated by true propositions, others are dissignified or misstated by false propositions. In this way Stanislaus is able to resist the temptation of introducing special entities as significates of false propositions, a temptation to which Gregory of Rimini had succumbed.

It is abundantly clear that Stanislaus' conception of truth and falsity, which, to a great extent, he shares with Wyclif and Hus, has many roots in the writings of such Platonizing authors as Augustine and Anselm of Canterbury. It is less obvious how this type of realism is connected, historically and systematically, with the relevant parts of the doctrines that in the first half of the fourteenth century had been put forward by, for instance, Chatton, Crathorn, and Burleigh. An accurate assessment of the mutual similarities and differences will not be possible until a much fuller insight into the views of these thinkers has been acquired. In the meantime, there are two particular points about the location of Stanislaus' doctrine that may be made with a reasonable degree of certainty. First, there is a passage in Jean Buridan's Quaestiones in libros Priorum, I, q.5 (quoted from a manuscript by Maria Elena Reina, 'Il problema del linguaggio in Buridano, II, Significazione e verità', Rivista critica di storia della filosofia, 15 (1960), 160, n.181), where four answers are mentioned that were given to the question Quae res est hominem bibere vinum?
According to Buridan, some philosophers maintained that hominem bibere vinum is some accident inhering in a man, namely, that he is in such a state with regard to wine (quoddam accidens inhaerens homini, ut taliter se habeat ad vinum). As this answer is apparently contrasted with the answer that it is nothing but a man who is in such a state (homo taliter se habens ad vinum), it seems to me to be highly plausible that the former answer is an anticipation of Stanislaus' view that Socratem currere is to be identified in the world with cursus Socratis, rather than with Socrates currens. Still, it would be interesting to know more precisely who at the time of Buridan's writing held that theory. The second point concerns a passage in Paul of Venice's Logica magna, II, 11, Tractatus de significato propositionis, where the first opinion mentioned is one according to which the significate of a true proposition is a mode of a thing and not a thing (significatum propositionis verae est modus rei et non res; edition of Francesco del Punta and Marilyn McCord Adams, Oxford University Press, 1978, p.80). In Theories of the Proposition. Ancient and Medieval Conceptions of the Bearers of Truth and Falsity, North-Holland Publishing Company, Amsterdam-London, 1973, p.274, I surmised that Buridan's quoddam accidens inhaerens homini might perhaps be taken as a paraphrase of modus rei. I now feel that the suggested identification of the view mentioned by Buridan with the modus rei theory is extremely dubious. If the hypothesis that the view mentioned by Buridan is an anticipation of Stanislaus' doctrine would prove to be correct, then that view is quite different from the modus rei theory, which stresses the syncategorematic nature of a proposition and accordingly posits as its correlate in the world a mode of being or state of affairs. But to settle this issue more data are needed.
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INTRODUCTION

Among the many problems that face the student of the *actus exercitus/actus significatus* distinction there is first of all a question of form. In medieval texts the second member of the distinction frequently appears as *actus signatus*, alongside the form *actus significatus*. This alternation is no doubt originally due to the fact that in manuscripts *significare* was often abbreviated and then wrongly read as *signare*.1 On the other hand, there is some evidence that scholastic authors themselves were rather uncertain as to which form is to be preferred. Mauritius a Portu Hibernicus, for instance, who prepared an edition of Duns Scotus’s logical works (1504), remarks in his annotations on *Super universalia Porphyrii quaestiones acutissimae*² that one can say both, but that *actus signatus* has the advantage of being less pronouncedly passive. Such a *praedicatio signata* as *Genus praedicatur de specie* is not, strictly speaking, a predication, but rather an indeterminate and very general sign of such predications as *Homo est animal*. A predication is called *signata* in the sense of: *significativa, vel figurativa, vel implicite sive obscure importans in communibus conceptionibus praedicationem exercitam*. Apparently, an *actus signatus* was not seldom understood as an act that is, at a higher and more abstract level, the sign of an expression of lower order. In what follows, however, I shall always use the phrase *actus significatus*.

More important than the correct labeling is the question of what exactly the distinction between an *actus exercitus* and an *actus significatus* meant and to the solution of what kind of problems it was thought to contribute. Neither older philosophical lexicons nor dictionaries and encyclopedias of a more recent date are very helpful in the search for an answer to these questions. Rudolphus Goclenius’s *Lexicon philosophicum* of 1613 does contain an article on the distinction, but it is little more than a jumble of quotations from writers of the sixteenth and the beginning of the seventeenth century. Much shorter are the articles in Johannes Micraelius’s *Lexicon philosophicum* of

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1653 and in Stephanus Chauvin’s *Lexicon philosophicum* of 1692. Both authors confine themselves to stating that the difference between an *actus exercitus* and an *actus significatus* is practically identifiable with the difference between a form as it is actually present in particulars and a form as it is conceived of and defined in abstraction from any subject in which it is realized. Apparently, for them — and probably for most of their contemporaries — *in actu significato* and *in actu exercito* were almost synonymous with *in abstracto* and *in concreto*. No less disappointing are modern sources from which one would expect more satisfactory information on the history of the distinction. Obviously, more extensive and detailed research has to be undertaken before the defects in our understanding of an important item of medieval philosophical terminology can be fully remedied. My contribution to this enterprise will be modest. I shall first sketch the development of the notions concerned as it can be gathered from the earliest treatises on syncategorematic signs. From there I shall proceed to consider the way in which our distinction was sometimes utilized in attempts to solve that most refractory *insolubile*, the Liar in one of his medieval guises.

Tractatus de Proprietatibus Sermonum

Before turning to the earliest texts that deal especially with syncategorematic signs I want to draw attention to some observations made by the author of a *Tractatus de proprietatibus sermonum* that dates from about 1200 and has been edited by De Rijk. In order to appreciate those observations it is necessary to keep in mind the general background against which philosophers of that period tended to handle semantical problems. In the Peripatetic tradition it had been customary to bring into prominence the signification of those words that are capable of serving as subject-term or as predicate-term in a categorical proposition. Hence nouns and verbs — to which pronouns and participles were usually appended — counted as the principal, or even sole, parts of speech. They were regarded as having a relatively independent meaning which is bestowed upon them by the fact that their utterance is accompanied by a simple apprehension in the mind. The act of thinking or conceiving of something is, as a particular act, in the cognitive part of the soul as in a subject, but the thing thought of, in so far as it has its
own and separate mode of existence, is not in the mind; it is made known to the cognitive part of the soul by the way it is represented in the content of the act of thinking of it. A noun and a verb, then, signify something that is conceived of by the mind but is not itself in the mind.

Compared with this central meaning of nouns and verbs, the signification of such words as prepositions and conjunctions was bound to look problematic. The classes of words that do not possess the relatively independent meaning of categorematic expressions were grouped together as syn-categoremata or con-significantia. They signify only in combination with other words, to whose proper meaning they add a way or a mode in which the adjoined terms then signify in accordance with their own type. Another group of words whose meaning clearly deviates from the signification of categorematic expressions is the class of interjections. Whereas both categorematic and syncategorematic words could be considered as indicating something the cognitive part of the soul conceives of or at least a way in which the cognitive part of the soul conceives of something, interjections were commonly regarded by Latin grammarians as forming a separate class of words and as signifying some affective state or emotion in the non-cognitive part of the soul. In this respect they show a marked similarity with the moods of the verb.

Against this background it does not come as a surprise that the author of the *Tractatus de proprietatibus sermonum* divides words into those which have a signification by themselves and those, such as prepositions and conjunctions, which have a determinate signification only together with other words with which they are combined in a phrase or a sentence. Words that signify by themselves are further divided into words that signify a concept and words that signify an affect (in vocem significantem conceptum et vocem significantem affectum). The difference between these two categories can be elucidated by such examples as desiderium and utinam, or gaudium and euax. The nouns desiderium and gaudium signify the feelings of desire and joy as they are apprehended and thought of in the mind (ut apprehensum et cogitatum in anima). The speaker need not have the feeling in question; he may merely think of it and convey that which he conceives of in his mind but which is not itself there, to somebody else by means of the appropriate noun. When, on the other hand, he sincerely uses the words utinam or euax, he gives expression to a feeling of desire or joy that he actually has; but he need not conceive of that feeling by an act
of simple apprehension in the way he would have to think of it if he were to use the appropriate noun. On the contrary, in most circumstances he will be thinking of something else that somehow causes the feeling he has. Such adverbs as *utinam* and, in general, interjections signify in such a way that they are spontaneous and direct expressions of a feeling that itself actually is in the speaker’s soul: it is a form that really affects him and is instantiated in him (*forma affectus sive forma exercita*). 8

As regards *significare*, the author notes that there is a difference between signification with respect to the apprehensive faculty of the soul and signification with respect to the non-cognitive part of the soul. Words that signify a concept are signs of a thing as it is conceived of in the intellectual part of the soul, while such words as *utinam*, *forte*, and interjections give expression to an affective state in which the emotive and appetitive part of the speaker’s soul actually is. At the same time attention is paid to the difference between uses of *significare* in which it is a speaker who signifies something by means of language, and uses in which words are said to signify something. This difference is compared to the way in which such a verb as *percutere* (‘beating’) may have both a man and a stick as subject, or in which *secare* (‘chopping’) may have both a man and an axe as subject. Like a stick or an axe, words are typically instruments by which the speaker, as the genuine agent, performs some speech act.

Finally, in connection with pronouns that refer back to something that has been mentioned before, our author points out that such a reference can be accomplished only with respect to something that has been apprehended or thought of in such a way that it is capable of being denoted by a word that signifies a concept (*Relatio sive recordatio est iteratio apprehensionis sive cogitationis. Tunc debet id dici determinari proprie memoriae quod prius est cogitatum et apprehensum; p. 721*). That means that none of those linguistic items that are somehow *consignificantia* are proper candidates for being the intended term of the relation of reference, since they do not denote a thing thought of or apprehended (*Consignificata enim non sunt cogitata nec apprehensa*). This is said to apply in particular to those words, such as *omnis* (‘every’), which indicate a mode or disposition that qualifies some apprehension. These dispositions are in the soul not as things that are conceived of, but rather in the same way as certain inclinations or tendencies are in the soul (*quasi quidam nutus*). In this respect, there is
some resemblance between such a syncategorematic sign as *omnis* and endings that indicate the active or passive voice of a verb or the case of a noun. But there is also a difference: *omnis* notes a form in the mind which the faculty of thinking superadds to the things thought of and according to which those things are thought of.

This passage is worthy of note, I think, because it clearly contains the suggestion that all those linguistic items which do not signify a thing that is conceived of by the mind without as a rule being itself in the mind, share some feature on account of which they may be grouped together. Whether they are words that signify by themselves an affective state or are items that have some kind of con-signification, they are all alike in that they do not signify a thing that is merely in the mind in the guise of a concept, but are rather indications of a form of thinking or being moved that is itself really in the soul, as a modification of its rational or irrational parts. It is this common feature which brings in particular words that express affective states and syncategorematic words together. Although there may be some difference in the type of modification which they convey, the fact that they have regard to something that as such is exemplified by the soul contrasts them equally with those words that signify a thing that itself remains outside the mind and is only in it under the form of a representation. By thus stressing this shared feature and common contrast the author of the *Tractatus de proprietatibus sermonum* may well have furthered the idea that the meaning of syncategorematic words could be elucidated by approximating them to words that give expression to an affective state of the soul.

**Robert Bacon’s Syncategoremata**

In any case, it is precisely that idea which we find elaborated in one of the earliest treatises on syncategorematic words, the *Syncategoremata* that has been partly edited by Braakhuis and is ascribed by him to Robert Bacon; if that ascription is correct, the work dates from the beginning of the thirteenth century. Bacon concedes that the word *non* does not signify negation if one means thereby that it signifies what it actually does, namely negate. For no word signifies its own function (*nulla dictio significat suum officium*). It should be kept in mind, however, that the way in which the word *non* negates is different from the way in which the speaker who uses the word *non* negates or denies: while the speaker negates as the proper agent, the word *non* negates as
an instrument. Nevertheless, besides carrying out its task as an instrument of negation, the word *non* also has some signification. At this point Bacon introduces a distinction between *significare per modum conceptus* and *significare per modum affectus*. The noun *negatio* and the verb *negare* signify negation in the manner of a concept, that is, as something that is in the mind only as conceived of, not as a mental act or attitude that effectively negates or denies. Elsewhere this is aptly brought out by such an example as *Negatio negat*, which is an affirmative proposition. The word *non*, on the other hand, signifies negation in the manner of something that really affects the soul. Bacon carefully explains what he means by that formulation. When the mind apprehends two things which cannot be joined in predication, such as man and donkey, it is affected by some kind of disagreement or dissent (*afficitur quadam dissensione*). To this feeling expression is given in language by the word *non*, which therefore is a mark or indication (*nota*) of the feeling of dissent that is actually instantiated by the soul.

Similarly, *tantum* ("only"), *et* ("and"), *vel* ("or"), and *praeter* ("besides") are said to signify, respectively, exclusion, copulation, disjunction, and exception, not as things conceived of — as the corresponding nouns and verbs would do — but as affects, that is, as modes of conceiving which are actually exemplified by the soul. With regard to *si* ("if") Bacon is again somewhat more explicit: when the soul conceives of two propositions that are coherent, it is affected or disposed by the order that they exhibit, and *si* is the outward mark of the soul's being so disposed. And in connection with the particle *an* ("whether") he first states his general conviction that every syncategorematic word is the mark of some affect of the soul (*omne syncategorema est nota alicuius affectus animi*) and then characterizes *an* as a mark that indicates felt doubt and, secondly, interrogation and disjunction.

A speaker who uses a syncategorematic word may then, according to Bacon, be described as being actually affected or disposed in a certain manner, as giving expression to his inner state by means of a syncategorematic mark, and as thereby performing, as the proper agent, some speech act. If we view things from the side of the syncategorematic word, it may be said to be an outward mark of some inner state exemplified by the speaker; as such it has a signification *per modum affectus*. By being a mark of such an inner state it fulfils its proper function: it carries out such acts as predicating, negating, distributing, excluding, as an instrument. But it does not signify what it does. In
order to signify both the task that the word accomplishes as a tool and the speech act that the speaker performs as an agent a different category of words has to be employed: nouns and verbs, which signify per modum conceptus. The difference between the two modes of signification may also be brought out in the following way. By using a syncategorematic word the speaker gives direct expression to his own inner state and thereby performs a speech act that has the import or force that is inherent in that state and the corresponding syncategorematic word; by using non, for instance, he expresses his own feeling of dissent and thereby effectively negates or denies. In the same way, the syncategorematic word can express only the state of the speaker who utters it, and thereby actually fulfils a function that has the same character as the speech act performed by the speaker. But when such nouns and verbs as negatio and negare are used, they may be applied indifferently to what the user himself does or has done and to what someone else does or has done. And it is this lack of any direct connection with an inner state of the speaker himself that deprives the nouns and verbs of the effectiveness and force that are typical of the corresponding syncategorematic words.

Bacon does not yet use the words exercere and exercitus in any more technical sense. But it is not difficult to indicate the points where he might have considered the notion conveyed by those words as being applicable. First of all, he emphasizes that the state of which a syncategorematic word is the appropriate mark is something by which the speaker’s soul is actually affected; as such we may contrast it with something that is in the mind only as being conceived by it. To speak with the author of the Tractatus de proprietatibus sermonum, it is a forma exercita. Secondly, when it is said that the speaker negates or denies as an agent, it is evident that Bacon means that the speaker by giving expression to his feeling of dissent performs an act of negating or denying, but does not also signify that very act. And, thirdly, when conceding that no syncategorematic word signifies the function that it accomplishes by being the mark of an inner state of the speaker, he very likely had in mind the opposite as it was usually denoted by exercere officium.

William of Sherwood’s Syncategoremata

Bacon’s compatriot William of Sherwood also composed a treatise on
syncategorematic words, probably in the fourth decade of the thirteenth century. He is much less explicit about the problems with which we are concerned, but there is one passage in which he appears to adhere to Bacon's theory regarding the signification of syncategorematic words. In dealing with the conjunction *si* he poses the question of how this conjunction differs from such a verb as *sequitur* ('it follows'). His answer is that *si* is the mark of a consequence as it is carried out by the mind of the speaker (*secundum quod exercetur ab anima proferentis*), whereas *sequitur* denotes such a consequence as it is conceived of (*secundum quod concipitur*). This answer is practically the same as the characterization of *si* offered by Robert Bacon. It seems likely, therefore, that in this case at least Sherwood is applying the distinction between signification *per modum affectus* and signification *per modum conceptus*, although he gives the impression of taking the *affectus* in a slightly more active and cognitive sense than Bacon perhaps did. If the treatise on *Insolubilia* that has been edited by M. L. Roure is really by Sherwood — which appears to be doubtful — this impression is confirmed by what the author of that treatise states about composition. According to him, the syncategorematic composition that is contained in the finite verb of the sentence *Socrates currit* is in the intellect as a mode of conceiving (*ut modus intelligendi*) and not as that which is principally understood (*ut principalier intellectum*). But, however that may be, it is still true that Sherwood sides with Bacon in viewing the signification of syncategorematic words as consisting in being a mark of some disposition that is actually instantiated by the speaker, that is, as comparable to the way in which interjections are marks of purely affective states.

*John le Page's Syncategoremata*

As far as can be gathered from the excerpts edited by Braakhuis, the latter analogy was also upheld by the continental philosopher John le Page, who wrote a treatise on syncategorematic words in the third decade of the thirteenth century. In discussing the exclusive words *tantum* and *solus*, Le Page rejects the common opinion that they are called exclusive because they signify exclusion. Instead, he maintains that exclusion is the act that is performed (*exercetur*) by those words, in the same way as the sentence *Socrates currit* does not signify the act of affirmation, but actually performs it. Nevertheless, while syncategore-
matic words cannot signify the very function they accomplish, they do possess a meaning in so far as they are a mark of some act that is carried out in the mind of the speaker. It is in this connection that Le Page stresses the analogy with interjections, by pointing out that every act in so far as it is performed is signified in the same way as an affective state is signified (Omnis actus inquantum actus significatur ut affectus). What is signified by the preposition praeter, for example, is the mental act or inner state of the speaker of which praeter, in combination with another word, is the appropriate mark (consignificatur ut actus vel affectus illud quod significatur per praepositionem). This signification of a syncategorematic word is of course quite different from the signification of the corresponding noun or verb. As Le Page duly reminds the reader, the nouns compositio and compositum signify composition in so far as it is a thing that belongs to one of the Aristotelian categories (ut est res); but the syncategorematic element in a finite verb and the separate copula are the mark of an act of compounding, not as it is conceived of, but as it is actually performed in the mind of the speaker. It should be noted that Le Page does not always characterize this meaning of syncategorematic words in terms of the peculiar speech act that is performed by means of them. In the case of tantum and solus he states that they mean the same as non cum alio; this meaning is described as privatio associationis, presumably a mental act that consists in the negation of being joined with others. As we shall see later, the act of excluding was often regarded as something that results from, and is consequential upon, the circumstance that the speaker has in his mind a mode of conceiving that is, for instance, the negation of being joined with others and of which solus is the appropriate mark.

Although the available text of Le Page’s treatise is not everywhere as clear as one might wish, the conclusion is justified, I think, that he still follows the pattern that is most explicit in Bacon’s treatment of the signification of syncategorematic words. But whereas Bacon tends to identify the inner states (of which such words are the outer marks) with affects of the soul, Le Page takes them more clearly as mental acts or cognitive modes of conceiving which are only comparable to purely affective states: both are forms of being disposed that are actually exemplified by the speaker and to which the speaker gives direct expression by means of such words as interjections and syncategorematic marks, which thus share a peculiar manner of signifying that is
totally different from the signification per modum conceptus of nouns and verbs.

Peter of Spain’s Syncategoremata

This slight change of perspective is considerably strengthened by Peter of Spain, who wrote a treatise on syncategoremata in the fourth decade of the thirteenth century. Of the distinction between signification per modum conceptus and signification per modum affectus Peter keeps only the name of the first member: when negation is signified by the noun negatio or the verb negare, it is taken as conceived of (ut concepta) or in the manner of a concept. As regards the second member, he says that negation can also be taken as actually carried out (ut exercita) and that then it is signified by the particle non. He goes on to explain the difference between a concept and what he calls an affectus sive exercitus. A concept or a thing conceived of is in the mind only in the form of some representation (per similitudinem aliquam); when someone thinks of a color or a man, only a representation of the thing is in the mind, not the thing itself. An affectus sive exercitus, on the other hand, is itself really in the soul or in the body. When I am suffering from a disease, I am not just thinking of pain — at a safe conceptual distance, as it were — but I am really having the pain that afflicts me; and when I am running, the running really is in my body, making it move and affecting it (cursus est in corpore meo secundum veritatem exercens et afficiens ipsum corpus). Evidently, Peter is thinking here of the distinction between forms as they are in the mind in abstraction from the subjects in which they are concretely realized and forms as they are actualized in an individual thing. Applied to negation, that means that someone who merely conceives of negation and signifies that concept by the noun negatio or the verb negare, need not in doing so be himself disposed in such a way that he can be said to be performing an act of negating or denying: Negatio negat is not a negative proposition. But if a negation is really in the speaker’s mind as a mode of conceiving actually instantiated by it and if he gives expression to this mental act by the particle non, then he can be said to perform an act of negating or denying: Socrates non currit is a negative proposition. That non signifies negation ut exercita may thus mean that it is a mark of a mode of negatively conceiving as it really is in the speaker’s mind and colors his apprehension.
But there is also another possibility. Sometimes the distinction between the two cases was explained by pointing out that running as conceived of is signified by *cursus* or *currere*, but that it is differently signified as exercised, as when someone does it by actually running; or that riding as conceived of is signified by *equitatio* and *equitare*, but that it is also signified as exercised, as when someone actually does it. Surely this is a rather outlandish way of expressing the distinction intended. A person who is merely running or riding is not signifying at all, but just doing something else; though he may perhaps be said to present himself as doing it. In the light of such passages it is not impossible that Peter’s sentence *Alio autem modo sumitur negatio quae est instrumentum negandi ut exercita, et sic significatur per hanc particularm ‘non’* should be read as meaning that *non* does not signify negation as conceived of, but that it actually does the negating. This interpretation would still be in agreement with Peter’s explanation of the difference between *conceptus* and *affectus sive exercitus*. As running is actually in the body of the runner, as a form exemplified by it, so negating is actually in the word *non*, because in suitable circumstances it does precisely that, as an instrument.

Moreover, this second reading becomes more plausible than the first possibility when some other things that Peter says are taken into account. In the case of exclusion, for instance, he repudiates the view that an exclusive word is so called because it signifies exclusion. If *tantum* signified exclusion as conceived of, it would be synonymous with such nouns and verbs as *exclusio* and *excludere*; but then the latter words would have the same exclusive force as *tantum* has, which is false. But neither can *tantum* signify exclusion *ut exercita*, that is, as it is actually carried out by the syncategorematic word *tantum* itself, for no word signifies the function which it fulfils, as is clear from the following examples. Every word signifies, but it does not signify its own act of signifying. And such a word as *homo* stands for this or that man; but it does not signify that supposition, it signifies man. In the same vein, an axe is called incisive because it is a tool that fulfils the function of cutting, not because it signifies the act of cutting; the word *securis* signifies axe, as *homo* signifies man, but it does not signify what an axe does, namely cutting.

Further, it should not be overlooked that the meaning which is ascribed to syncategorematic words is in several cases not the act that is eventually performed by the speaker as an agent, but something
described in different terms. The words *tantum* and *solus* are said to signify negation of a whole's being joined with a part (*privationem associationis totius ad partem*); the act of excluding, as performed by the speaker as an agent or as carried out by the syncategorematic mark as an instrument, is consequential upon that meaning and cannot be identified with it. Similarly, *praeter* is held to signify not exception, but rather lack of application to a specified case (*instantiam in parte sive non cum hoc*), while *et* is said to signify not copulation, but some kind of placing together (*comparationem*). In these cases, then, a distinction is drawn between the mental act that must be assumed as the significate of the syncategorematic word concerned and, on the other side, the act of excluding, excepting, or copulating that is consequently performed by the speaker and by the syncategorematic word as an instrument. Although in the case of negation this distinction is less prominent, the fact that it is stressed elsewhere makes it unlikely that by the so-called significate of the particle *non* Peter means the negation as it is actually performed by the speaker. Without thereby implying that Peter would deny that *non* has to be the mark of a mental act which is exemplified by the speaker's mind, we may conclude that what Peter intends to convey is rather that *non* carries out negation as its proper function, but that it does not signify what it actually does.

In general, compared with Bacon, Peter exhibits a notable shift of attention in the way he deals with the problem of the signification of syncategorematic words. As we have seen, Bacon looks at that significatum almost exclusively from the viewpoint of the speaker who uses a syncategorematic word as a mark of the inner state in which he happens to find himself. By emphasizing the passive way in which the soul is disposed or affected by what it apprehends and by paying scant attention to the difference between the cognitive and the non-cognitive states of the soul, he is able to highlight the similarity between the manner in which interjections are marks of purely affective states and the way in which syncategorematic words are marks of the corresponding dispositions of the soul. Peter of Spain, on the other hand, begins his treatise with the thesis that syncategorematic words signify certain things (*dictiones syncategorematicae significant res aliquas*). He hastens to add that these things are neither the things that are signified by a subject-term or a predicate-term nor the things that as qualities are attributed to genuine things, but rather those dispositions of the subject or the predicate which they have in relation to each other and which
determine the character of the whole proposition. The fact that he starts off with Aristotle's saying 'It is because the thing is or is not that the statement is called true or false' (*Categories*, 12, 14b21) and the fact that he explicitly characterizes syncategorematic words as making a semantic contribution to the truth-conditions of the sentences in which they occur, make it clear that his orientation is quite different from the one found in Bacon. Whereas the latter gives pride of place to the mental side of the signification of syncategorematic words, Peter of Spain lays much more stress on the way these words help to determine how the world has to be in order that a sentence can be called true. This change of perspective, accompanied by the awareness that the mental correlates which syncategorematic words undoubtedly have are of a more active and cognitive nature than the states of which interjections are marks, makes it understandable that Peter is reluctant to characterize the meaning of syncategorematic words as a signification per modum affectus. If *affectus* is taken in the narrow sense of an affective state as it is evinced by interjections and the moods of the verb, the assimilation of the meaning of syncategorematic words to the way in which such affects are expressed must have looked to him far from illuminating and even seriously misleading.\(^{21}\)

Peter of Spain's conception of the meaning of syncategorematic words fits neatly into a scheme of the signification of the parts of speech that was given by his contemporary Robert Kilwardby and is apparently found in many manuscripts dating from about the middle of the thirteenth century.\(^{22}\) According to that scheme, a part of speech signifies either a *mentis affectus* (interjections) or a *mentis conceptus* (the others). Of those which signify a *mentis conceptus*, nouns, pronouns, verbs, and participles signify a thing or *per modum rei*, while prepositions, adverbs, and conjunctions signify *per modum circumstantiae rei*, that is, in the manner of a mode or disposition of a thing. There can be little doubt that Peter would put syncategorematic words into the third group. They do not belong to the same class as interjections nor do they signify *per modum rei*, as, for instance, *negatio*, *negare*, *exclusio*, *excludere* do. What they signify is not a thing as it is represented to the mind in an act of conceiving and denoted by a noun or a verb, but rather some mode of conceiving. That mode is in several cases not described in terms of the act that is consequently performed by the speaker, but in some other way. When the speaker excludes, excepts, or copulates, he performs those acts as a result of using the
appropriate syncategorematic word as a mark of the mode of conceiving that is actualized in his mind. That syncategorematic word in turn signifies the corresponding mode of conceiving, but it does not also signify the act of exclusion, exception, or copulation that it thereby carries out; what it does can be indicated only by the verb *exercere*. Such an act as exclusion, therefore, is signified *ut concepta* by the noun *exclusio* and the verb *excludere*, but *ut exercita* it is exemplified both by the speaker who performs the act of excluding and by the word *tantum* which carries out its proper function as an instrument.

**Nicholas of Paris’s Syncategoremata**

Peter of Spain’s general approach to the meaning of syncategorematic words was continued by Nicholas of Paris, who composed a treatise on that subject towards the middle of the thirteenth century and is also the author of the so-called *Summae Meienses*. In connection with the word *tantum* he advances the by now familiar arguments against the view that it signifies exclusion. That no word signifies the action which it actually performs is illustrated by the verb *currit*, which signifies running, but does not signify that it signifies (running). What *tantum* signifies is not exclusion, but something that is variously described as *privatio concomitantiae, solitudo, praecisio*. By adding this nuance of meaning to the proper signification of the term that is adjoined to the syncategorematic word, *tantum* brings about exclusion as a result of its potential meaning’s being actualized by the adjoined term. And it is from this resulting exclusion, as from the purpose for which it has been invented, that *tantum* is named an exclusive word (*Quia ergo huiusmodi dictiones solitudinem significantes vel praecisionem ex consequenti exclusionem fact sunt, ideo ab exclusione, sicut a fine, recipiunt nuncupationem*).

However, it is only in the case of *tantum* that this distinction between signification and function is made in such a conspicuous manner. When Nicholas comes to deal with *praeter*, he does not avoid the phrase ‘*Praeter* signifi cat *exceptionem*. Presumably, the word *exceptio* is then used both for the signification of *praeter* and for the function it consequently fulfils. The question as to how *praeter* signifies exception is answered as follows. Assuming that everything that has a signification signifies either *per modum concepti* or *per modum affecti*, Nicholas rejects the latter possibility, on the ground that
only interjections signify in that way and praeter is not an interjection. Concluding that praeter signifies per modum concepti, he next introduces within that category a distinction between such words as exceptio and excipere, which are signs of things, and such a word as praeter, which is a signum signi and discharges its signification only in combination with the word adjoined to it. The latter characterization may be elucidated by a passage in the Summae Metenses, where Nicholas says that the signs of quantity are signa signorum, which means that they signify modes of supposition in signs of things. There, by the way, he is careful to distinguish the signification of omnis from its function (Viso de significatione huius signi 'omnis' videndum est de officio eius. Quod quia dictur distribuere vel confundere . . .).

In the same vein, he rebuts the objection that an cannot signify disjoining together with choosing by pointing out that it is perfectly capable of having that meaning if it is taken as signifying per modum affectus. But then an affectus is not to be understood as the kind of affective state of the soul that is expressed by interjections, but rather as an affectus that belongs to a sign in relation to that which it signifies (affectus qui est signi in relatione ad signalum). This remark is followed by the sentence prout dicitur quod hoc nomen 'exceptio' significat exceptionem ut rem, 'praeter' vero ut affectum. If that sentence is translated by 'as they say that the noun exceptio signifies exception as a thing, praeter, however, as an affect', it sounds like an allusion to the view of the meaning of syncategorematic words held by Robert Bacon and his followers. Only, Nicholas gives a remarkable turn to this saying by keeping the word affectus but providing it with a quite different interpretation. What he means by it is not some state of the soul that may be assimilated to the affects expressed by interjections, but rather the mode of signifying that a syncategorematic word adds to the proper signification of the term that is adjoined to it, or the additional shade of meaning by which the proper signification of a term is affected and modified when it is combined with a syncategorematic word. It seems to me that this twist given to the meaning of the word affectus is a telling mark of the difference in viewpoint that separated Peter of Spain and Nicholas of Paris from Robert Bacon and his followers.

Henry of Ghent's Syncategoremata

The approach that had been favored by Peter of Spain and Nicholas of
Paris was also taken by Henry of Ghent, in his *Syncategoremata* dating from about 1260. The main points of his doctrine are the following. Syncategorematic words signify only in combination with categorematic terms. They have a potential and indeterminate meaning which is activated and made definite by the proper meaning of the adjoined terms. They do not themselves signify a thing, but bestow an additional mode of conceiving and signifying upon the way in which the adjoined term denotes a thing. In this manner they give a certain disposition to the adjoined term and so to the thing denoted by it (*disponunt rem et terminum*). As a rule, Henry describes this mode of signifying in terms that are different from the names he gives to the acts that are said to be performed by the syncategorematic words as instruments. What syncategorematic words do and bring about — for instance, composition, exclusion, exception, arrangement in an order of consequence, disjunction — is an effect of the signification that is peculiar to them; they make the adjoined term signify in a certain mode and consequently exercise their own function. But they do not and cannot signify what they actually carry out as the specific task for which they have been devised. What syncategorematic words do may be conceived of and signified as a thing (*ut res significata*) by such words as *negatio* and *negare*, but in the syncategorematic word itself the negation is only as a mode of signifying and conceiving and thus as exercised (*et ita ut exercitata*). By the addition *et sic importatur per hanc dictionem ‘non’ tamquam per instrumentum negandi* Henry must mean that *non* makes a semantic contribution in the form of a mode of signifying which it bestows upon adjoined terms and that thereby it introduces a negative quality into the sentence as a whole.

II

*The Exercitus/Significatus Distinction Applied to Problematic Sentences*

Of the many problems and puzzles which medieval thinkers tried to solve by applying, in one way or another, the distinction between an *actus exercitus* and an *actus significatus*, I shall now briefly mention some and then proceed to examine one in a more detailed manner. A first problem has been discussed extensively by Kretzmann: the proposition *Omnis homo praeter Socratem excipitur* (‘Every man besides Socrates is excepted’) seems to have the awkward consequence
that Socrates is simultaneously excepted and not excepted. This problem is connected with the question as to whether the argument *Omnis homo praeter Socratem currit, ergo omnis homo Socrate excepto currit* is valid. Nicholas of Paris declares it to be invalid on the ground that the premiss contains *praeter*, which signifies an *affectus* — presumably in his sense of that word — while the conclusion contains *excepto*, which is a word that signifies a *conceptus*, and that thus the premiss can be true without the conclusion being true. From a slightly different angle the author of a treatise called *Abstractions*, which perhaps dates from the third decade of the thirteenth century, had attributed the invalidity of the argument *Omnis homo excipitur praeter Socratem, ergo omnis homo excipitur, Socrate excepta* to the fact that by *excepta* exception is signified but not exercised, while by *praeter* it is exercised but not signedified. Henry of Ghent, too, seeks a solution by appealing to the difference between an *exceptio significata* and an *exceptio exercita*; a difference which he queerly characterizes as an *aequivocatio exceptionis*.

In another context — a discussion of the meaning of the sacramental words *Hoc est corpus meum* — Thomas Aquinas refers to a distinction between two uses of the demonstrative pronoun *hoc*: it introduces indication either as conceived of or as exercised (*aut ergo importat demonstrationem ut conceptam aut ut exercitam*). In the latter case it fulfils its normal function of actually pointing out something (*facit demonstrationem*). In the former case, however, Aquinas says that it is taken as a thing — and not as standing in a relation to another thing — as when one would say 'this pronoun *hoc*'. This is remarkable in that *demonstratio ut concepta* is not understood as the significate of the noun *demonstratio* or the verb *demonstrare*, but as that to which *hoc* refers in material supposition. This deviation is no doubt caused by the fact that some theologians held the opinion that the ritual words *Hoc est corpus meum* are quoted, rather than used by the speaker himself. If that opinion were correct, *hoc* would not have its normal function of indicating something to which the speaker himself wishes to draw attention, but, as quoted in material supposition, it would only imply that somebody else has used it to point to something. On that view, the speaker and the pronoun *hoc* do not perform the act of pointing to something as a *demonstratio exercita*; what the speaker might offer by way of comment is that someone else has used *hoc* in order to refer to something, and in giving that comment the speaker would have to
conceive of that act of reference, which consequently would be a demonstratio concepta. With respect to the same formula, Bonaventure expresses himself in a less problematic way: he observes only that hoc introduces indication, not as it is conceived of, but as it is actually performed (non ut conceptam, sed ut exercitam) adding that indication is performed only with regard to something that really exists at the time of utterance. In another passage Bonaventure points out that diversity may be introduced either as a mode and as exercised or as a thing and as conceived of (ut modum vel ut rem, vel ut exercitam vel ut conceptam). Such a preposition as de introduces it ut exercita, while such words as alius and distinguere introduce it ut concepta.

Furthermore, in the Grammatica speculativa composed by Thomas of Erfurt in the beginning of the fourteenth century, the distinction between an actus exercitus and an actus significatus is employed to shed light upon the difference between two kinds of so-called transitive constructions in which actions are involved. In such a construction as Lego librum ('I am reading a book') the action is an actus significatus, since it is conceived of by the speaker and signified by the transitive verb lego. On the other hand, if one says O Thoma or O Henrice, the action of calling or addressing the person referred to by the name in the vocative case is not signified by such a verb as vocare or excitare, but carried out by the particle o; therefore, it is an actus exercitus or exercitatus.

More widely diffused was the application of the distinction exercitus/significatus to the act of predication. In that use it seems to have been made especially popular by John Duns Scotus, who connected the distinction between a praedicatio exercita — for instance Homo est animal — and a praedicatio significata — for example Genus praedicatur de specie — with the distinction between the two levels of conceiving of which first-order and second-order concepts (intentiones primae and intentiones secundae) are characteristic. The distinction was taken over and carefully explained by such influential authors as William of Ockham and Walter Burley. It also was this distinction that drew some of the silly abuse with which enlightened humanists saw fit to revile their scholastic colleagues.

The Exercitus/Significatus Distinction Applied to a Paradox of Self-Reference

However, rather than expatiating on the later vicissitudes of the distinc-
tion exercitus/significatus, I would like to have a closer look at the use to which it was put in attempts to solve the insolubile that was usually presented in the form of the isolated sentence Ego dico falsum. In the so-called Insolubilia Monacensia, which according to the editor dates from about 1200, a distinction is drawn between the enuntiabile or dictum propositionis — that which is asserted or can be asserted by means of a declarative sentence, probably in the sense in which Abelard and his followers used those terms — and such acts as saying, thinking, or answering, which are performed (exerceri) with respect to that enuntiabile or dictum. Now, a troublesome problem is said to arise when in the assertible content the action denoted by the verb is determined by the word falsum and at the same time this very action is performed with respect to that assertible. In particular, as soon as I actually perform the act of saying (dicere) with respect to the assertible me dicere falsum, by uttering or writing down the isolated sentence Ego dico falsum, a contradiction is bound to follow. For this saying is either true or false. If it is true, then it is true that I say something that is false; therefore I say something that is false, and since I say only this, this is false. If it is false, then it is false that I say something that is false; therefore I do not say anything that is false; nevertheless I say something, therefore something that is true; and since I say only this, this is true and consequently not false.

Towards the end of the treatise the author also calls attention to the fact that there are propositions — spoken or written declarative sentences — which cannot possibly be true, while their dicta may well be true. His example is the sentence Nulla propositionem esse veram may very well be true, presumably as a kind of Satz an sich and provided that it does not become the object of any performed act of saying, which would inevitably mould it into the corresponding proposition. Although the author does not yet explicitly use the terminology of the opposition significatus/exercitus in characterizing his distinction between the act of dicere or proponere as it is signified in the enuntiabile and that act as it is effectively performed with respect to the enuntiabile, he certainly makes use of that contrast. That others did render the distinction explicit in those terms is clear from a passage in the Insolubilia of Marsilius of Inghen, to which Peter of Ailly refers in his treatise on the same subject. According to these authors, concerning such sentences as Omnis propositio vocalis est
particularis and Nulla propositio vocalis est negativa it used to be said that the actus exercitus is inconsistent with the actus significatus; in other words, that the very existence of such a proposition is incompatible with its truth.

**Restringentes and Distinguentes on the Paradox**

Returning to the Liar, we find that an explicit distinction between dictio exercita and dictio concepta was invoked by the so-called restringentes. In the treatise on insolubles that is sometimes ascribed to William of Sherwood the restringentes are said to be adherents of the thesis that the word falsum cannot stand for the very sentence of which it is a part. When therefore someone utters the isolated sentence *Ego dico falsum*, that sentence can only mean the same as the expanded sentence *Ego dico falsum aliud*. As the latter sentence is, by stipulation, simply false, the reply to the former sentence must equally be that it is false. When he then goes on to argue that it is therefore false that he says something (else) that is false and that consequently he does not say anything (else) that is false, this may be conceded. But if he is going to round off his fatal reasoning by adding that he says something of a certain nature (namely, either true or false; but not false) and therefore something that is true (*et dico aliquale, ergo verum*), then these restricters silence him by pointing out that he is committing the fallacy of figure of speech. For the verb *dico* as it is used in the first premiss (*Ego dico falsum (aliud)*) is taken to refer to other sayings that are conceived of (*copulavit . . . pro aliis (dictionibus) conceptis*), whereas in *dico aliquale* it is supposed to stand for the performed act of saying (*stat pro dictione exercita*). There occurs, then, a change of acceptation (*copulatio*) in the premisses.

As is clear from the Insolubilia by Thomas Bradwardine, the fallacy of figure of speech could also be related to the word falsum. When Socrates utters the isolated sentence *Socrates dicit falsum*, this sentence has to be denied according to the doctrine of the restricters. If it is then argued *Socrates dicit hoc falsum, ergo Socrates dicit falsum*, the fallacy of figure of speech is committed. For in the premiss the term falsum stands for Socrates's saying to which the pronoun hoc refers, whereas in the conclusion it stands only for other sayings. The argument contains a shift from this saying that is false to something different
from this saying that is false (in conclusione fit ibi mutatio ab hoc falso ad falsum aliud ab hoc).

Bradwardine also mentions the opinion of the so-called distin- guentes, who received that appellation from their claim that the paradox of the Liar can be solved by introducing a distinction between dicere exercitum and dicere conceptum. By dicere exercitum they understood a saying that is being performed and is characteristic of that which is in process of being said, but has not yet been completed (dicere quod est in exercitio et est illius quod est in dici et non est dictum complete). With this performative use of dicere as an indication of the act that one thereby carries out, the descriptive use is contrasted: a saying is conceived of when someone has first said something or something of a certain nature — namely, something that is either true or false — and a moment later says that he says that or something of that nature (cum homo prius dixerit aliquid vel aliquale et instanti post dicat se dicere illud vel tale).

Suppose now that Socrates utters the isolated sentence Socrates dicit falsum. If dicit in that sentence is taken as an indication of the very act of saying that is performed in uttering the sentence, then Socrates speaks the truth; the sentence might be considered as self-verifying. But if dicit is taken as referring to a saying that has been performed at an earlier moment and is now conceived of, then Socrates utters a falsehood. Just as Henry of Ghent characterized the difference between an exceptio significata and an exceptio exercitata as an aequivocatio exceptionis, the distinguishers held that the paradox of the Liar is due to an equivocation in the verb dicere. Though it is doubtful if that diagnosis is quite correct, there seems at any rate to be a better reason to speak of a certain ambivalence in the use of the one word dicere than in the case of excipere, where two different sorts of words are available: the syncategorematic mark praeter and such categorematic words as exceptio and excipere. One might, however, align the two cases by pointing out that excipere in such phrases as Socrate excepto may be used performatively as well as descriptively, and that the performance of an act of saying may be revealed both by incorporating a performatively used dico into the very sentence uttered and by that bare sentence itself, which after all functions as a kind of syncategorematic expression.

However that may be, let us assume — with the restricters — that Socrates’s isolated sentence Socrates dicit falsum is false. Then one might argue again: since it is false that Socrates says something that is
false, nothing that is false is said by Socrates; but this is said by Socrates; therefore this is not false (*nullum falsum dicitur a Socrate, hoc dicitur a Socrate, ergo hoc non est falsum*). According to the distinguishers, however, this is an invalid syllogism, since the first premiss is true only if *dicitur* is taken in the sense of *dicere conceptum*, whereas the second premiss is true only if *dicitur* is taken in the sense of *dicere exercitum*. Bradwardine himself rejects this way of solving the paradox, on three grounds. First, he contends — without further elaboration — that even if the premisses uniformly concern performed saying (*quod semper fiat locutio de dicere exercito*), there is a familiar deduction that leads to a paradoxical outcome. Perhaps he had the following argument in mind. If *Socrates dicit falsum* is assumed to be true, as being verified by the act of saying that is performed in uttering that very sentence, then it is true that Socrates says something that is false; but all he utters is the sentence *Socrates dicit falsum*; therefore, this is false. Secondly, Bradwardine repudiates the solution because it is not sufficiently general. And, lastly, he thinks that a solution should not appeal to the fallacy of equivocation, but rather to the fallacy called *secundum quid et simpliciter*, as Aristotle had done.\(^50\)

### An Aristotelian Solution Using the Exercitus/Significatus Distinction

A good example of a solution of a variant of the Liar that conforms to Aristotle's authority and at the same time makes explicit use of the distinction between an *actus exercitus* and an *actus significatus* is found in the 53d question of the *In libros Elenchorum quaestiones* of which John Duns Scotus may be the author.\(^51\) The question is posed as follows: whether someone who begins to speak thus 'I say something that is false' speaks the truth without qualification (*Utrum incipiens sic loqui 'Ego dico falsum' sit simpliciter verus in dicendo*).

### The Negative Answer

The author first mentions an affirmative answer to the question and then a negative answer. I start my exposition with the negative one, which is very brief and based on the consideration that a speaker is characterized according to the nature of what he says (*a qualitate sui dicti*). Since the speaker has not said anything previously, his sentence
The author does not disagree with this answer, but rather considers it to be incomplete. According to him, the full answer ought to be that with regard to this statement *Ego dico falsum* there is both truth and falsity: truth in a certain respect (*secundum quid*) and falsity without qualification (*simpliciter*). That the statement is false without qualification follows from the supposition that the speaker has not previously said anything that is false; if the statement had been occasioned by, for instance, his prior statement that a man is a donkey, it would be true. That there is also some truth in the statement, in a certain respect, is maintained in two slightly different ways. Some writers assert that the utterer speaks the truth in a certain respect because it is at least true that an act of saying is performed concerning some false sentence (*quia circa aliquam orationem falsam exercetur vere actus dicendi*). On this view, the characterization of the speaker as *verus* is based on the datum that he really performs an act of saying, while the restriction *secundum quid* is apparently explained as applying to a statement as content or object concerning which the act is performed: *secundum quid* is here tantamount to *circa aliquam orationem*. Others elucidate the claim that the utterer speaks the truth in a certain respect by pointing out that at least as far as the performance of the act of saying is concerned (*actu exercito*), the proposition implies something that really is the case. But as it is not on account of the performed act that a statement is called true or false without qualification, therefore such a statement is called true only in a certain respect. For by the performance of the act the hearer is given to understand that the speaker performs an act of saying concerning something that is false, and that is indeed the case in reality. Here the restriction *secundum quid* is apparently to be understood as tantamount to *actu exercito*: as far as the performance of the act of saying is concerned, as opposed to the propositional content that determines truth or falsity without qualification.

The author refrains from expressing a preference for one of these interpretations. As the two explanations of *secundum quid* are not fatally inconsistent, he limits himself to the contention that the utterer of *Ego dico falsum* speaks the truth *secundum quid*, however that restriction is interpreted. What is interesting in the two interpretations he mentions is that both of them sound rather reminiscent of the distinction made by the author of the *Insolubilia Monacensia*: the
distinction between an _enuntiabile_ or _dictum_ and the act of saying that may be performed with regard to it. But whereas the author of the _Insolubilia Monacensia_ seems to use the words _enuntiabile_ and _dictum_ in the sense attached to them by Abelard and his followers, Scotus employs the term _enuntiabile_ as a synonym of _oratio_ or _propositio_, a usage that was quite common in his time, though perhaps somewhat less apt to do justice to the problems for which the Abelardian meaning was originally invoked. Still, he evidently adheres to a very similar distinction between the act of saying and that concerning which the act of saying is performed, the sentence or proposition that is the content or object of the act. That will become even clearer when we now turn to that part of the 53d question which contains the affirmative answer given to it and the author’s refutation of that affirmative answer.

_The Affirmative Answer_

Those who held that the utterer of the isolated sentence _Ego dico falsum_ speaks the truth without qualification reasoned as follows, in two steps. The first step consists of the argument _Ego dico falsum; ergo verum est me dicere falsum_. The validity of this argument is proved by appealing to the fact that when _hominem esse asinum_ or any other falsehood is substituted for _falsum_, the resulting argument — _Ego dico hominem esse asinum; ergo verum est me dicere hominem esse asinum_ — is evidently valid. By a second step _Verum est me dicere falsum_ leads to _ergo dico verum_. The soundness of this step is proved in the following way. Whoever says that something is as it is in reality, says something that is true; whoever says that he says something that is false at a time when he utters this falsehood ‘I say something that is false’, says that something is as it is in reality; therefore, whoever says that he says something that is false, says something that is true (_qui dicit sicut est, dicit verum; sed qui dicit se dicere falsum, cum dicit hoc falsum _‘Ego dico falsum’, ipse dicit sicut est; qui ergo dicit se dicere falsum, dicit verum_). When the two steps are combined, it is seen that _Ego dico falsum_ entails _ergo dico verum_.

The affirmative answer is corroborated by a somewhat different route. The speaker says something that is either true or false. If he says something that is true, then he speaks the truth without qualification, since a speaker is characterized according to the nature of what he says. If he says something that is false, then it is false that he says something
that is false; since, then, he does not say anything that is false, but
nevertheless says something that is of a certain nature (aliquale: either
true or false), he says something that is true. So, each member of the
initial disjunction yields a confirmation of the positive answer.

The Replies to the Arguments

Scotus begins his reply to the foregoing arguments with the observation
that the first step in the first reasoning — Ego dico falsum; ergo verum
est me dicere falsum — is not formally valid. As a counterexample he
adduces the argument Homo est animal, ergo verum est (me) dicere
hominem esse animal. This argument is formally invalid even though
the conclusion is included in the premiss actus exercito. Scotus appar-
etly means that with respect to Homo est animal a distinction has to
be drawn between the contingent fact that someone performs an act of
saying with respect to it and, on the other hand, that concerning which
the act of uttering is performed, the propositional content. Although an
act of saying happens to be performed concerning Homo est animal
when it is made the premiss of an argument, it is there only as an actus
exercitus, not as an integral part of the conceived state of affairs that
determines the logical consequences of the proposition. The conclusion
is indeed made true by the premiss, but it is, so to speak, verified in the
wrong place: in the logically irrelevant act of uttering the premiss,
instead of in the propositional content expressed. The reason why this
consideration applies equally to the alleged proof Ego dico falsum; ergo
verum est me dicere falsum is no doubt that in the premiss an act of
saying, of which the performatively used phrase Ego dico is the
appropriate mark, is actually carried out concerning something that is
false, but that this accidental fact is not the conceived state of affairs
which, as a logically relevant ground, is required by the conclusion.

Scotus, however, is willing to grant that the conclusion follows from
the premiss in an informal way (licet non formaliter), presumably on
the ground that even though the act of saying is not conceived of in the
premiss, it is still given as an adventitious datum which as a matter of
fact renders the conclusion true. But after this concession he directs his
attack against the second step of the first argument, by denying that
Verum est me dicere falsum; ergo sum verus in dicendo simpliciter is a
sound inference. According to him, it is an instance of the fallacy called
secundum quid et simpliciter. In support of his view he adduces two
other instances of that fallacy. The first, evidently connected with a passage in Aristotle that was often discussed together with the paradox of the Liar, is the argument *Iste bene iurat adimplendo iuramentum, ergo bene iurat*. Scotus does not elaborate this example, but it must be interpreted, I think, along the following lines. When someone swears that he is going to swear falsely — for instance, by the formula *Per deum! ego periuro* — he performs the act of swearing with regard to the propositional content that he is going to swear falsely. Now, in general he may be said to swear correctly in so far as he complies with the propositional content concerning which the act of swearing is performed (*adimplendo iuramentum*). In this respect — *secundum quid* — the statement *bene iurat* in the premiss is true. But if the propositional content happens to be the requirement that he swear falsely, he cannot be said to swear correctly without any qualification (*simpliciter*). For what he does by complying with the propositional content — which in itself is laudable — is in this particular case tantamount to forswearing himself, and that cannot be truly described as *bene iurat* as it is intended in the conclusion.

The second analogous instance of the fallacy called *secundum quid et simpliciter* is presented by Scotus as follows. Suppose that someone utters the sentence *Homo est asinus*. Then it is true that he says something that is false, but from that truth it does not follow that he says something that is true (*verum est ipsum dicere falsum, et tamen non sequitur, quod ipse dicat verum*). This example is closer to the question at issue in that the premiss is obviously taken to be true inasmuch as the utterer really performs an act of saying concerning a false proposition (*secundum quid*), whereas the conclusion claims that the propositional content that a man is a donkey is true (*simpliciter*). Scotus is aware of the fact that in certain cases the inference *Verum est me dicere; ergo sum simpliciter verus* is justified. As an example he offers the inference *Verum est me dicere hominem esse animal; ergo sum simpliciter verus*. Here the premiss may be taken to comprise two truths: the truth that I really perform an act of saying concerning the propositional content that man is an animal, and the truth of that propositional content itself. From these two truths together it follows that I am speaking the truth, for the truth of the propositional content guarantees that there is truth without qualification in what I say. More particularly, this is so in those circumstances in which there is truth in *actu significato* as well as truth in *actu exercito*. This particular case —
formulated now in terms of actus significatus and actus exercitus — has to be viewed. I think, in the light of what Scotus has said before concerning the falsity without qualification of the isolated utterance Ego dico falsum. This utterance, he says, would be true without qualification if the utterer had previously said that a man is a donkey, or had uttered any other falsehood. Well, suppose now that someone says that a man is a donkey. He then really performs an act of saying concerning a propositional content that is false. So, there is truth secundum quid in his saying, but falsity simplicitier. A moment later it dawns upon the speaker that he has said something that is false, and he expresses that realization by means of the utterance Dico falsum. Again, he really performs an act of saying, so there is truth secundum quid in his saying. But now also the propositional content, which is synonymous with Dico falsum aliud, is true. Consequently, there is both truth simplicitier and truth secundum quid in his second saying. But, as can be learned from those treatises on insolubles that mention the distinction between a dictio exercita and a dictio concepta, or between dicere exercitum and dicere conceptum, in the second saying — Dico falsum — there is both a dictio exercita or dicere exercitum, the act of saying performed with respect to Dico falsum, and a dictio concepta or dicere conceptum that is signified by the verb dico in Dico falsum. In this particular case, then, where an act of saying figures both as performed and as conceived of and signified, Scotus describes the type of inference whose premiss comprises truth simplicitier as well as truth secundum quid as those inferences whose premiss has both truth in actu significato and truth in actu exercito.

After this digression, let us return to the second step in the first argument in support of a positive answer to the central question. Scotus maintains that the inference Verum est me dicere falsum; ergo sum verus in dicendo simplicitier does not belong to that privileged category of inferences whose premiss comprises both truth secundum quid and truth simplicitier, or, as it may be put equivalently in this particular case, has both truth in actu exercito and truth in actu significato. Its belonging to that special category is, of course, precluded by the fact that the propositional content concerning which the act of saying is really performed is characterized as falsum: there is truth in actu exercito, but falsity in actu significato. The only correct inference to which we are entitled is the trivial one to the effect that it is true that I perform an act of saying concerning something that is false, and that, therefore, that
concerning which I perform the act of saying is false (*Verum est me exercere actum dicendi circa falsum; ergo illud circa quod exerceo est falsum*).

Finally, we have to consider Scotus's reply to the second argument in support of a positive answer to the main question. It is the argument that starts from the exhaustive disjunction that the person who utters the isolated sentence *Ego dico falsum* says either something that is true or something that is false, and then derives from each disjunct the conclusion that he says something that is true without qualification. Scotus's first objection is that the person in question utters a proposition that is false (*Dico quod dicit propositionem quae est falsa*). It seems to me that this can mean only that he rejects the disjunction as being inappropriate to the situation as it has been stipulated. Given that the speaker has not produced any prior statement at all, the proposition concerning which he performs an act of saying, and which is decisive with regard to truth or falsity without qualification, is plainly false. And if we know for certain that one of the disjuncts is really the case, it is, if perhaps not false, at least seriously misleading to describe the situation by means of a disjunction.

After disposing of the disjunction in this somewhat Gricean manner, Scotus concentrates upon the reasoning that starts from the premiss that what the speaker says is false. According to him, it does not follow from this starting-point that it is false that the speaker says something that is false (*ergo falsum est ipsum dicere falsum*). What follows is rather that it is true that he says something that is false (*ergo verum est ipsum dicere falsum*). This correct conclusion presumably means that the speaker really performs an act of saying concerning the false propositional content that he says something that is false; consequently, there is truth *secundum quid* and *in actu exercito* in his saying. But, as Scotus has already pointed out, from that correct conclusion it does not follow that the speaker says something that is true without qualification, but rather that he says something that is false without qualification (*Et ex hoc non sequitur, quod dicat verum; sed magis, quod dicat falsum*). The upshot, then, of the reasoning that takes the second member of the original disjunction as its premiss is the harmless inference that from the truth that someone performs an act of saying concerning a propositional content that is false, it follows that the propositional content concerning which he performs that act is false.
Conclusion

Even in the light of the very incomplete evidence of which I have availed myself in the foregoing exposition it can be plausibly maintained that the pair *exercitus/significatus* basically stood for an ontological distinction. From an ontological point of view, a form could be taken to exist in two different ways: either as concretely realized in some individual or as abstractly conceived of in an intellectual act of simple apprehension. This ontological distinction was applied in the most general way to existence or being itself, which was divided into actual existence, or existence *in actu exercito*, and potential existence as it is merely thought of in the mind, *in actu significato*.57 But we have seen that it was equally applicable to such more specific forms as the activities of running and riding: whenever these are actually performed by an agent they present themselves *in actu exercito*; in so far as they are merely conceived of by someone and signified by the appropriate noun or verb they are before the mind *in actu significato*.

As I have tried to show by a minute analysis of some examples, this basically ontological distinction gained considerable semantical importance when it was brought to bear upon the doings of language-users and linguistic expressions. In this field it was the meaning of nouns and verbs, the so-called categorematic words, that was considered to be fundamental. A noun and a verb were held to signify something by being conventionally related to a form that is the content of the speaker's conception and so has an intentional mode of existence that differs from the real existence of the form as it is in fact instantiated by a particular thing. At an early stage, however, it was felt that this view of the meaning of words could hardly explain the special way in which such linguistic items as interjections and so-called syncategorematic signs discharge their semantic functions. In the case of interjections it is clearly not the affective state as it is coolly thought of by the intellectual part of the soul that is brought to expression, but they are rather spontaneous marks of some affect or emotion that the speaker himself actually has and exemplifies, as a *forma exercita*. This difference between such an interjection as *euax* and the corresponding noun *gaudium* apparently prompted some writers to treat the difference between such a syncategorematic sign as *non* and the corresponding
noun *negatio* in a similar way. They came to hold that the syncategore-
matic sign is a mark of an inner state that really affects the speaker's
soul, while the noun is the more distant and etiolated expression of the
act of negating as it is only conceived of. Even though others deemed
the analogy to interjections less helpful, they continued to recognize the
need of a twofold distinction. On the one hand, they were keenly aware
of the difference between (1) words which are signs of simple appreh-
ensions and of the conceived objects of thought and (2) words that are
marks of the forms of thinking by which the simple apprehensions of
objects are modified and disposed in such a way that they are capable
of constituting a proposition, the genuine unit of speech. On the other
hand, as regards (2) a sharp distinction was drawn between their
function as it is effectively accomplished by them as instruments of
which the speaker makes use in conveying his acts of modifying
apprehensions, and that function as it is conceived of by the reflecting
mind and signified by corresponding nouns and verbs.

Whereas in the case of syncategorematic words there is a fairly
clear-cut divergence of form and category between those syncategore-
matic words themselves and the words that signify their functions as
they are merely conceived of, there are also cases where one and the
same word may be used both for an action that is performed and for
that same action as it is conceived of. A case in point is the act of
saying. That act may be performed by simply uttering a sentence; but
sometimes the utterance of a sentence includes a form of the verb
dicere used in a purely performative and parenthetical manner, as a
more explicit indication of what one is simultaneously doing. That same
verb dicere, however, is also often employed to refer to another saying
that has been already completed and is subsequently conceived of
and signified. This difference between a performative and a descriptive
use of the same verb *dicere* was occasionally invoked in attempts to
unravel the intricate difficulties connected with various paradoxes of
the Liar-family.

In sum, a good many medieval philosophers were fully aware of the
fact that there are "some cases and senses... in which to say something
is to do something; or in which by saying or in saying something we are
doing something".58

NOTES

2 J. Duns Scotus, *Opera omnia*, I, Vivès, Parisii, 1891, p. 124, 182.


15 Compare: *ut affectus — vel actus ut actus, quod idem est —; actum ut actum per exercitium* (the manuscript has: *exercitum*, which is quite acceptable) in an objection mentioned by Nicholas of Paris (Braakhuis, o.c., II, p. 338).

16 Braakhuis, o.c., I, pp. 259—308, in particular p. 259, 265—6, 269, 277, 290—1, 295. In addition to the excerpts edited by Braakhuis, I have also made some use of the *Textus omnium tractatuum Petri Hispani*, Coloniae, 1489, which contains the *Tractatus syncategorematical* that has been translated by J. P. Mullally (Milwaukee, Wisc., 1964), and of the *Parva logicalia*, published in Petrus Hispanus, *Summulae logicales cum Versorii Parisiensis clarissima expositione*, Venetiis, 1572, pp. 264—311. Note, however, that the latter texts do not always faithfully represent Peter’s own views.


18 Braakhuis, o.c., I, p. 265.
Peter's actual text betrays some confusion between the word securis and the tool it denotes. Cf. Braakhuis, o. c., I, p. 269: Sicut dicitur securis incisiva ab incisione exercita et non ab incisione significata; 'securis' enim nullo modo significat incisionem, sed significat securum, sicut 'homo' hominem, et exercet incisionem sive ipsum scindere.

In this respect there is a curious resemblance to the way David Hume treats the notion of belief. Compare, for instance, An Enquiry concerning Human Understanding, V, 1, 39–41.


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Braakhuis, o. c., II, p. 88, has: (cum dicitur 'currir', hoc verbum significat cursum.) sed non exercet quod significat, whereas the manuscript has: sed non significat quod significat. Although it is undeniable that the verb currir does not itself run, that is not the point here. The reading of the manuscript is corroborated by such a passage as Petrus Hispanus, Summulae Logicales, Venetiis, 1572, p. 272: sicut se habet dictio in communi (ad) actum suum communem quem exercet, qui est significare, similiter dictio specialis ad actum suum specialem. Sed dictio (in) communi non significat actum suum communem. Dictio enim non significat actum suum significare, sed exercet ipsum.


formulating inferences that is mentioned in the Tractatus Anagnini, dating from about 1200 (L. M. de Rijk, Logica modernorum, II, 2, Assen, 1967, pp. 235—8, 243). The inference, for example, from a universal negative proposition to its simple converse is said to be expressed nominate when mention is made of the conversion itself, as in Haec propositio ‘Nullum mortuum est homo’ est universalis negativa et vera et habet simplicem conversam; ergo eius simplex conversa est vera. The same inference is said to be expressed innominate when it is directly about things, propositions, or dicta, as in Nullus homo est lapis; ergo nullus lapis est homo, or in Vera est ista ‘Nullum mortuum est homo’; ergo vera est ista ‘Nullus homo est mortuus’, or in Verum est nullum mortuum esse hominem; ergo verum est nullum hominem esse mortuam. About three centuries later a kindred distinction is found in discussions of the question as to whether such first principles as the law of non-contradiction and the law of excluded middle are explicitly assumed as premises in proofs. Thomas de Vio Caetanus, for instance, states in his comments on Aristotle’s Posterior Analytics, I, 11, 77 a 5 ff. (Venetiis, 1556, p. 65 V) that such first principles may enter proofs in a twofold way, either virtually or formally. In the former case they are leading principles according to which a demonstration is conducted, while in the latter case they are explicitly assumed as premises in the demonstration itself. When they are formally assumed as premisses, a further distinction should be drawn between cases where they are taken in actu significato, as in the formulation Non contingit simul esse et non esse, and cases where they are taken in actu exercitio, as in A est ens et non est non ens. The difference is said to lie in the fact that in the first formulation the principle that an affirmation and a negation concerning the same things are incompatible is signified, without the affirmation and negation being performed, whereas in the second formulation the compounding affirmation and separating negation are actually carried out. See also Commentarii Collegii Conimbricensis in universam dialecticam Aristotelis, Colonie Agrippinae, 1607, p. 626 (Commentarii in libros de Posteriori Resolutione, Cap. VIII, De principiis, q. 1, a. 3).


38 Cf. M. Nizolius, De veris principiis et vera ratione philosophandi contra pseudosophos libri IV, Parma, 1553, I, 7.


41 Petrus de Ailly, Conceptus et insolubilibus, Parisiis, 1498; Peter of Ailly, Concepts and Insolutes, an annotated translation by P. V. Spade, Dordrecht, 1980, p. 69, 143. See also Pseudo (?)-Scotus, In libros Enlenchorum quaestiones, q. 52 (J. Duns Scotus, Opera omnia, II, Vivès, Parisiis, 1891, p. 75): qui interimit omnem loquellam virtute dici de omni negat suam loquellam, sed quia non potest negare loquellam nisi per loquellam, ideo per actum exercitium ponit loquellam, virtute tamen dici de omni negat suam, sicut et aliam. Compare Aristotle, Metaphysics, IV, 8, 1012 b 15—8.


44 For the term *copulatio* see, for instance, Peter of Spain, *Tractatus*, ed. L. M. de Rijk, Assen, 1972, p. 80: *Copulatio est termini adiectivi acceptio pro aliquo*.

45 Roure, o. c., p. 294.

46 Roure, o. c., p. 296. This opinion is also found in Paul of Venice’s *Logica magna*, Venetiis, 1499, fol. 192 V, from which it has been translated by I. M. Bochenski, *Formale Logik*, Freiburg-München, 1962, pp. 281—2 (35.33).

47 The reading *in dici* seems to me to be the right one, rather than Roure’s *indici*, or *iudici*, on which Bochenski’s translation appears to be based.

48 Bochenski’s translation of this passage contains a serious error.

49 Compare John le Page in Braakhuis, o. c., I, p. 205: *oratio non significat actum qui exercetur per ipsam. Quod patet: cum dicitur ‘Socrates currit’, haec oratio non significat affirmationem* (but performs the act of affirming).

50 Aristotle, *De sophisticis elenchis*, 25, 180 b 5.


53 The insertion of *me* or some other word that refers to the utterer of *Homo est animal* is necessary, because of the needed correspondence with *verum est me dicere falsum* and because otherwise it would be impossible to present the argument as a *non sequitur* (compare Aristotle, *Categories*, 12, 14 b 16).

54 The published text has: *Dico me dicere falsum; ergo etc*. Both the sense and the context, however, demand the replacement of *Dico* by *Verum est*.

55 In *sed est secundum quid et simpliciter* Bochenski (o. c., p. 277) inserts *non* before *simpliciter*. That insertion makes the whole passage well-nigh unintelligible.

56 Aristotle, *De sophisticis elenchis*, 25, 180 a 38. The Latin translation of that passage is: *Neque si bene iurat id quidem et qua, necesse est et bene iure, nam qui iurat se periaraturum, bene iurat periarans hoc solum, at non bene iurat*. Compare also, for example, Lambert of Auxerre’s comment on this passage (*Logica*, ed. F. Alessio, Firenze, 1971, pp. 186—7): *respondendum est quod male iurat simpliciter; periarat enim se. Secundum quid autem bene iurat* (this is no doubt the right reading; Alessio badly distorts it).


VII

OCKHAM ON PERFORMED AND SIGNIFIED PREDICATION

1. Basic predication, signification, and supposition

Let us start with what may be called basic predication, that is, acts of predication that are not directed, on a relatively higher level, at another predication of a lower rank. Such a basic predication may have regard either to things that are not signs or to mental, vocal, and written signs. An example of a basic predication about things that are not signs would be ‘Man is an animal’. According to Ockham, this instance of a primary basic predication contains, in the first place, two categorematic terms, namely, the general conceptions or natural signs of men and of animals, and, in the case of a vocal or written predication, the conventional signs that signify the same objects in subordination to the mental apprehensions. Ockham emphatically rejects the view defended by his contemporary Walter Burleigh, according to which also the things denoted by the categorematic signs may be part of a predication; the categorematic constituents of a predication are always concepts and words, never things that are not signs. Next, the categorematic terms are combined in a specific way by a syncategorematic mental act which adds a certain modification to the signification of the two categorematic terms. That such a manner of thinking of the denoted objects is actually realized in the speaker’s mind is indicated by the copula, which is a conventional mark of the fact that at the very moment of utterance an instance of the act of predicating one concept of another is effectively performed by the speaker. By thinking of men and animals in this predicative way the speaker brings about a novel unit of thought and speech, with the meaning that the objects for which the first categorematic term, which has become the subject, stands are objects for which the second categorematic term, which has become the predicate, stands. Although Ockham holds that in an act of predication it is always a concept or word that is predicated of another concept or word, he insists at the same time that the import of the product of that act is not that the first concept or word is the second concept or word, but rather that the things for which the subject supposits are things for which the predicate supposits.

In this connection it becomes important to know what kinds of significates of categorematic terms Ockham admits and what kinds of supposition he ascribes to categorematic terms when they are used in the context of a proposition. As for signification, he distinguishes between concepts of first order, which are mental apprehensions of particular things, and concepts of second order, such as the notions of genus and species, which are natural signs of concepts of first order. In the same vein, spoken and written words, which signify in subordination to their

1 Cf. Quodlibeta III, q. 5.
2 Cf. Summa logicae I, cap. 66; Quodlibeta III, q. 5.
mental correlates, are divided into those which denote things that are not words and those which
denote words in so far as they are conventional signs. It is worthy of note that Ockham
repudiates two kinds of significates that were admitted by others. He rejects the view that
conventional signs signify primarily the concepts that are associated with them; according to
him, spoken and written words signify the same objects as the corresponding concepts, albeit in
subordination to those concepts. Further, he denies that there are universals in the world outside
thought and language which could be the significates of general terms; the things denoted by
concepts of first order are always particulars.

In conformity with this doctrine of signification, which restricts the domain of denotata to
particular things and natural or conventional signs, Ockham acknowledges three main types of
supposition. In a proposition, a categorematic term stands either for its significates, in personal
supposition, or non-significatively for itself, as a concept, in simple supposition, or as a word,
in material supposition. In our example ‘Man is an animal’ both terms have personal
supposition, which means that they stand for their significates: individual men and individual
animals in the outside world. That both terms have personal supposition may, however, also be
true of a secondary kind of basic predication, which is not about things that are not signs but
precisely about natural or conventional signs. For instance, in the predications ‘Every concept is
in the mind’ and ‘Every vocal noun is part of a proposition’ the terms stand for their significates,
although at least some of these significates are signs and not things other than signs. A different
case is the hackneyed example ‘Man is a species’. Ockham is of the opinion that such a sentence
is ambiguous between a reading in which ‘man’ has personal supposition and a reading in which
it has simple supposition, standing for the concept of man. On the former interpretation the
proposition is obviously false, since it is not the case that any of the individual things signified
by ‘man’ is a species. But as the predicate is a term that applies to concepts or words, a reading
with simple supposition is permitted and we may therefore interpret the sentence as stating that
the concept of man is a species-concept. Similarly, the sentence ‘Man is a noun’ is ambiguous
between two readings. Because the interpretation that one of the significates of ‘man’ is a noun
is manifestly absurd, the interpreter is forced to look for another possibility, which is indeed
provided by the signification of the predicate, and to take ‘man’ according to material
supposition. What is typical of both these examples is that, on the one hand, the ordinary
interpretation of the subject according to personal supposition makes the sentence evidently
false, but that, on the other hand, the signification of the predicate offers a way out, which
consists in taking the subject according to simple supposition or material supposition and thus
making it stand for one of the significates of the predicate.

2. Object predication and higher level predication

In the primary and secondary kinds of basic predication outlined above the only predication
involved is a performed act, an actus exercitus, of connecting two categorematic terms as subject

1 Cf. Summa logicae I, cap. 11-12; Quodlibeta VII, q. 10.
2 Cf. Summa logicae I, cap. 65.
and predicate. But this very act of predicating, of which the conventional copula indicates that it is being simultaneously performed by the speaker, may subsequently be made the object of a reflective predication of higher level in which the initial performed act is merely conceived of and described, rather than effectively performed, and thus becomes an *actus significatus*. In such a predication of higher level the categorematic terms that are subject and predicate of the object predication may appear in two different ways. In 'Animal is predicated of man' (*Animal praedicatur de homine*) the terms 'animal' and 'man' cannot possibly have personal supposition, because it is not an individual man or an individual animal that is subject or predicate of the object predication 'Man is an animal'. Since the object predication can contain only concepts or words as terms, the higher level predication has to refer to the concept or word 'animal' and to the concept or word 'man'; and that means that the terms 'animal' and 'man' in so far as they are constituents of the higher level predication must have either simple or material supposition. However, instead of retaining the very terms 'animal' and 'man' of the object predication in the higher level predication, where they then stand for themselves, one may also refer to them in a more general manner, for instance, by saying 'A genus is predicated of a species' (*Genus praedicatur de specie*). In that case the terms 'genus' and 'species', which are concepts of second order, have personal supposition, standing for such concepts of first order as the notions of animal and man, which are among their significates.

In the basic predication 'Man is an animal' the terms 'man' and 'animal' are connected by a syncategorematic act, which is a constituent of an altogether different nature. Whereas through the categorematic apprehensions something is put before the mind as an object merely thought of and signified, the act of predicating one concept of the other is a performance that really takes place in the mind of the speaker, something that he actually does. The conventional copula is nothing but an outward signal that such an act is being effectively carried out, just as such words as 'not', 'only', 'except', are signals that the speaker is actually negating, excluding, or excepting. Now, this performed act or *actus exercitus* which is the kernel of the basic predication becomes an object of mere thought and signification in the higher level predication. There it is put before the mind and denoted by the verb 'to predicate' or similar terms (*subici, verificari, competere⁵*), which as such have no predicating power but are concepts of second order that signify a syncategorematic mental act, which may be considered as a concept of first order in a large sense⁶. The difference between 'is' as a signal of an *actus exercitus* or really performed act of predication and 'to predicate' as the categorematic sign of that act in so far as it is merely contemplated is the same as the difference between 'not' and 'to negate', 'only' and 'to exclude', 'except' and 'to except'⁷.

In addition to mentioning the categorematic terms and the performed act of predicating which together form the basic predication, the higher level predication may also contain a characterization of the supposition that the mentioned categorematic terms have in the object predication. The description 'Animal is predicated of man' then becomes 'Animal, taken according to personal supposition, is predicated of man, taken according to personal

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⁵ Cf. Summa logicae I, cap. 66; Quodlibet VII, q. 9.
supposition'. In this case there is a difference between the kind of supposition — simple or material — which the terms 'animal' and 'man' necessarily have in the higher level predication and the kind of supposition — personal — which those terms have in the object predication 'Man is an animal'. By contrast, in 'Species, taken according to personal supposition, is predicated of man, taken according to simple supposition', the term 'man' has the same kind of supposition in both this higher level predication and in the object predication 'Man is a species'.

It should be noted, however, that there is still a difference between, for instance, the simple supposition of 'man' in the object predication (and also in the higher level predication), where the term actually stands for the concept of man, in what may be called a suppositio exercita, and on the other hand the phrase 'taken according to simple supposition' in the higher level predication, which merely signifies the simple supposition of 'man' in the object predication, without anywise exercising it.

The foregoing remarks about the difference between a predication as an actus exercitus and that same predication as an actus significatus have been made with an eye to the correct method of getting from a performed predication that is the object of inquiry to a predication of higher level in which the predication concerned is adequately conceptualized and described. This way of viewing the matter may be reversed by setting out from an actus significatus, such as 'A genus is predicated of a species', and asking oneself how the signified act of predication is performatively instantiatted or exercised (exercetur). From the latter viewpoint Ockham frequently emphasizes that it would be wrong to exemplify the description 'A genus is predicated of a species' by the performed predication 'A species is a genus' (Species est genus*). If the higher level predication is to be true, the predications that exemplify it ought to be true as well; but there is no possibility of interpreting 'A species is a genus' in such a way that it would become true. The correct instantiations are such performed predications as 'Man is an animal', 'Whiteness is a colour'. Similarly, it would be wrong to exemplify 'Blindness (caecitas) is predicated of a man' by 'A man is blindness', or 'A relative term (relatum) is predicated of a man' by 'A man is a relative term'. Rather, the correct exemplifications are 'A man is blind' and 'A man is a father'.

Besides the differences between a predication as actus exercitus and as actus significatus which have been touched upon already, Ockham also draws attention to the following points. There is a structural difference between the two kinds of predication inasmuch as the subject of 'Man is an animal' becomes (part of) the predicate of 'Animal is predicated of man' and the predicate of the former becomes the subject of the latter. Moreover, the Latin sentence Animal praedicatur de homine was held to be ambiguous between a (false) reading in which the subject has personal supposition and a (true) reading in which it has simple supposition. But, since the predicate of 'Man is an animal' is not a term signifying concepts or words, there is no such choice between personal and simple supposition of the subject in the object predication. Lastly, but most importantly, a basic predication and the corresponding predication of higher order

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8 Cf. In librum Porphyrii de Pradicabilibus cap. 6 (Opera Phil. II, p. 93); Summa logicae I, cap. 66; Quodlibeta VI, q. 5; VII, q. 9; Scriptum in I Sent. d. 2, q. 4 (Opera Theol. II, p. 144); d. 2, q. 7, p. 259 and p. 264.
9 Cf. In librum praedicamentorum Aristotelis cap. 17, § 8 (Opera Phil. II, p. 312).
10 Cf. Summa logicae I, cap. 66; Quodlibeta VII, q. 9.
11 Cf. also In librum Porphyrii de Pradicabilibus cap. 6 (Opera Phil. II, p. 94).
differ in that a basic predication may be either about particular things that are not signs or about concepts and words, whereas a true predication of higher level is never about things that are not signs but always and exclusively about concepts or words. Whether the performed predication ‘Man is an animal’ is truly conceptualized and described by means of ‘Animal is predicated of man’ or, more generally, by means of ‘A genus is predicated of a species’, in both versions the categorematic terms have reference only to the concepts or words used in the performed predication. These concepts and words are introduced into the higher level predication either by making them stand for themselves, in simple or material supposition, or by denoting them through concepts of second order among whose significates they are as concepts of first order. In sum, basic predications are first and foremost about particular things other than signs and secondarily about signs. The basic predications themselves, however, never contain things that are not signs, but consist exclusively of mental or verbal elements. Therefore, the predications of higher order which are about those basic predications as mental or verbal units can never be about things other than signs; they concern solely concepts and words.

3. Problems solved by heeding the distinction

We are now sufficiently equipped to have a closer look at some of the philosophical and theological problems which Ockham claims to be able to solve by invoking the logico-semantical distinction between predication as an actus exercitus and predication as an actus significatus. At several places he contends that ignorance or disregard of this crucial distinction is the source of numerous errors. In particular, many authoritative writers have put forward statements which are clearly intended to be true, but which are expressed in such a way that strictly speaking they are false. Mostly, this perplexity is due to the fact that those authors express themselves in a manner that is appropriate to a predication as an actus exercitus, whereas what they actually mean ought to be expressed in a way that is appropriate to a predication as an actus significatus. A provocative thesis, which was apt to call forth sharp opposition.

Let us take as an example the sentence ‘Colour is the primary and adequate object of vision’. Taken at face value, according to the proper meaning expressed by that kind of phrasing, such a sentence cannot possibly be true. If we ask for what the term ‘colour’ is standing, the answer can be only that it has personal supposition; for the predicate is not of such a type as to be applicable solely to concepts or words, so that simple or material supposition is out of the question. But if the subject is taken according to personal supposition, then it stands for the individual colours that it signifies, and no particular colour is the primary and adequate object of vision. Moreover, even those philosophers who hold that the subject of this sentence somehow
supposits for a universal in the outside world would have to concede that such an entity cannot be seen, whether primarily or otherwise. Nevertheless, a benevolent interpreter may try to save the truth of the statement by assuming that it is meant as a predication of higher level. Then the correct way of expressing what is actually meant would be ‘Being an object of vision is primarily and adequately predicated of colour’, a description that is exemplified by the performed compound predication ‘Every colour is an object of vision and nothing but a colour is an object of vision’. In the latter predication the terms ‘colour’ and ‘object of vision’ have personal supposition, standing for their significates: the particular colours and objects of vision that are indeed apprehensible by the faculty of seeing. The higher level predication, by contrast, is not about any things that are apprehensible by vision, but rather about the general concepts of colour and object of vision. Whereas these concepts have personal supposition in the object predication, they necessarily have simple supposition in the higher level predication.

Along the same lines Ockham treats such sentences as ‘Man is primarily capable of laughing’ (Homo est primo risibilis). Strictly speaking this sentence is false, because neither an individual man nor a postulated universal of manhood is capable of laughing in the sense indicated by ‘primarily’, according to which the predicate applies to the subject universally and exclusively. The correct wording of what is meant would be ‘Being capable of laughing is primarily predicated of man’. This predication of higher level is performatively instantiated by the compound predication ‘Every man is capable of laughing and nothing but a man is capable of laughing’, where ‘man’ and ‘capable of laughing’ supposit for significates which do possess the capacity of laughing. In the higher level predication, however, the same terms do not stand for any things in the outside world at all; they supposit for the concepts themselves, which are said to be connected in a peculiar way in the object predication.

According to Ockham, such sentences as ‘Colour is the primary and adequate object of vision’ and ‘Man is primarily capable of laughing’ suffer from the kind of ambiguity that used to be classified as the second mode of amphiboly. Just as for instance the expression ‘to plough the sands’ has both a literal and a metaphorical meaning, these sentences may be understood either literally and according to their proper sense (de virtute sermonis, secundum proprietatem sermonis, proprie sicut sonat, secundum suam formam, secundum se) or metaphorically (improprie, transumptive). On the former interpretation they are manifestly false. If there is to be truth in them, one is forced to assume that a construction that is appropriate to the domain of predication as an actus exercitus is being applied to the domain of predication as an actus significatus, where in strictness a quite different way of expressing oneself is called for.

It seems to me that the main reason behind Ockham’s insistence that it is safer to avoid the ambiguous type of sentence and to keep rigorously to distinct ways of expressing the two senses involved is the following. If the version ‘Colour is the primary and adequate object of vision’ is used with the intention of stating a truth, it is fairly evident that none of the three kinds of supposition which Ockham is prepared to admit is capable of yielding that intended truth. Simple supposition, in the sense favoured by Ockham, as well as material supposition are clearly

15 Cf. Aristotle, Posterior Analytics I, 4, 73 b 32 ff.
16 Summa logicae III-4, cap. 6.
17 Cf. Aristotle, Sophistici elenchi 4, 166 a 6 ff.
excluded, while taking ‘colour’ according to personal supposition would make the sentence refer to individual colours, none of which is the primary object of vision. There is, then, a very strong temptation to invoke an additional type of supposition which would preserve and explain the truth of the statement. As a matter of fact, Walter Burleigh maintained that the term ‘colour’ in the sentence in question has simple supposition in his sense, according to which it stands for its first significate (pro suo significato primo), which for him is the universal of being a colour as it really exists in the world outside thought and language. The sentence then states that the universal nature signified by the name ‘colour’ is shared by everything that is per se and properly visible (natura communis significata per hoc nomen ‘color’ est communis omni per se et propriè visibili); and according to Burleigh, that is true. But in Ockham’s eyes this is exactly the point where the misleading character of the sentence concerned becomes most conspicuous: its very structure prompts naïve thinkers to postulate such superfluous entities as universals in the world of things. In his opinion, it is a logical mistake to leave the sentence in its original form and then try to save its truth by adding another kind of supposition to his own three types, which are not capable of making it true. In a logically more satisfactory way the problem can be solved by sticking to the types of supposition accepted by himself and reformulating the troublesome sentence as a predicication of higher level. Once that reformulation has been carried out, the temptation to posit other things than particulars has completely vanished, for the simple reason that the terms in a higher level predicication, as opposed to the terms of a basic predicication, never have reference to things of whatever kind, but only to concepts and words. This logico-semantic ascent is therefore a very effective means of countering the tendency to multiply entities without necessity. A similar manoeuvre is mentioned by Burleigh and Jean Buridan, yielding such explicit metastatements as ‘Man is capable of laughing’ is primarily true’ and ‘Colour or the coloured is visible’ is per se and primarily true.

4. Statements involving the notion of identity

The view set forth above is generally confirmed by other passages where Ockham makes use of the distinction actus exercitus/actus significatus in connection with predicication. In conclusion, it may be interesting to add a few words about some places where the distinction is applied to statements involving the notion of identity. If the sentence Definilio et definition sum idem realiter is taken as an actus exercitus, in the sense that a defining concept and the corresponding defined concept are the same in reality, it is obviously false. Actually, it should be reformulated as an actus significatus, to the effect that being the same in reality is truly predicated of a
defining concept and the corresponding defined concept. This higher level predication is exemplified by such true basic predications as ‘A man and a rational animal are the same in reality’, where the terms ‘man’ and ‘rational animal’ have personal supposition. The two concepts are of course distinct, but they signify one and the same thing or set of things. The point is also brought out by Ockham’s comment on the rule that what is predicable of a defined concept is always predicable of the defining concept, and the other way round.". This rule is valid only when the concepts concerned have personal supposition in the corresponding basic predications: for example, in ‘Man is mortal’ and ‘A rational animal is mortal’. The rule does not apply to cases where the concepts have simple or material supposition, as is clear from the difference in truth-value shown by ‘‘Rational animal’’ is a phrase (oratio) indicating the quiddity of man’ and ‘‘Man’’ is a phrase indicating the quiddity of man’. Here, the distinctness of the concepts or linguistic expressions themselves, as opposed to the identity of their significates, blocks intersubstitution.

In a comparable way Ockham deals with the problem that in using such an expression as ‘Some things that are differently conceived of are one and the same thing’ (Aliqua distincta ratione sunt una res) the speaker is forced to suggest, by the plural of the subject, that at the same time he is talking of more than one thing and of only one thing. This awkward consequence can be avoided by giving the intended statement its proper expression, by means of the higher level predication ‘The concept of being one and the same thing is predicated of concepts that are different and have different definitions’, which is truly exemplified by, for instance, ‘Socrates and white Socrates are one and the same thing’, presumably to be expanded into ‘Socrates is one thing and white Socrates is the same thing’. Or, to conclude with a weightier example, instead of saying, falsely, ‘The divine attributes are in reality one and the same thing, namely, the divine essence’ one should rather say ‘The concept of being one and the same thing is predicated of the diverse concepts of the divine attributes’, which is exemplified by, for instance, ‘The divine intellect and the divine will are in reality one and the same thing, namely, the divine essence’. As concepts or terms, ‘divine intellect’ and ‘divine will’ are clearly different, but the thing signified by them is the same.

\[24\] Quodlibeta VI, q. 5.
Especially since W.V. Quine — in "Reference and Modality" of 1953 and "Quantifiers and Propositional Attitudes" of 1956 — had revived interest
in the question of substitutivity of terms within transparent and opaque contexts, historians of logic and its philosophy have endeavoured to show
that part of this issue has a striking parallel in the medieval discussion of *appellatio rationis*. As a result, the chequered fortunes of the technical term
*appellare* have been elucidated, by Maierù, while De Rijk offers a helpful survey of Buridan's use of that term. Others have concentrated on the notion
of *appellatio rationis* as it was employed by this influential author in connection with verbs that denote an inner act of the mind. In particular,
several aspects of the puzzling propositions 9-15 in Buridan's *Sophismata*, Ch. IV, where this notion is put to a fruitful use, have been scrutinized by Geach,
Moody, Van der Lecq, and also by the translator and editor of the *Sophismata*. Further details have been added by Ashworth, Nuchelmans, and King, in the introduction to his translation of Buridan's treatises on supposition and consequences. In spite of all these welcome efforts
there is still room, I think, for a renewed look at certain points of Buridan's doctrine, specifically with regard to the connection between the notion of
*appellatio rationis* and his ideas about the objects of assent and knowledge.

3 1976.
4 1965.
5 1965.
6 1985.
9 1980: 56-64.
1. Buridan’s general view of intentional verbs

When fire heats water or a stone touches the earth, the subject of the action denoted by the verb does not have a mental conception of the object in which the action performed terminates. Therefore, sentences describing such events cannot be ambiguous owing to differences in the way the objects are conceived of and consequently there is no need to contrive any means to mark that type of distinctness of sense — for instance, by varying the order of the words in the sentence. Wherever the object-term is placed, it just stands for the thing or things denoted by it, without any mediating conception on the part of the subject. Regardless of its position, one term for the object may be replaced by another term as long as the two terms stand for the same thing or things. If a stone falls on a person who is approaching and the person who is approaching is your father, then the stone falls on your father.11

By contrast, in the case of verbs that denote an inner act of the mind the object at which such an intentional verb is directed necessarily calls for some conception by which the subject of the action denoted by the verb puts the object before his mind. One cannot think of something, remember something or desire something without forming a mediating notion that, as the content of those mental activities, determines the external object at which they are aimed. Whereas that concept must be present in the mind at the moment the mental activities are performed, the thing conceived of may be either present or past or future or merely possible. When I am thinking of Aristotle or the Antichrist, my conception of those objects is contemporaneous with the act of thinking, but the object thought of belongs, respectively, to the past and to the future.12 This means that, while in such a sentence as I beat a horse the object-term stands for a horse that is present at the time of the beating, the supposition of the object-term in the sentence I am thinking of a man is always extended to men that are either present or past or future or possible (terminus ampliatur ad praeterita, futura et possibilia si construatur cum verbo significante actum animae intellectivae, sive a parte ante sive a parte post).13 These two features, the need of a mental conception of the object on the part of the subject and the ensuing amplification of the supposition of the object-term, are shared by the meanings of all sentences in which intentional verbs occur essentially.

13 B 1957: 349.
Besides these common elements, however, sentences dominated by an intentional verb were held to be susceptible of two different interpretations. The difference was usually illustrated by imagining a situation in which a person, who happens to be your father, is approaching and the question is asked whether you know him. The answer may be either that you know him only as the one approaching, that is, solely under the conception that is expressed by the sentence *This is someone approaching*, without being able to identify him more specifically, as, for instance, your father; or that you know him either through the conception of being someone approaching or through any other conception that applies to the same person. In the first case, the inference to the effect that you know (him as) the one approaching and that the one approaching happens to be your father and that therefore you know (him as) your father, is invalid, since the premisses are true, but the conclusion is false. In the second case, however, the first premiss means that you know him either through the conception of being someone approaching or through any other conception that applies to the same thing, and the conclusion means that you know him either through the conception of being your father or through any other conception that applies to the same person; and on that interpretation the inference is clearly valid. Exploiting the relative freedom of word-order in Latin, medieval logicians chose the form *Cognoscis venientem* for the reading which to the object-term *venientem* exclusively attaches the conception that properly belongs to it, and the form *Venientem cognoscis* for the disjunctive reading that leaves room for any other conception with the same application.

Such a sentence as *Triangulum cognoscit*, then, might be explicated in the following way: With triangles, either present or past or future or possible, conceived of either through the conception that properly belongs to the word *triangle* or through some other fitting conception, he is acquainted. Owing to the two disjunctions, one relating to the supposition of the object-term and the other regarding the conception necessarily involved in the cognitive state denoted by the verb, the sentence has fairly liberal truth-conditions: it can be true even if at the moment of utterance no triangles exist, and the triangles may be put before the mind by means of any conception under which they fall. As a consequence of the disjunctive indifference of conception, the object-term is suitable to be made the middle term — in the sense of *medium syllogisticum* — of such a valid syllogism as *With triangles he is acquainted; every isosceles triangle is a triangle; therefore, with isosceles triangles he is acquainted.*

On the other hand, the sentence *Cognoscit triangulum*, in that order, is to be explicated as follows: He is acquainted with triangles, either present or past or future or possible, apprehended by him through the very conception according to which the word *triangle* has been imposed to signify triangles. Here, the object-term has the same enlarged or natural supposition\(^\text{15}\) as in *Triangulum cognoscit*, but its standing for all conceivable triangles is mediated by exactly one conception, namely, the notion of triangle which is associated with the word *triangle* and which the subject actually has in mind\(^\text{16}\). The object-term, then, has a twofold signification: it stands for triangles and at the same time it appellates and additionally signifies the unique conception under which the subject apprehends them. Buridan carefully explains the difference between *supponere* and *appellare*\(^\text{17}\). The word *album*, for example, stands or supposits for a white thing and appellates whiteness as it is related to the thing concerned. In general, any term suppositing for something and signifying something else for which it does not supposit, appellates everything which it signifies other than what it supposits for as being related to what it supposits for (\textit{Terminus enim omnis pro aliquo supponens et alius pro quo non supponit significans appellat omne quod significat alius ab eo pro quo supponit per modum adiacentis ei pro quo supponit} \(^\text{18}\)). So, in our case the object-term *triangulum* has its peculiar form of amplified supposition, but in addition it signifies something else: the proper conception which is associated with the word *triangulus* (\textit{ratio sua propria}) in so far as that conception is actually formed by the subject in thinking of the objects for which the word *triangulus* stands. For the truth of the sentence *Cognoscit triangulum* it does not suffice that the subject directs his thought to all triangles in general and indifferently; it is also required that he do so by the particular act of thinking that determines the denotation of the word *triangulus*. In this requirement lies the crucial difference with the case that is expressed by *Triangulum cognoscit*, where the truth is guaranteed by his thinking in a certain way of things that are triangles, regardless of the manner in which they are conceived of.

The fact that in *Cognoscit triangulum* the object-term combines its amplified or natural supposition with the appellation of the conception that properly belongs to it and is actually formed by the subject is also reflected in Buridan’s view that the supposition of that object-term has a peculiar form

\(^\text{15}\) Cf. B 1957: 206.
\(^\text{17}\) B 1957: 184, 343.
\(^\text{18}\) B 1957: 185.
of what was called confusion without distribution (confusio non-distributiva). This peculiar form differs in four respects from other instances of non-distributive confused supposition. From Cognoscit triangulum one can neither infer a disjunctive proposition nor a categorical proposition with a disjunctive extreme; for both descents under triangulum would alter the conception said to be actually present in the subject’s mind. Next, the inference from Cognoscit triangulum to Triangulum cognoscit, in which triangulum has determinate supposition, is valid; for if the subject conceives of triangles in the way required by the premiss he necessarily conceives of them in the disjunctive way allowed by the conclusion. Thirdly — and very interestingly, as we shall see in connection with the fifteenth sophism — Buridan contends that the inference from Cognoscit triangulum to Omnen triangulum cognoscit is correct; for if the subject thinks of no triangle in particular but of all triangles indifferently, it must be true, in a distributive sense, that every triangle, however conceived of, is such that it is apprehended in the non-distributive confused manner. Finally, Buridan rejects the inference from Cognoscit omnen triangulum to Cognoscit isoscelum; for someone can have in mind a general conception of triangles in a distributive manner without forming any conception of special kinds of triangles or of individual triangles.

It is clear, therefore, that in such a sentence as Cognoscit triangulum the particular conception through which the subject thinks of triangles is, as it were, sacrosanct. Since the subject’s actually thinking of triangles through precisely that conception is one of the truth-conditions of that sentence, every inference from it to a conclusion that attributes to the subject a different conception of the things falling under the original conception must be invalid. In this respect the way in which the object-term appellates the proper conception according to which it has been imposed to signify things of a certain kind resembles the type of material supposition in which a term stands for the concept that is properly associated with it, as in Homo est species. It should not be overlooked, however, that there is also a crucial difference: in our example triangulum does not materially supposit for its own proper concept — it personally supposits for external objects that are triangles — but it additionally appellates that concept. For Buridan, the main point is that the twofold signification of triangulum is restricted to particular things: the object-term supposits for particular triangles and it appellates the subject’s particular act of conceiving of them.

19 B 1957: 333.
2. Intentional verbs involving a propositional conception

So far we have considered intentional verbs that are normally construed with a simple accusative. But there are also intentional verbs, especially of knowing and believing, which require a complex object, namely, an expression, in Latin mostly an accusative and infinitive phrase, which signifies that something is the case. To such a spoken or written expression there corresponds in the mind a propositional conception of the state of affairs known or believed. Accordingly, Buridan points out\(^\text{21}\) that *Scio hominem* and *Opinor lapidem* are not well-formed sentences. Correct constructions are *Scio hominem esse animal* or *Lapidem esse durum opinor* or, in a divided way, *Hominem scio esse animal*. These three combinations, together with the propositional conceptions that correspond to the accusative and infinitive phrases (or the equivalent *quod*-clauses), exhaust the possibilities of adding an object to this type of intentional verb. For Buridan this grammatical fact created a serious problem. In the contemporaneous debate about the object of assent and knowledge he resolutely rejected the view that the object of such attitudes is exclusively the proposition for which, according to that view, the accusative and infinitive phrase materially supposits, and also the doctrine that it is a peculiar entity that can be signified only by a propositional complex, the so-called *complexe significabile*. His own view, which is usually focused on the object of knowledge by scientific proof\(^\text{22}\), has room for a plurality of objects. Essentially, there are two kinds of object of demonstrative science: on the one hand, the conclusion of the demonstration, that is, the true proposition at which the attitude of knowing is directed; on the other hand, the particular things for which the terms of that known proposition supposit. For instance, if we reach the conclusion *Every man is capable of laughing*, the primary or immediate object of that assent is the proposition itself; but by knowing that proposition we also have knowledge about every man and about every being that is capable of laughing (*Haec enim conclusio Omnis homo est risibilis* est scibilis quia demonstrabilis, et sciendo eam nos habemus scientiam de omnibus hominibus et de omnibus risibilibus\(^\text{23}\)). At the same time, Buridan leaves no doubt as to his conviction that the most important object of knowledge lies in the world of things (*Non enim curaret artifex de propositionibus et terminis ni-\(^{21}\) B 1977: 75.

\(^{22}\) Cf. B 1518: fol. 34Va; B 1509: fol. 2Va; B 1977: 147. See also Scott 1965.

\(^{23}\) Scott 1965: 662.
si propter hoc crederet habere scientiam de rebus circa quas intendit agere et sibi utilia procurare24).

It is obvious, then, that Buridan urgently needed an appropriate way of expressing his view that we have propositional knowledge of things. For that purpose such ill-formed combinations as *Scio hominem* were manifestly of no avail. But he saw a way out by using expressions of the type *De homine habeo scientiam*, which can be duly completed by adding *quod est animal* or other predicates, and then assimilating the sentence *De homine habeo scientiam quod est animal* to the sentence *Hominem scio esse animal*. That is exactly what he does in his *Sophismata*25. The two constructions *Scit hominem esse animal* and *Hominem esse animal scit* can be considered as differing in the same way as the sentences *Cognoscit triangulum* and *Triangulum cognoscit*. The first construction means that the subject assents in a certain mode to the state of affairs that man is an animal — which in reality, according to Buridan, is nothing but man in so far as he is an animal — and that he does so through the complex conception that is appellated by the accusative and infinitive phrase as the mental counterpart that gives that phrase its proper meaning. The second construction means that the subject assents to the same state of affairs either under the propositional conception corresponding to the accusative and infinitive phrase or under any other fitting complex conception. Buridan pays little attention to the second construction. What especially interests him is the possibility that lies between the two extremes: the divided construction *Hominem scit esse animal*, in which the accusative *hominem* precedes the intentional verb and the infinitive and the predicate are put after it. In that construction it is stated that the knower conceives of the things denoted by the predicate through the sole conception according to which *animal* has been imposed to signify animals, but that the men to whom that predicate is attributed in the accusative and infinitive phrase may be conceived of in any way whatever as long as the conception applies to men. Because of the fact that *hominem* precedes the intentional verb and thus falls outside its scope, attention is shifted from the conception actually formed by the knower in apprehending the things about which he has knowledge to those things themselves, regardless of the way they are conceived of. At the same time, the disjunctive indifference of conception makes it possible to syllogize about the objects concerned by varying the ways they are conceived of. These two features, which consist in highlighting the things of which one has knowledge, as opposed to the con-

24 B 1509: fol. 2Va.
ception actually used to think of them, render the construction *Hominem scit esse animal* eminently suitable as an equivalent expression of the thesis that Buridan wishes to emphasize: that one has knowledge about things that are men, namely, that they are animals (*De homine habet scientiam quod est animal*). One might say that Buridan exploited the difference of meaning that was traditionally attached to such pairs as *Cognoscit venientem* and *Venientem cognoscit* in order to give adequate expression to his independently gained view that not only propositions but also things in the outside world are the objects of assent and knowledge.

Further, it should be kept in mind that Buridan, although he acknowledged propositions as the immediate object of knowledge, did not hold, as others did, that the accusative and infinitive phrase in *Scit hominem esse animal* materially supposits for the proposition *Homo est animal*. According to him, the terms occurring in the accusative and infinitive phrase have personal supposition and the whole phrase stands for men in so far as they are animals. It is therefore impossible for the accusative and infinitive phrase to have material supposition as well. What it does with respect to the mental proposition *Homo est animal* is something different from suppositing for it: it appellates it as the complex conception according to which the phrase has been imposed to signify the things known. Nevertheless, there are some cases in which an interpretation of the accusative and infinitive phrase according to material supposition is called for. The proposition *Scio chimaeram non esse*, for example, cannot possibly be true if the accusative and infinitive phrase is taken according to personal supposition, that is, as a complex conception of things; for even when that supposition is extended to past, future and possible things, there is nothing to which the term *chimaeram* can apply. In order to save the truth of that sentence we must assume that the accusative and infinitive phrase stands materially for the proposition *Chimaera non est*, which is true because of the falsity of its contradictory. Such sentences as *Scio chimaeram non esse* are the only ones for which Buridan is prepared to admit that the object of knowledge is nothing but a proposition. As a rule, if one knows that something is the case, that knowledge is ultimately directed at the things for which the terms of the accusative and infinitive phrase supposit personally and significatively; in other words, at the things, present or past or future or possible, that are apprehended by the subject through the peculiar form of thought that is appropriate to an act of knowing.

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26 B 1518: fol. 23V.
Even though Buridan concentrates on the object of demonstrative knowledge, there is no reason to doubt that he held a similar view about the object of assent in general and of belief in particular. With regard to both \textit{He believes that mules are barren} and \textit{He believes that some mules breathe fire} he would certainly insist that the belief is about mules. In the first case the believer apprehends mules through a complex thought that is true, while in the second case he apprehends mules through a belief that happens to be false. By contrast, both \textit{He believes that chimaera's exist} and \textit{He believes that chimaera's do not exist} are false if taken as stating that the subject in having one of those beliefs apprehends things, in however large a sense. They can be deemed to be true only if the object of belief is the true proposition \textit{Chimaera's do not exist} or the false proposition \textit{Chimaera's exist}.

In Buridan’s eyes, then, it is absurd to contend that someone who knows a proposition never has knowledge about the external things to which the terms of that proposition refer. In the context of the problems about appellation with which he is concerned in Ch. IV of his \textit{Sophismata} this means that \textit{Scio omne B esse A, ergo omne B scio esse A} is a valid inference\textsuperscript{27}. If I know that every B is A, under the unique conception belonging to the terms used, it must be true that of every B, however conceived of — that is, either in that unique way or in any other fitting way — I know that it is A. Buridan realizes that the inference admitted by him as sound goes from a composite sense to a divided sense and that such inferences are rightly considered to be invalid when modalities like necessity and possibility are concerned. Yet, that not all kinds of modality make that type of inference invalid is proved by the obviously correct instance \textit{Verum est omne B esse A, ergo omne B verum est esse A}. In the premiss it is stated that the proposition \textit{Omne B est A} is true\textsuperscript{28}. On the assumption that it is demonstrably true, B and A have natural supposition\textsuperscript{29}: they stand for every conceivable B and A, appelling the conception that properly belongs to the terms used in the proposition. But then it follows that of every B, however conceived of, it is true that it is A. Buridan concludes that evidently the inference with \textit{Scio} belongs to the same category of exceptions.

\textsuperscript{27} B 1977: 77.
\textsuperscript{28} B 1957: 202.
\textsuperscript{29} B 1957: 206.
3. The sophisms 10, 11, and 13

Against the background outlined above it is now rather easy to understand the way in which Buridan deals with some problem-sentences involving an intentional verb with a propositional complement. In the tenth sophism it is argued that from the premiss that you know everything that is two to be even in number and from the premiss that the pennies in my purse are actually two it follows that you know the pennies in my purse to be even in number (*Tu scis denarios in bursa mea esse pares*). On the other hand, in a situation where you wrongly believe that there is only one penny in my purse — and therefore not an even number of pennies — you do not know that they are even in number, because you do not know that whose opposite you believe. Buridan, of course, rejects the transition from *Tu scis omnia duo esse paria* to *Tu scis denarios in bursa mea esse pares*, on the ground that the conception under which you are said to have the knowledge indicated in the first premiss is altered in the conclusion (*Mutatur appellatio a parte post*). He concedes, though, that of the pennies in my purse, however conceived of — and thus also when conceived of generally as things that are two — you know that they are even in number (*Denarios in bursa mea scis esse pares*). Moreover, that latter proposition is perfectly compatible with the statement that the same pennies are apprehended by you through the false belief that they are not even in number; for the general conception under which you know that they are even is quite different from the specific conception under which you believe that they are not.

Illicit alteration of propositional conception could also be the ground for rejecting the statement that whoever believes his father to be an ass believes himself to be the son of an ass and, consequently, an ass. Buridan, however, lets it pass as the first premiss of an argument in which that statement, together with the further premiss that you believe your father (who is disguised as an ass) to be an ass, allegedly leads to the eleventh sophism: *Tu credis te esse asinum*. Instead, Buridan attacks the second premiss (*Tu credis patrem tuum esse asinum*), which is supposed to be proved by the following reasoning: *Tu credis hoc esse asinum* entails *Hoc tu credis esse asinum*; and the latter proposition, together with *Hoc est pater tuus*, yields the conclusion *Patrem tuum credis esse asinum*. But this conclusion differs in a crucial respect from the required premiss *Tu credis patrem tuum esse asinum*; the latter depends for its truth on the propositional conception *Pater meus est asinus*, whereas the former is merely based on the conception *Hoc*
<Appellatio rationis> in Buridan

est asinus. There is, then, no way of getting from Patrem tuum credis esse asinum to Credis patrem tuum esse asinum.

The thirteenth sophism is little more than a welcome occasion for Buridan to restate his doctrine that things are the ultimate objects of propositional knowledge. He defends the thesis that anyone knowing the conclusion that every triangle has three angles equal to two right angles, has that knowledge, precisely under the propositional conception of the conclusion, about every isosceles. For if he knows that every triangle possesses that property, it is about every thing that is a triangle, however conceived of, that he has the knowledge that it possesses that property. So, given that every isosceles is a triangle, it follows that of every isosceles he knows that it possesses that property (De omni isoscele ipse scit quod habet tres etc., which is tantamount to Omnem isoscelem scit habere tres etc.). Even in a situation where someone wrongly believes that a figure which actually is an isosceles is a circle, it remains true that he has some knowledge of that figure through the general import of the proposition Omnis triangulus habet tres etc., in spite of the fact that at the same time he mistakenly believes that the same figure is a circle through the very different proposition Haec figura est circulus. As Buridan frequently emphasizes, one and the same thing in the outside world may be made the object of countless different forms of apprehension: in this case, both of the true universal proposition that every triangle possesses a certain property and of the false singular proposition that this figure is a circle.

4. The sophisms 14 and 15

The fourteenth sophism, to the effect that Socrates the astronomer knows some stars to be above our hemisphere (Sortes astrologus scit aliqua astra esse supra emisperium nostrum), looks true until it is posited that he is in a dark dungeon, unaware of the time of the day. On that assumption, one might argue that, according to Buridan himself, it follows that about some stars, however conceived of, he has the knowledge that they are above our hemisphere. But that conclusion is false, since there is no particular star of which he could confidently assert that it is above our hemisphere; so, the antecedent is false too. Likewise, it might be argued that either about all stars he has that knowledge or about none, because there is no reason that he should have it about any one of them rather than about another. The first disjunct cannot be true, because then he would know something that is false,
which is impossible. Therefore, about no stars he has knowledge that they are above. But from this it follows that he does not know that some are above, unless it is granted that only propositions, not things, are the object of knowledge.

Buridan refutes this train of thought by denying that of each particular star it can be said that Socrates does not know that it is above our hemisphere. Although Socrates is unable to state of any particular star that it is above, under a designation and a conception that exactly single out that individual star, his indefinite conception that some stars are above is verified by those stars that actually happen to be above; hence it is about those stars that he does have knowledge under the conception that some stars are above. For example, it must be conceded that he is not in a position to know of the sun that it is above under the conception that the sun is above, but if the sun is above, it nonetheless makes his conception that some stars are above true and that fact entitles us to say that about the sun he has knowledge, albeit only under the indefinite conception expressed by some stars and not under any more specific conception. Similarly, if you know that one or the other part of a contradiction — for example, The king is seated and The king is not seated — is true, without knowing which part is true and which part is false, it still follows that about one or the other part, however conceived of, you have knowledge that it is true, even though that knowledge is restricted to an indefinite conception of the part which happens to be true and you are not able to specify that part by a more definite conception to the effect that, for instance, the affirmative proposition is true and thus verifies the indefinite proposition. It is worthy of note that Buridan here confines the things that are known through a conception that corresponds to such particular propositions as Aliqua astra sunt supra emisperium nostrum or Altera pars contradictionis est vera to those objects which actually satisfy the predicate. He explicitly denies that Socrates, in knowing that some stars are above, has that knowledge about all stars; and presumably he would also deny that in knowing one or the other part of a contradiction to be true it is about both parts that you have knowledge. In other words, he determines the set of things known by asking himself which singular propositions actually render the particular proposition true, thus emphasizing the aspect of verification.

As we shall see now, Buridan adopts a somewhat different viewpoint in connection with the fifteenth sophism: I owe you a horse (Debeo tibi equum). As owing is the outcome of an act of promising and accepting an obligation, the verb owe is to be regarded as an intentional verb involving a
certain conception of that which is promised and consequently owed to the promisee. In Debeo tibi equum, then, the word equum stands, in amplified supposition, for horses and appellates the conception according to which it has been imposed to signify precisely those beings. As the presence of this specific conception is one of the truth-conditions of the proposition, no alteration of its content is ever permitted. By contrast, in Equum tibi debeo, where the supposition of equum remains amplified in the same way, the conception of the things for which that term stands may be either its proper mental counterpart or any other conception of the same things. On Buridan’s view, therefore, the inference Debeo tibi equum, ergo equum tibi debeo is valid. Others, however, would argue that the consequent is false, mainly on the ground that there is no individual horse of which it can truly be said that I owe you that horse rather than any other horse; and that as a result the antecedent too would be false if Buridan’s inference were accepted.

In order to parry this reductio ad absurdum of the validity of his inference, Buridan undertakes to prove that, instead of his adversaries’ conclusion that there is no horse that I owe you, the consequent could be even stronger than Equum tibi debeo, namely, Omnem equum tibi debeo. To begin with, he assumes that in Equum tibi debeo the term equum has determinate supposition, that it does not appellate precisely the conception that properly belongs to it, and that there are only three horses, B, M, and F. On these assumptions, it follows that if Equum tibi debeo is true, the disjunctive proposition M tibi debeo vel F tibi debeo vel B tibi debeo must be true. If that disjunctive proposition is to be true, at least one of its disjuncts — for instance M tibi debeo, presumably in a sense which involves the thought that by giving M to you I acquit my debt — must be true. But since there is no reason that any one of them should be true rather than another, it may be concluded that if some disjunct is true, any disjunct may be the true one (si aliqua istarum est vera, quaelibet est vera), and if some disjunct is false, any disjunct may be the false one. Under this aspect the principle qua ratione de aliquo eadem ratione de omni becomes applicable and Equum debeo leads to Omnem equum debeo and Equum non debeo to Nullum equum debeo. As Equum debeo and Equum non debeo are subcontraries, one of them must be true. The same applies to what follows from them, so that there are two possibilities: either Omnem equum tibi debeo is true or Nullum equum tibi debeo, which in this case is tantamount to Nihil tibi debeo, is true. Still assuming that Debeo tibi equum is true, Buridan opts for the first alternative,
particular proposition are all stars indifferently, that is to say, all potential verifiers of that proposition. Hence, Pardus considers the inference from \textit{Sortes scit aliqua astra esse supra} to \textit{Omne astrum Sortes scit esse supra}, in the sense indicated, as perfectly valid. In the same vein, he argues that someone who knows that one or the other of the two contradictory propositions \textit{The king is seated} and \textit{The king is not seated} is true, has that knowledge about both propositions (\textit{utrumque contradictorium illo iudicio scit esse verum}). Inasmuch as that knowledge is expressed in the form of a particular proposition, the representation involved in it is not of one part of the contradiction rather than of the other (\textit{non magis est repraesentativum huius contradictorii '<Rex sedet>' quam illius '<Rex non sedet>'}). If only the part that is actually true were represented, we would be faced with the awkward consequence that the particular proposition concerned might successively have different representations or meanings, according as, for instance, \textit{The king is seated} would first be true and afterwards false and \textit{The king is not seated} would first be false and afterwards true.

Plainly, this view of the objects of the representation involved in assenting to a particular proposition is connected with the general doctrine that there is a sense in which the total or adequate signitate of a proposition consists of all intelligible things that are signified by that proposition and its parts, that is, of all things that are signified \textit{repraesentative}\textsuperscript{35}. That Buridan was aware of that kind of signification is evident from his observation that the inference from \textit{Cognoscit triangulum} to \textit{Omnem triangulum cognoscit} is valid\textsuperscript{36} and especially from the way he handles the fifteenth sophism. But apparently he saw no reason to bring it up in connection with the fourteenth sophism.

\textsuperscript{35} Andreas de Novo Castro 1514: fol. 3Rb, 10R, 35Vb; Pardus 1505: fol. 3Va. See also Nuchelmans 1980: 46.
\textsuperscript{36} B 1957: 334.
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SOME REMARKS ON THE ROLE OF MENTAL SENTENCES IN MEDIEVAL SEMANTICS

ABSTRACT: After introducing the notion of mental language as it was developed especially by William of Ockham this article focuses on the role of mental sentences in the logical interpretation of belief-ascriptions. First, the divergent positions advocated by Frege and Searle are outlined. Next, it is asked how the fourteenth-century Parisian logician Jean Buridan might have handled such statements as 'The sheriff believes that Mr. Howard is an honest man'. It is concluded that in spite of many superficial differences, at bottom Buridan's view is rather similar to Searle's account. In particular, both authors hold that in reported speech the words 'Mr. Howard is an honest man' keep their usual meaning as far as reference and predication are concerned.

RÉSUMÉ: Après avoir présenté la notion de langage mental comme elle a été élaborée notamment par Guillaume d'Ockham, cette communication se concentre sur le rôle des propositions mentales dans l'interprétation logique d'attributions de croyance. D'abord, les positions divergentes soutenues par Frege et Searle sont esquissées. Ensuite la question est posée comment le logicien Parisien Jean Buridan (XIVe siècle) traiterait les énoncés du type 'Le shérif croit que M. Howard est un homme honnête'. Il est conclu que malgré maintes différences superficielles au fond la théorie de Buridan a une ressemblance remarquable avec l'analyse proposée par Searle. En particulier, les deux auteurs sont d'avis que dans le discours indirect les mots 'M. Howard est un homme honnête' gardent leur signification ordinaire quant à la référence et la prédication.

1. As it is especially due to William of Ockham, writing in the third decade of the fourteenth century, that the notion of mental sentence (propositio mentalis) became a generally accepted part of logical doctrine, a preliminary discussion of the conception of thought as an
inner language may be concentrated on that influential author. In the first chapter of the first part of his *Summa logicae* he mentions three sources for the view that terms and the sentences that are composed by means of them are of three sorts: written, spoken, and conceived. Ultimately, this division goes back to Aristotle, *De interpretatione*, 1, 16 a 3 ff., where it is said that spoken sounds are symbols of affections in the soul and that written marks are symbols of spoken sounds; whereas written marks and spoken sounds are not the same for all men, the affections of the soul are the same for all, just as the things of which they are likenesses. In the first quarter of the sixth century this passage had been commented upon by Boethius, who declares that speech is threefold, in letters, in spoken sounds, and in intellectual concepts (*triplex est oratio, quae in litteris, quae in voce, quae in intellectibus est*). This Boethian distinction of three species of language gradually coalesced with a similar division that had been made by St Augustine. According to this thinker, there is a knowledge of things that we generate by a kind of inner speech and retain in our mind as an inner word. This inner word which we say in our heart is soundless and does not belong to Greek or Latin or any other particular language. It is contrasted with the written and spoken elements of the conventional idioms and also with the mental images of such words. Of the four varieties of language which these divisions cover — written and spoken words and the mental images of these conventional signs, and mental words or concepts — it is especially the distinction between the vocal and mental types that is relevant here.

Besides the different ways in which these two languages are realized there is also the problem of their correspondence, treated by Ockham in the third chapter of the first part of his *Summa logicae*. The manner in which he discloses a lack of one-to-one correspondence is apt to throw some light on the general function of the mental language which he posits and on the criteria by which he chooses its elements and

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4. See also his *Quodlibeta septem*, ed. C.J. Wey, *Opera theologica*, IX, St Bonaventure: The Franciscan Institute, 1980, V, q. 8, pp. 508-513.
categories. That there is a difference of computation, of the way in which units of each language are counted, Ockham makes plausible by invoking a principle of necessity of signification and expression (\textit{necessitas significationis, expressionis}) and a variant of his razor. On the one hand, diversity and plurality that are found at the level of spoken language should not be admitted into the mental counterpart if they do not make a difference with respect to truth and falsity and so to logical consequence. On the other hand, it also happens that a spoken language shows a deceptive sameness where the special point of view of logic requires a differentiation in the mental language. In other words, entities should not be multiplied without the kind of necessity imposed by considerations of truth value and logic, but they ought to be sufficiently multiplied if such necessity demands it.

The most conspicuous examples of an unnecessary plurality in spoken languages are synonyms. Since everything that is signified by several synonymous expressions can be conveyed by one of them, there is no need to assume more than one corresponding concept in the mind; the vocal diversity serves only stylistic purposes (\textit{propter ornatum sermonis}). Similarly, of the traditional parts of speech participles and pronouns are superfluous inasmuch as their work can be done by verbs and nouns, without any change of truth value. Further, of the various forms that a noun can take those which determine differences in case and number have their parallels in the mental sphere because these differences are relevant to the question whether the sentences in which they occur are true or false. By contrast, gender has no correlate in the mental sentence; with regard to signification and verification it is indifferent whether, for example, the masculine word \textit{lapis} or the feminine word \textit{petra} is used to refer to a stone. Neither does it matter whether as to form (\textit{figura}) a word is simple or compound. According to the same criteria the mood, number, tense, voice, and person of verbs are common to spoken language and mental language, whereas the different conjugations and the \textit{figura} are peculiar to spoken language. So far, Ockham’s razor brings about a restriction of the inventory of mental language. But there are also cases in which the logical point of view requires a correction of the tendency to form plurifunctional expressions which is typical of conventional languages. In \textit{Summa logicae}, I, 13, Ockham calls attention to equivocal words: although they are one combination of sounds, they signify in subordination to a set of different concepts. A favourite example of such ambiguity was the Latin word \textit{canis}, which can stand for the ordinary dog, the marine
animal, and the star, and therefore is subordinate to three different concepts. Obviously, there is no place for ambiguity in the mind; there everything has to be explicit.

The foregoing sketch may suffice to make it plausible that one of the main reasons why logicians such as Ockham introduced the notion of a mental language was the endeavour to develop a logically ideal language in which precisely that which is essential to questions of utterer's meaning, truth and falsity and logical consequence is contained, no more and no less. One might also say that this canonical language of thought was intended to provide a deep structure that was needed for a satisfactory analysis of the surface phenomena of the various vocal languages. Among the problems to which a solution was sought by invoking such a mental language was the question of how to account for the difference between what later came to be known as extensional and intensional contexts. In what follows I shall concentrate on one particular aspect of that issue and briefly discuss the way in which it was handled by the fourteenth-century Parisian logician Jean Buridan, who in all essential points adhered to the same view on the nature and function of mental language as Ockham held. In order to appreciate his view it will be useful to start with a glance at the manner in which two modern authors have elucidated sentences in which a belief is ascribed to some person.

2. In Chapter 7 of his book *Intentionality*, John Searle poses the question of what exactly is the status of the words following 'that' in the report

1. The sheriff believes that Mr. Howard is an honest man


and how they compare with the status of the words in the statement
(made by the sheriff or someone else)

2. Mr. Howard is an honest man.

Searle rejects Frege’s interpretation of belief-ascriptations, summarizing it
as follows. Frege supposed that if the propositional content assented to
by the sheriff is in some sense talked about by a reporter, then what
occurs in the reporter’s utterance after the word ‘that’ must be the name
of the proposition or thought concerned and not an expression of the
proposition itself. Whereas in 2 the reference (Bedeutung) is a truth
value and the sense (Sinn) the thought or proposition (Gedanke)
expressed, in the indirect discourse of 1 the embedded clause refers to
(bedeutet), and is the proper name of, the thought or proposition
expressed in 2. When this view is combined with the conception of a
proper name as a monolithic whole, without any meaningful
components or internal structure, it follows that as an embedded part the
expression ‘Mr. Howard is an honest man’ does not at all have the same
meaning as that combination of sounds has when it occurs in a non-
dependent position. On Frege’s interpretation the reference to a certain
individual in the outside world and the attribution of a certain predicate
to that individual which are characteristic of the sentence ‘Mr. Howard
is an honest man’ when it is used by itself, are no longer present when
the same words are added to such a phrase as ‘The sheriff believes that’.

In Searle’s eyes, however, that interpretation is irreconcilable
with the intuition that the relevant aspects of the meaning of the
expression ‘Mr. Howard is an honest man’ do not change when those
words are made part of indirect discourse. For him the problem consists
precisely in finding a satisfactory account of the fact that in spite of the
undeniable identity of meaning there are striking differences between the
logical properties of the words following ‘that’ in 1 and those of the
same words in 2. From the statement made in 2 it may be inferred that
in the outside world there exists some person to whom the predicate
‘being an honest man’ is applicable. Moreover, the truth value of that
statement is preserved when the referring expression ‘Mr. Howard’ is
replaced with one that designates the same individual. Also, it is clear
that someone who seriously utters the words ‘Mr. Howard is an honest
man’ thereby performs an act of asserting and thus may be held
responsible for the claim of truth that he puts forward. By contrast, the
words after ‘that’ in 1 do not admit of existential generalization; Mr.
Howard may exist only in the sheriff's imagination. Neither is substitution of other expressions referring to the same individual allowed; for under a different name or conception the sheriff may no longer believe that the individual in question is an honest man. Finally, it is evident that the reporter of the sheriff's belief cannot be held responsible for what someone else considers to be true. Taking 2 as a specimen of belief, we might also say that the believer is committed to the truth of his belief and to the possibility of existential generalization, but free to replace the subject-term with any coreferential expression. On the other hand, the reporter of that belief is committed neither to the truth of the reported belief nor to any existential generalization, but bound to express faithfully the representative content in the form in which the believer has it in mind. This difference in commitments between a believer and a reporter of a belief is explained by Searle along roughly the following lines.

Such a belief as is expressed by sentence 2 consists of a psychological state in which the believer actually is, in actu exercito so to speak, and a representative content that specifies both a definite reference and a predication. Now what is the reporter of such a belief normally expected to do? First of all, he must correctly describe the psychological state in which the believer actually is. To use medieval terminology, the believer's belief in actu exercito has to be turned into belief in actu significato, that is, into belief as someone else may characterize it by an appropriate verbal phrase, without necessarily sharing that psychological state himself. In the second place, the reporter must express faithfully the representative content which the believer believingly has in mind, by conveying through the embedded clause the same propositional content as the believer himself would convey were he to give expression to his inner thought. The important point is that the reporter does not refer to the representative content of the belief by means of a monolithic proper name in which not a trace of the original reference and predication is left, but that he either repeats the believer's expression of the representative content if there is such an expression, or expresses a propositional content that is identical to the specification that the believer has in mind. This view implies that the

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7. In this connection it is worthy of note that other modern authors introduce a special notion of interpretation: as a semantic relation between two or more representations, either linguistic or mental. In that sense a set of translating sentences, for instance, must be somehow faithful to the set of translated sentences, in that they must express
words 'Mr. Howard is an honest man' have the same meaning in 1 and 2 and readily accounts for the fact that in general substitution of co-extensional expressions is prohibited. At the same time, the status of the reporter as a mere recorder of what someone else believes makes it understandable that in his mouth the expression of the representative content has no assertive force and that he is not committed to any existential generalization either.

3. After this outline of the opposite views defended by Frege and Searle it is interesting to see how a fourteenth-century logician already advocated an interpretation of belief-ascriptions that in spite of many superficial differences is at bottom strikingly similar to Searle's approach. Although Jean Buridan usually focuses on cases of knowledge rather than on cases of belief, his writings offer enough evidence from which to draw conclusions concerning the way he would handle such belief-ascriptions as are exemplified by 1.

Let us look first at the kind of belief that may be expressed by the sentence 'Mr. Howard is an honest man'. In connection with Aristotle, *Posterior Analytics*, I, 33, 88 b 30 ff., Buridan notes that knowledge (*scientia*) and belief (*opinio*) have in common that neither is a *propositio* or declarative sentence. Rather, they are acts of assenting (*assensus*) to a *propositio*. Just as Searle distinguishes between a psychological state and a representative content consisting of a reference and a predication, so Buridan draws a distinction between the variety of assent that is an act or attitude of believing and the mental sentence, consisting of a definite subject and predicate, at which the belief is directed. Now the fact that someone actually is in a state of belief with respect to the representative content or mental sentence to the effect that Mr. Howard is an honest man implies of course that he considers that sentence to be true and is therefore accountable for what he thinks. For Buridan this commitment to the truth of what one believes includes the requirement

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that the terms of the object of belief stand for existing things. Buridan adheres to the widely accepted medieval doctrine that in an affirmative sentence the emptiness of the subject-term is a sufficient condition of its falsity. In other words, the inference from 'Mr. Howard is an honest man' to 'Mr. Howard exists' is valid, and so the legitimacy of existential generalization is guaranteed. Further, according to Buridan the terms in a straightforward belief about a situation in the outside world have personal supposition, in the sense that the things for which they stand may be denoted by any other co-extensional term, without change of truth value.

Next, it may be asked how Buridan would deal with such reports as 'The sheriff believes that Mr. Howard is an honest man' and, in particular, whether he would side with Frege or with Searle. First, there is a passage in the Sophismata which makes it quite clear that Buridan would hold that the reporter is not committed to the truth of that which the sheriff believes, namely, that Mr. Howard is an honest man. That a part of a propositio is not itself a propositio Buridan proves with the help of the Biblical example Dixit insipiens in corde suo 'Non est deus'. Given that the psalmist, guided by the inspiration of the Holy Spirit, never says anything false and that the words 'There is no God' were commonly regarded as conveying a falsehood, the conclusion must be that the reporter of the fool's belief cannot be considered as claiming the truth of the content of that belief. Even if what the fool believes happens to be false, the report to the effect that he believes precisely that falsehood may be correct, provided that the description of the believer's psychological state and the specification of the representative content are accurate. This limited liability on the side of the reporter also accounts for his not being answerable for the falsity of an existential generalization in the event that such a term as 'Mr. Howard' proves to be empty. Although this is fatal to the truth of what the believer has in mind, it does not affect the truth of the report as a whole. In sum, when the words 'Mr. Howard is an honest man' come

9. This pattern of inference was usually referred to as the consequentia ab 'est' tertio adiacente ad 'est' secundum adiacens.
Mental sentences in medieval semantics

...to be embedded in a dependent position after such a phrase as 'The sheriff believes that', they lose the assertive force which they normally have as an independent utterance, in the same way as the immediate constituents of a disjunction and a conditional lack the assertive force which they would have when occurring on their own.

Let us now turn to the question that is most pertinent to the issue between Frege and Searle: what is the status of the words after 'that' in 1, as compared to the status of the same words in 2? In order to elicit an answer to that question from Buridan we have to heed first what he has to say about instances involving knowledge. In cases of knowledge that something is the case (scire), about which Buridan is most explicit, there can be no doubt that as a rule he assigns personal supposition to the terms of the embedded clause, which in Latin will be an accusative and infinitive phrase or the equivalent quod-clause. In the contemporaneous debate about the object of assent and knowledge he rejected the view that the object of such attitudes is exclusively the mental sentence at which they are directed. According to him, there are two kinds of object of demonstrative science: the mental sentence that is the conclusion of the demonstration, and the things in the outside world for which the terms of that sentence supposit. For example, if we reach the conclusion 'Every man is capable of laughing', the primary object of the act of assenting is that mental sentence; but at the same time we have knowledge about every man and about every being that is capable of laughing.  

Further, Buridan distinguishes a peculiar kind of personal supposition of general terms: a variety that is called natural supposition. A term has natural supposition when it stands for all possible things falling under it, whether present, past or future. Amongst other environments this species of personal supposition is found in the demonstrative sciences. When, for instance, a geometer proves that the sum of the three angles of a triangle is equal to two right

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angles, he has knowledge not only of presently existing triangles, but also of all triangles in past and future times. Although this natural supposition has several peculiar features of its own, it is certain both that it is included in the genus personal supposition and that it occurs typically in constructions that are dependent on such intentional verbs as *scire* and *opinari*\(^{12}\). This point is confirmed by some observations Buridan makes about the exceptional cases where somebody is said to know that something is so while one or more of the terms stand for nothing. The assertion that someone knows that a chimera is a non-entity cannot be true if the accusative and infinitive phrase concerned (*chimaeram non esse*) is taken significatively or according to personal supposition; for there are no chimera's and no non-entities. For the assertion to be true it is necessary to assume that in such exceptional circumstances the accusative and infinitive phrase has material supposition and refers only to the mental sentence to the effect that chimera's are non-entities\(^{13}\). From the fact that such cases are regarded as exceptional it may be concluded that normally in ascriptions of knowledge the terms of the dependent clause do have personal supposition.

Of course, it cannot be denied that there are important differences between ascriptions of knowledge and ascriptions of belief. For one thing, a person can be said to have knowledge only if what he assents to is true; whereas an ascription of belief may be true even though the content of belief is false. But the fact that such verbs as *credere*, *opinari*, *putare* are often mentioned by Buridan in one breath with the verb *scire* shows that in his opinion they also share certain features. One of those features is no doubt the personal supposition of the terms occurring in the clause that contains the specification of the content of the ascribed intentional state. Another common feature, explicitly mentioned by Buridan, is the peculiarity that such intentional verbs as *scire* and *opinari* restrict the supposition of the terms that follow them in a subordinate clause in such a way that they do not stand for their

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13. See *In Metaphysicen Aristotelis quaestiones argutissimae Magistri Ioannis Buridani*, Parisiiis, 1518 (reprinted Frankfurt: Minerva, 1964), IV, q. 14, fol. 23. It should be noted that Buridan uses the phrase *suppositio materialis* both for cases in which a linguistic expression refers to itself and for cases in which it refers to the corresponding concept in the mind. See *Tractatus de suppositionibus*, ed. Maria Elena Reina, pp. 201-202.
significates absolutely but only in so far as they simultaneously call up the concepts according to which those terms signify their significates. As far as supposition is concerned, the terms in the specification of the content of knowledge and belief normally have personal supposition; and that is the only supposition they have. In particular, they do not materially supposit for the concepts according to which they signify things in the world. For the special manner in which they signify those concepts Buridan uses the phrase *appellatio rationis*. The notion of *appellare* is contrasted with *supponere* and characterized as follows: any term suppositing for something and signifying something else for which it does not supposit, appellates everything that it signifies other than what it supposit for as being related to what it supposits for.

Buridan, then, assumes that in such belief-ascriptions as 'The sheriff believes that Mr. Howard is an honest man' the words after 'that' have the same meaning, in respect of reference and predication, as they have when occurring independently; in both cases the terms have personal supposition. Further, the reporter has to describe correctly the psychological state in which the believer actually is. But also and with equal stringency he is expected to express faithfully the representative content, the *ratio* or *conceptus*, which the believer has in mind. This requirement that the mode of conceiving of the believer be preserved by the reporter has a certain similarity to the conditions that are imposed on the correctness of quotations. Buridan points out that in this respect *appellatio rationis* resembles material supposition; but he hastens to add that it is a case of mere analogy and that in other respects *appellatio*

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rationis is quite different from material supposition. As we have seen, only in instances of the type 'He believes that a chimera is a non-entity', in which the terms 'chimera' and 'non-entity' stand for nothing in the world, does Buridan invoke material supposition, holding that the terms in question refer to concepts in the believer's mind. If we compare — mutatis mutandis of course — Frege's view that in indirect discourse the words 'Mr. Howard is an honest man' refer only to the thought expressed in direct discourse, to Buridan's notion of material supposition, it might be said that what Buridan considers as an extremely marginal case, Frege regards as the rule. Buridan's general doctrine, on the other hand, has much in common with Searle's position: for him, in 'The sheriff believes that Mr. Howard is an honest man' the same personal supposition as is found in 'Mr. Howard is an honest man' guarantees the connection with things in the world, while the appellatio rationis takes care of the fact that one of the truth conditions of the belief-ascription is the preservation of the representative content of the sheriff's belief.

4. The views advocated by Buridan and Searle may be characterized as middle positions. What they have in common is the assignment of a dual role to the clause after 'that' in a belief-ascription: it has the same reference and predication as the mental counterparts that figure in the original belief, and at the same time it preserves the representative content that is in the believer's mind. They are middle positions in the sense that they differ on the one side from accounts that try to eliminate mental ingredients altogether and on the other side from Frege's account, which considers the part after 'that' as no more than a reference to a thought. The thought or Gedanke which Frege so exclusively emphasizes has a function that is comparable to the function of what Searle calls a representative content and Buridan understands by that which is conceived of in framing a mental sentence. But whereas

16. See Tractatus de suppositionibus, ed. Maria Elena Reina, p. 335: ...isti accusativi quodammodo videntur participare suppositionem materialem, quia appellant conceptus suos, licet non supponant pro eis....

17. It should be borne in mind, though, that medieval philosophers usually followed Aristotle in claiming that simple and complex concepts are natural signs and the same for all men. What is conceived of, as opposed to the individual acts of conceiving, is far from being subjective.
Frege fails to do justice to the intuition that such a sentence as 'Mr. Howard is an honest man' preserves its ties with the extramental world when it comes to be governed by an intentional verb, the accounts advocated by Buridan and Searle have the advantage of showing due appreciation of that identity of meaning.
Real and formal predication

Consider the following principles:
If two singular terms happen to be co-referential and one of them is substituted for the other in a true statement, the resulting statement will be true.
If two predicate-terms happen to be co-applicative and one of them is substituted for the other in a true statement, the resulting statement will be true.
If two sentences happen to be mutually implicative and one of them is substituted for the other in a true statement, the resulting statement will be true.

Contexts to which these principles apply may be called purely extensional contexts. As is well-known, however, there are also contexts in which application of these principles might lead to a change in truth-value. Notable instances are statements involving an ascription of a propositional attitude and modal statements. In those environments, therefore, substitution on the basis of mere co-reference, co-application, or mutual implication is blocked. This difference between purely extensional contexts and non-extensional or intensional contexts, which occasions such lively debates among modern logicians and philosophers of logic, was quite familiar to medieval schoolmen. Especially in the fourteenth century, most problems concerning the principle of substitutivity that are still being discussed today were treated in connection with so-called appellatio rationis, which was thought to constitute the difference between such sentences as Desiderat bibere potum venenosum and Potum venenosum bibere desiderat. In the first case the person in question wants to take poison precisely under that conception (ratio); in the second case he wants to have a drink which happens to be describable as, inter alia, poisonous, but he does not necessarily want it under that specific description.

In this paper I shall concentrate on a related issue which, though not attracting much attention nowadays, was of considerable importance to medieval nominales. The issue arose in connection with a certain theory about the significate of a proposition, that is, of a mental or verbal declarative sentence. In such statements as Haec propositio 'Socrates bibit vimun' significat Socratem bibere vinum, Socratem bibere vinum, credit Socratem bibere vinum, Socratem bibere
vinum verum est, the dictum or accusative-plus-in infinitive phrase Socratem bibere vinum ('that Socrates drinks wine') apparently expresses that which a proposition signifies, that which is the object of a propositional attitude, and that which is the bearer of a truth-value or a modality. But as to the further question about the exact ontological status of that which is expressed by the dictum, opinions were divided. In his Logica Magna Paul of Venice (c.1369-1429; all references are to the edition: Paulus Venetus, Logica Magna, secunda pars, Tractatus de veritate et falsitate propositionis et Tractatus de significato propositionis, edited with notes on the sources by Francesco del Punto, translated into English with explanatory notes by Marilyn McCord Adams, published for the British Academy by the Oxford University Press, 1978) mentions several of them and finally opts for the thesis that the adequate significate of any true and affirmative present-tense proposition that does not contain an ampliative verb or a term that is somehow distracting, coincides in the world with the adequate significate of the subject-term or, sometimes, of the predicate-term. In other words, the adequate significate of the proposition Socrates bibit vinum, namely Socratem bibere vinum, is, if we look at the world, nothing but Socrates in so far as he is in a certain state and thus renders the proposition true by satisfying the condition that is specified in its predicate. This coincidence of the adequate significate of the proposition with the adequate significate of the subject-term is explicitly restricted to the kind of proposition that is characterized in the thesis. In particular, there is no such coincidence if the proposition is negative or if the subject-term fails to refer to an actual existent. Moreover, Paul is careful to point out that notwithstanding the fact that in the outside world the adequate significate of a certain type of proposition coincides with the adequate significate of the subject-term, yet there are good reasons to distinguish the two when we consider them as forms of thinking and speaking about the world. If such an accusative-plus-in infinitive phrase as Socratem bibere vinum is taken according to real or identical supposition (suppositio realis vel identica), it stands for Socrates in so far as he is in a certain state in the outside world. From that point of view, the circumstance that he drinks wine coincides in the world with Socrates, or is inreality identical with Socrates, and with every similar state of affairs in which Socrates is the subject. This identity or coincidence in the outside world is expressed by such phrases as est identice, est idem re aliter cum. A sentence which is used to state an identity or coincidence in the world between the significate of a dictum taken according to real supposition and an individual, or between the significates of two dicta taken according to real supposition is said to contain an identical or real predication (praedicatio identica). If, on the other hand, an accusative-plus-in infinitive phrase represents the conceptual form or the modus significandi that is uniquely associated with a proposition, it is to be taken according to formal supposition (suppositio formalis). At this level, the verb est is qualified by the adverbs formaliter or adequate, indicating that it is a peculiar form of thinking and speaking about the world that is at issue, rather than the world itself. A sentence which is used at this second-order level in order to state something about modes of conceiving contains a formal predication (praedicatio formalis). One of the means by which medieval logicians marked the difference between cases where attention is focused primarily on things in the world, however conceived of and denoted, and cases where the mode of conceiving a thing or the thing precisely as it is conceived of is decisive, is word-order. In the sentence Bonitatem 'sapientia' significat the word-order indicates that 'wisdom' signifies a property that may just as well be denoted by the name...
'goodness', because in God at least the two names apply to the same thing. But the sentence 'Sapientia' significat bonitatem is false, since the proper concept that gives the word sapientia its adequate or formal meaning is not the concept of goodness, but the concept of wisdom; the true statement would be 'Sapientia' significat sapientiam. One of the consequences is that for this kind of statement simple conversion always causes a change in meaning and thus, possibly, in truth-value. Paul of Venice offers the following examples.

(1) (p.190, 1-8): Ratio formalis B est A; igitur A est ratio formalis B. 
(À = bonitas in deo; B = sapientia in deo).

In the premiss the word-order signals real or identical predication, so that ratio formalis B has to be taken according to real or identical supposition and est indicates coincidence in the outside world. In the conclusion, however, the word-order signals formal predication, so that there ratio formalis B has to be taken according to formal supposition and est indicates sameness at the conceptual level. The change in supposition (mutatio suppositionis) makes the argument invalid, as is brought out more clearly in the paraphrase (RP = real predication; FP = formal predication; R = real supposition; F = formal supposition):

RP:(The adequate significate of 'wisdom') coincides in the world with (goodness). Therefore, FP:(goodness) is qua conceptual form (the adequate significate of 'wisdom').

According to Paul, a correct conclusion would be: igitur A est aliquid quod est ratio formalis B, which may be paraphrased as:

Therefore, RP:(goodness) coincides in the world with (something) / FP:(that) is qua conceptual form (the adequate significate of 'wisdom').

(2) (p.188, 32 - p.190, 13): Significatum adaequatum B est hominem esse; igitur hominem esse est adaequatum significatum B (B = Risible est).

This invalid argument may be rendered as:

RP:(The adequate significate of 'A risible exists') coincides in the world with (that a man exists).

Therefore, FP:(that a man exists) is qua conceptual form (the adequate significate of 'A risible exists').

A correct conclusion would be: igitur hominem esse est aliquid aliter esse qualiter esse adaequatur B, which may be paraphrased as:

Therefore, RP:(that a man exists) coincides in the world with (some state of affairs) / FP:(which) is qua conceptual form (the adequate significate of 'A risible exists').

By using such phrases as aliquid quod and aliquid aliter esse qualiter esse Paul clearly intends to divide the correct conclusions into a main part
and a secondary part in which the two kinds of predication and supposition are carefully kept separate. Since the main part preserves the same type of predication and supposition as is found in the original premiss, there is no longer an illicit transition from real predication to formal predication.

Semantic contexts

In dealing with a number of objections against his main thesis concerning the significate of a proposition, Paul draws attention to three kinds of context in which substitution on the basis of mere coincidence in the outside world leads to difficulties. Let us begin with some examples of substitution in a context that is of a semantic nature. The first two examples illustrate cases in which the coincident items belong to the same category: either both are incomplexa or both are complexa.

(3) (p.186, 35 - p.188, 12): A est B, et A est formalitas A. et D eat formalitas B; igitur formalitas A est formalitas B vel e converso.

Paraphrase:
RP: (Goodness) coincides in the world (in God) with (wisdom).
FP: (Goodness) is qua conceptual form (the adequate significate of 'goodness').
FP: (Wisdom) is qua conceptual form (the adequate significate of 'wisdom').

Therefore, FP: (the adequate significate of 'goodness') is qua conceptual form identical with (the adequate significate of 'wisdom'), or vice versa.

In this argument it is apparently assumed that in the second premiss wisdom may be substituted for goodness, on the strength of the first premiss, and that then a principle becomes applicable which is a special case of a syllogism in the third figure and according to which two items that are identical with a third item, are identical with one another. It is obvious, however, that precisely such a substitution is responsible for the fact that a false conclusion is drawn from true premisses. Faced with the invalidity of the argument, one might try to change the first premiss into A est alter B, that is,
FP: (Goodness) is qua conceptual form identical with (wisdom).

But that statement is false. The only way out is to adapt the conclusion to the strength of the original premiss, as follows: igitur formalitas A est aliquid quod est formalitas B, that is,

Therefore, RP: (the adequate significate of 'goodness') coincides in the world with (something) / FP: (that) is qua conceptual form (the adequate significate of 'wisdom').

(4) (p.186, 21 - p.188, 20): Hominem esse est risibile esse, et hominem esse est significatum adaequatum A ( = Homo est), et risibile esse est significatum adaequatum B ( = Risibile est); igitur significatum adaequatum A est significatum adaequatum B.

Paraphrase:
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RP: (That a man exists)\textsuperscript{R} coincides in the world with (that a risible exists)\textsuperscript{R}.
FP: (That a man exists)\textsuperscript{F} is qua conceptual form (the adequate significate of 'A man exists')\textsuperscript{F}.
FP: (That a risible exists)\textsuperscript{F} is qua conceptual form (the adequate significate of 'A risible exists')\textsuperscript{F}.

Therefore, FP: (the adequate significate of 'A man exists')\textsuperscript{F} is qua conceptual form identical with (the adequate significate of 'A risible exists')\textsuperscript{F}.

Again, the substitution that is taken for granted in this argument is responsible for the fact that an evidently false conclusion is drawn from true premises. Taking the first premiss in the stronger sense of lemmo esse est formaliter risibil esse, that is,
FP: (That a man exists)\textsuperscript{F} is qua conceptual form identical with (that a risible exists)\textsuperscript{F} is of no avail, since that statement is clearly false. The correct conclusion to be drawn from the premises as they stand is, according to Paul: aliqualiter esse qualiter esse est significatum adaequatum A est aliqualiter esse qualiter esse est significatum adaequatum B, that is,

Therefore, RP: (some state of affairs)\textsuperscript{R} / FP: (which)\textsuperscript{F} is qua conceptual form (the adequate significate of 'A man exists')\textsuperscript{F} / coincides in the world with (some state of affairs)\textsuperscript{R} / FP: (which)\textsuperscript{F} is qua conceptual form (the adequate significate of 'A risible exists')\textsuperscript{F}.

The next example contains coincident items that belong to different categories.

(5) (p.162, 23 - p.164, 8): Ratio complexi est deus, et ratio incomplexi est idem deus; igitur ratio complexi est ratio in-complexi.

Paraphrase:
RP: (The adequate significate of the complex expression 'God exists')\textsuperscript{R} coincides in the world with (God)\textsuperscript{R}.
RP: (The adequate significate of the incomplex expression 'God')\textsuperscript{R} coincides in the world with (God)\textsuperscript{R}.

Therefore, FP: (the adequate significate of the complex expression)\textsuperscript{F} is qua conceptual form identical with (the adequate significate of the incomplex expression)\textsuperscript{F}.

The premises are true, but the conclusion is false. Two premisses that would entail the above conclusion are the formal predications Ratio incomplexi est formaliter deus et ratio complexi est formaliter deus, that is, 
FP: (The adequate significate of the incomplex expression 'God')\textsuperscript{F} is qua conceptual form identical with (God)\textsuperscript{F}. 

FP: (The adequate significate of the complex expression 'God exists')^F is qua conceptual form identical with (God)^F.

The second premiss, however, is false. For at the conceptual level the adequate significate of a proposition is quite different from the adequate significate of a noun. A proposition signifies by means of a complexio or predication, whereas a noun signifies without any such complexio. Moreover, a proposition signifies quiescently (quiescenter), that is, in such a manner that the corresponding thought is complete and the mind comes to rest, while the adequate significate of a noun is an incomplete thought. Taken as conceptual forms, therefore, a proposition and its subject are not interchangeable (p.156, 19 - p.160, 14; p.180, 20-27). Although it is correct to say, with real predication and supposition, that the significate of a proposition coincides in the world with a thing, the formal predication that a thing qua conceptual form is the adequate significate of a proposition is false: nulla res est adaequadum significatim propositionis, licet significatum propositionis est aliquid res (p.190, 15-17). As a conceptual form, the adequate significate of a proposition is a state of affairs (aliquid), not a thing (aliquid).

The only solution, then, consists in adapting the conclusion to the real predication of the original premisses, as follows: igitur ratio complexi est illud quod est ratio incomplexi, that is, Therefore, RP: (the adequate significate of the complex expression)^R coincides in the world with (that)^R / FP: (which)^F is qua conceptual form (the adequate significate of the incomplex expression)^F.

Intentional contexts

A second type of context in which substitution based on mere coincidence in the world gives rise to faulty reasonings is formed by sentences that are dominated by intentional verbs or verbs for propositional attitudes. Let us begin with an objection that was adduced against Paul's main thesis (p.184, 6-25; p.190, 18-29). If the adequate significate of a proposition is a thing, it follows that the adequate object of knowledge is also a thing outside the mind. And if a thing outside the mind is the adequate object of knowledge, by the same reasoning a thing outside the mind is the object of opinion and faith. Now let it be assumed that the same person knows that God exists, opines that God alone and immediately moves the sky, and believes that God is a trinity of persons. That God exists, that God alone and immediately moves the sky, and that God is a trinity of persons coincide in the world with God. Therefore, the same person knows, opines, and believes the same thing.

In his reply to this objection, Paul distinguishes three ways of interpreting the conclusion. First of all, it is true that such a person knows something, opines something, and believes something about the same object, namely, God. But that thing is not the adequate object of his knowledge, opinion, and faith, since the adequate object of such attitudes is never a thing, but always a state of affairs (aliquid). Further, it is also true that if the state of affairs which he knows is taken according to real supposition, it coincides in the world with the states of affairs that are the adequate objects of his opinion and his faith. But even though these states of affairs, taken according to real supposition, coincide in the world, it is nonetheless wrong to conclude that they are one and the same conceptual form. If the conclusion is read as:
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Therefore, $FP: (\text{that which he knows})^F$ is qua conceptual form identical with $(\text{that which he opines})^F$ and with $(\text{that which he believes})^F$.

It is plainly false. In the first place, then, the object about which a propositional attitude is adopted should be carefully distinguished from the adequate object. The adequate object is the conceived state of affairs towards which a stance is taken. That the attitudes of knowledge, opinion, and faith require an adequate object of a propositional type is reflected by the linguistic fact that the verbs for such attitudes have an accusative-plus-infinitive phrase as complement. Further, the propositional concept or conceived state of affairs which is the adequate object of a propositional attitude may be taken either according to real supposition or according to formal supposition. Considered from the viewpoint of what corresponds to it in the world, it coincides with the object denoted by the subject-term and so with several other states of affairs. At the conceptual level, however, it is a unique mode of thinking which not only, as a complexe significabile, differs from the incomplexe significabile that is associated with the subject-term, but also from all states of affairs that are conceived of in some other way.

Let us look now at some examples of substitution in intentional contexts.

(b) (p.178, 8-14): Istam propositionem esse est scitum a te, sed istam esse est istam esse veram; igitur istam esse veram est scitum a te.

Paraphrase:

$FP: (\text{that this proposition exists})^F$ is known by you.

$FP: (\text{that this proposition exists})^R$ coincides in the world with $(\text{that this proposition is true})^R$.

Therefore, $FP: (\text{that this proposition is true})^F$ is known by you.

Intuitively, it is clear that the first premiss may be true while the conclusion is false. Hence, the argument is invalid. In answer to the question why it is invalid, it may be pointed out that the substitution on which the argument hinges amounts to a transition from real supposition to formal supposition and from real predication to formal predication. That the states of affairs which are said to be known in the first premiss and in the conclusion have to be taken according to formal supposition may be brought out in two slightly different ways. It was not uncommon to hold that such sentences as Tu scis istam propositionem esse are instances of appellatio rationis. The sentence means that you know that this proposition exists precisely by means of those concepts to which the spoken sentence Ista propositione est is subordinated. It would be better, therefore, to read the first premiss and the conclusion as:

$FP: (\text{that this proposition exists})^F$ is known by you precisely under that conception (ratio).

Therefore, $FP: (\text{that this proposition is true})^F$ is known by you precisely under that conception.

In other words, the truth-conditions of the first premiss differ from the truth-conditions of the conclusion in that the required conceptual forms of
the states of affairs known are different. This formal difference is, of course, quite compatible with the real coincidence stated in the second premiss. Paul would make the same point in terms of what was called the officiatio of such a proposition as Tu scis istam propositionem esse. In this particular case, the officiatio would yield two jointly sufficient truth-conditions:

(a) This sentence you know Ista proposition est
(b) of which you know that it primarily or adequately signifies that this proposition exists.

Similarly, for the conclusion officiatio would yield the truth-conditions:

(c) This sentence you know Ista proposition est vera
(d) of which you know that it primarily signifies that this proposition is true.

That (a) and (b) are different from (c) and (d) is obvious: the sentences and the conceptual forms uniquely attached to them differ in crucial respects.

A conclusion that can be validly drawn from the given premisses is: igitur aliqualiter esse est scitum a te qualiter esse

That (a) and (b) are different from (c) and (d) is obvious: the sentences and the conceptual forms uniquely attached to them differ in crucial respects.

Therefore, FP:(some state of affairs) \( ^F \) is known by you / RP:(which) \( ^R \) coincides in the world with (that this proposition is true) \( ^R \).

Paraphrase:

FP:(That a falsehood exists) \( ^F \) is known.
RP:(That a falsehood exists) \( ^R \) coincides in the world with (the falsehood in question) \( ^R \).

Therefore, FP:(a falsehood) \( ^F \) is known.

Paul denies that this argument is a valid syllogism in the third figure, on the ground that the first premiss is not of any quantity. More importantly, he points out that in the first premiss scitur is construed with a comple- xum , while in the conclusion it is construed with an incomplexum , and that in the first premiss it is used officiabiliter , whereas in the conclusion it is used descriptibiliter . Let us start with the first premiss. The operation of officiatio yields the following truth-conditions:

(a) This sentence Falsum est is known (by you).
(b) of which you know that it primarily signifies that a falsehood exists.

The first premiss, then, is a formal predication whose truth depends upon the occurrence of an act of assenting that is directed towards a specific concept of a propositional nature. In the conclusion, on the other hand, scitur is construed with an incomplex expression that is the name of a proposition. By saying that there it is used descriptibiliter Paul means that the truth-conditions of Falsum scitur are:

(c) You know that which is signified primarily by means of a false proposition.
(d) and of it you know that it is primarily signified by means of that false proposition.

When, for instance, it is not the case that the king is sitting, the sentence 'You know a falsehood' could mean that you know that the king is sitting and that of that state of affairs you know that it is primarily signified by
'The king is sitting'. Obviously, the first truth-condition cannot be fulfilled in the given case, so that the conclusion is false. But note that the first premise, 'You know that a falsehood exists', may still be true. In sum, if both the first premise and the conclusion are understood as formal predications, the difference in conceptual form between a complexum and an in-complexum and the concomitant difference in the import of scitur cause such a difference in truth-conditions that the first premise may be true while the conclusion is false. Moreover, it should be noted that in the premises falsum presumably stands for a propositional sign that is false, whereas in the conclusion it stands for the adequate significate of the propositional sign. The correct conclusion from the given premisses would be: igitur aliqualiter esse scitur qualiter esse est falsum, that is, 

Therefore, FP:(some state of affairs)\(^F\) is known / RP:(which)\(^R\) coincides in the world with (a false propositional sign)\(^R\).

Analogous considerations apply to the arguments: istam (propositionem 'Rex sedet') esse scis, et istam esse est ista; igitur istam scis and Tu scis omnia esse, sed omnia esse sunt omnia; igitur tu scis omnia (p.170, 33-34; p.172, 36 - p.174, 5).

Modal contexts

That substitution based on mere coincidence in the world is an illicit move in modal contexts may be shown by the following example:

(8) (p.172, 30-33; p.180, 10-12): Te esse vel te non esse est necessarium, sed quidquid et qualitercumque est te esse vel te non esse est te esse (quia te non esse non est aliquis nec aliqualiter); igitur te esse est necessarium.

Paraphrase:

FP:(That you exist or do not exist)\(^F\) is necessary.
RP:(That you exist or do not exist)\(^R\) coincides in the world with (that you exist)\(^R\), since that you do not exist is neither a thing nor a state of affairs in the world.

Therefore, FP:(that you exist)\(^F\) is necessary.

If it is assumed that both in the first premiss and in the conclusion the word necessarium has a purely adjectival and modal force, the truth-conditions of those statements can be made explicit by officiatio, as follows. For the first premiss:

(a) This sentence Tu es vel tu non es is necessary
(b) which signifies primarily that you exist or do not exist.

For the conclusion:

(c) This sentence Tu es is necessary
(d) which signifies primarily that you exist.

Since it is true that the sentence Tu es vel tu non es is necessary precisely in so far as it is subordinated to the conceptual form that you exist or do not exist, but false that the sentence Tu es is necessary precisely in so far as it is subordinated to the conceptual form that you exist, the argument is invalid. Although the state of affairs that you exist or do not exist and the state of affairs that you exist coincide in the world, the propositional forms
by which you are conceived of in each case are different and it is upon
these conceptual forms that the truth of an ascription of necessity depends:
a state of affairs that is necessary under one conception may be contingent
under another conception. Paul's proposal for a correct conclusion is, there-
fore, again a proposition in which the formal predication is kept separate
from the real predication: *igitur aliqualiter esse est necessarium qualiter
esse est esse*, that is,

Therefore, FP: *(some state of affairs)*\(^F\) is necessary / RP: *(which)*\(^R\) coincides
in the world with *(that you exist)*\(^R\).

Analogous considerations apply to the examples *Deum esse est necessarium, sed
deuum esse est deum creare Socratem; igitur deum creare Socratem est necessa-
rarium and Deum esse est necessarium, sed deum esse est deum esse causam tui;
igitur deum esse causam tui est necessarium* (p. 178, 1-7; p. 182, 16-22).

A somewhat different example is:

(9) (p. 170, 20-29; p. 176, 3-15): *Hoc (demonstrando illam 'Tu es asinus') est
impossibile, et hoc est hoc esse; igitur hoc esse est impossibile*.

Paraphrase:

Someone points at the *(written)* sentence *Tu es asinus* *(You are a donkey)*
and says:

RP: This is *(an actually existing entity that is)* impossible.
RP: This coincides in the world with *(that this exists)*\(^R\).

Therefore, FP: *(that this exists)*\(^F\) is impossible.

Paul denies that the argument is valid, on the ground that in the first pre-
miss *impossibile* is taken *resolubiliter*, while in the conclusion it is taken
*officiabiliter*. This means that the first *impossibile* is a categorematic
term, denoting actually existing entities in the world that for some reason
or other are characterized as being impossible. Here it is predicated of the
actually existing entity *Tu es asinus*, which is a sentence that cannot poss-
ibly be true. The first premiss itself is therefore true. In the conclusion,
however, *impossibile* is taken *officiabiliter*, which means that the truth-
conditions of the conclusion are:

(a) This sentence *Hoc est* is impossible
(b) which signifies primarily that this *(i.e., the sentence *Tu es asinus*)
exists.

But from the fact that *Tu es asinus* is a sentence that cannot possibly be
true it does not follow that another sentence in which the actual existence
of that sentence is asserted, cannot be true. As a matter of fact, the im-
possible sentence *Tu es asinus* does exist and consequently the conclusion
is false, even though both premisses are true. As it stands, the argument
contains an illicit transition from real predication to formal predication
and from real supposition to formal supposition. A correct conclusion
would be: *igitur aliqualiter quod est hoc esse est impossibile*, that is,

Therefore, RP: *(something that coincides in the world with *(that this exists)*\(^R\)
is *(an actually existing entity that is)* impossible.

This conclusion is an existential generalization of the first premiss, to
which the information provided by the second premiss is added; it duly pre-
serves the real predication of both premisses.
Finally, it is not unlikely that Paul considered the following argument as an
instance of substitution in a modal context:

(10) (p. 172, 13–18; p. 178, 19–35): Ego posseam facere me currere; sed ego sum
me currere; itur possum facere me. This argument may perhaps be rewritten as:
Possible est me facere me currere; sed
ego sum me currere; itur possibile est
me facere me.

Paraphrase:

F: It is possible (that I make myself to run).^F^P
R: (1)^H coincide in the world with (that I am running).^R^P
Therefore, F: it is possible (that I make myself).^F^P

By officiatio we find the following truth-conditions. For the first premiss:
(a) This sentence is possible Ego facio me currere
(b) which signifies primarily that I make myself to run.
For the conclusion:
(c) This sentence is possible Ego facio me
(d) which signifies primarily that I make myself.
Obviously, the truth-conditions (a) and (b) differ from the truth-conditions
(c) and (d), so that the first premiss may be true while the conclusion is
false. We might also say that the conceived state of affairs that is expres-
sed by the verb facere when it is construed with the complexum is so diffe-
rent from the conceived state of affairs that is expressed by the verb face-
re when it is construed with the incomplexum that what is possible under the
former conception is not possible under the latter conception. Paul's propo-
sal for a correct conclusion is: itur ego possum aliquid facere esse
qualiter esse sum ego, that is,
Therefore, F: it is possible (that I bring about some state of affairs) / ^F^P/ ^R
R: (which) coincides in the world with (me).^R

Conclusion

Medieval nominales drew a sharp distinction between things in the world as
they exist independently of thought and language and, on the other hand, the
various conceptual forms by means of which extramental things are presented
to the mind and talked about. While the world contains only particular
things with their particular qualities, the conceptual devices by which these
things are put before the mind can be endlessly varied, both at the level
where no complexio or predication is involved and at the level where a com-
plexio yields propositional concepts. Even in the case of God, his infinite
simplicity is compatible with an infinite number of conceptual forms by
which he may be grasped (cum infinita simplicitate reali vel essentiali
stant infinitae distinctiones rationem formalum; p. 164, 25–26). Thus, it
may happen that many conceptual forms, either incomplex or complex, are in
the last instance satisfied by one and the same individual that meets the
conditions specified by each of those concepts. In such circumstances, the
conceptual forms coincide in so far as they are considered from the view-
point of the things in the world at which they are directed, but they
remain nonetheless different as manners of conceiving. There is, then, a
fundamental difference between coincidence in the world and sameness with respect to mode of conceiving. In particular, mere coincidence in the world of an incomplex and a complex way of conceiving something does not justify the conclusion that they are identical forms of thinking (Cf. example (5)). To this crucial and very old distinction between res and ratio (See, for instance, Aristotle, Categories, 1 a ff.) there corresponds a no less important distinction between real and formal predication. Real predication is characteristic of propositions that are simply directed at things in the world. Accordingly, the truth of a real predication is determined solely by the question whether or not there is a particular thing exhibiting the required state. As long as the denotatum remains the same, the mode of conceiving it is irrelevant. Terms are taken according to real supposition: they stand for things in the world. On the other hand, propositions were said to contain a formal predication in all those cases in which the truth-value is determined at least as much by a unique conceptual form in which things are presented to the mind as by these things themselves. In such contexts the expressions corresponding to the conceptual forms have formal supposition: they stand for modes of conceiving or for things precisely as they are considered under a specific conception. As the difference between real and formal predication was commonly indicated by some change in word-order, the rule of simple conversion does not hold when it would effect a transition from real to formal predication (Cf. examples (1) and (2)). In general, neglect of the above-mentioned distinctions easily leads to invalid reasonings. Notably, Paul of Venice shows that replacing an item that is taken according to formal supposition in a formal predication by an item with which it happens to coincide in the world is apt to alter the truth-value of the original. As we have seen, semantic, intentional, and modal contexts are among the formal predications in which such a substitution is blocked, regardless of whether it would consist in the replacement of a complexum by an incomplexum, as in examples (7) and (10), or in the replacement of one item by another item of the same category, as in example (3) and in examples (4), (6), and (8). Given that in all these cases the premises are mixed— one being a formal predication and the other a real predication—a correct conclusion can be drawn only if the information provided by the premises is recast in such a way that the differences between the two kinds of supposition and predication are duly respected. This may be done by the introduction of such phrases as aliquid quod and aliquamter esse qualiter esse, which divide the conclusion into two distinct members each of which contains its own type of predication and supposition.
XII

Lorenzo Valla on the Dream Paradox

1. Introduction

Of the logic text by Lorenzo Valla that used to be called *Dialectica* or *Dialecticae disputationes* we now have, thanks to G. Zippe1's efforts, three versions. The oldest version, completed towards 1439 and entitled *Repastinatio dialectice et philosophie*, is available in the second volume of Valla 1982. Another version, the *Reconcinnatio totius dialectice et fundamentorum universalis philosophie*, dating from the years between 1439 and 1448, is included in the *Opera omnia* printed at Basel in 1540 and reprinted in 1962. On the last version, entitled *Retractatio totius dialectice cum fundamentis universe philosophie*, Valla kept working until his death in 1457; it has been edited in Valla 1982, volume one. Already in the earliest version the eighteenth chapter of the third book is devoted to arguments in which a dilemma is rebutted by means of a counter-dilemma, a kind of reasoning Valla does not esteem very highly. As an example he cites the story of the lawsuit between Protagoras and his smart pupil Euathlus as it had been told – in the second century – by Aulus Gellius, *Noctes Atticae*, V, 10, 5-16.

Euathlus, wishing to become a lawyer, had made an arrangement with Protagoras, who was to be his teacher, that he would pay the second half of the tuition fee only after he had won his first case. But once Euathlus had finished his study, he delayed going into practice. After a while, therefore, Protagoras sued his former pupil for payment and presented his case as follows. <If I win, you owe me the money in virtue of the judges' decision; if you win, you owe me the money because of our arrangement; either I win or you win, therefore, you must pay me.> Euathlus, however, countered his master's dilemma with one of his own invention. <If I win, I do not owe you anything, in virtue of the judges' decision; if you win, and I do not win, I owe you nothing because of our arrangement; either I win or you win; therefore, I do not have to pay

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1 For Valla's general attitude towards non-syllogistic forms of arguing see Jardine 1977.
Bewildered by what they had heard, the judges refrained from passing judgement, on the ground that, however they would pronounce, their sentence was bound to refute itself.

Besides being convinced that Protagoras’ case could be considerably strengthened – which is proved by putting into his mouth a more efficacious speech – Valla resolutely disagrees with the judges’ feeling that it was impossible for them to reach a satisfactory decision and that it was therefore better to suspend judgement indefinitely. Apparently, they reasoned as follows. If we condemn Euathlus, he has not won his first case and need not pay, so that actually we acquit him and do not condemn him. If we do not condemn him but acquit him, then he has won his first case and is obliged to pay, so that actually we do not acquit him but condemn him. Valla, on the other hand, is of the opinion that the judges could have avoided the impasse by either pronouncing against Protagoras in virtue of the arrangement made by him and Euathlus (in which case Protagoras could claim his money in a second lawsuit) or by ruling against Euathlus because of bad faith. According to Valla, the judges – and Aulus Gellius, who seems to approve of their behaviour – are too much impressed by the irrelevant display of rhetorical wit and thus have lost sight of the cause itself.

It is at this point that Valla compares the situation sketched so far to a passage that occurs in a work composed by Lactantius in the beginning of the fourth century: *Divinae institutiones*, III, 6. There reference is made to the predicament of someone who has dreamt that he should not believe dreams: if he believes that dream, it will follow that he should not believe it; and if he does not believe that dream, it will follow that he should believe it. Lactantius adds that this is an example of a so-called ὁμωτάτου. It may therefore be helpful to have a closer look at the context in which that Greek word had its origin.

### 2. The Greek background

About the middle of the second century B.C. Hermagoras of Temnos had introduced a distinction between two kinds of question: issues that are capable of being debated and settled and issues that are not capable of

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2 Lactantius 1890, p. 189: *Si enim crediderit, tum sequetur ut non sit credendum, si autem non crediderit, tum sequetur ut credendum sit.*
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being debated or settled. Perhaps because of a certain analogy with conclusive and inconclusive patterns of reasoning the former were called συνεστῶτα and the latter ἀσύστατα. As far as we can judge from Latin sources, the last of the four types of ἀσύστατον distinguished by Hermagoras was the ἀπορον: the kind of issue which is such that the judges cannot find sufficient reasons to settle it one way or another. For instance, three men have undertaken a journey together and only two have come back; each of them accuses the other of having killed the third man and there are no circumstances which make the accusations different from one another. More than three centuries later, about 175, Hermogenes of Tarsus adopted the same distinction between two kinds of question, but divided the ἀσύστατα into eight types. He kept the ἀπορον in the fourth place, characterizing it as an issue which cannot be definitively solved and settled. As an example of such an impasse he adds the case in which Alexander dreamt that he should not believe dreams and then seeks advice about what to do with that dream: whichever counsel someone offers to him, to believe it or not to believe it, the outcome will be its very opposite. It is worthy of note that in Hermogenes' conception of an ἀπορον it is not restricted to forensic oratory; his only example has regard to deliberation. Moreover, the example has the form of a genuine paradox: the disjunction is supposed to be exhaustive and exclusive and each of the disjuncts leads to its contradictory.

Among the commentators on Hermogenes' œuvre the fourth-century scholar Sopater is interesting because he draws attention to the resemblance between Alexander's dream and each of three other paradoxes. As cases falling under the ἀπορον he mentions also the lawsuit between Corax and Tisias, the Crocodile, and the Soothsayer whose daughter has been kidnapped by robbers or enemies. In the usual version the law-

4 See Halm 1863, pp. 82-3 (Fortunatianus), p. 147 (Augustinianus?), p. 375 (C. Iulius Victor); cf. also p. 315 (Sulpitius Victor), and pp. 599-600 (Grillius).
5 Hermogenes 1913, pp. 32-3: Τέταρτον κατά τὸ ἀπορον, οὖ μὴ ἔστι λύσιν λαβεῖν μηδὲ πέρας, οἶον Ἀλέξανδρος ὄναρ εἶδεν ὅνειρος μὴ πιστεύειν καὶ βουλεύεται ὃ τι γὰρ ἐν συμβουλεύῃ τις ἐνταῦθα, τὸ ἐναντίον αὐτοῦ περανεῖ.
7 See Sextus Empiricus, Adversus mathematicos, II, 97-9; Troilus Sophista, Prolegome-
suit between Corax, a famous Sicilian rhetorician who lived in the fifth century B.C., and his pupil Tisias is of virtually the same form as the lawsuit between Protogoras and Euathlus, causing the same perplexity among the judges. Of the Crocodile there is only one more or less complete version in our ancient sources. In a Madrid manuscript the account of the Corax/Tisias debate given by Sopater (see footnote 7) contains the remark that Corax uses a Crocodile argument and that this type of argument was so called because of the following incident. A man’s son has been seized by a crocodile. The crocodile promises the father to return his son if the father correctly predicts whether the crocodile will release the son or eat him. The crocodile, who appears to have made up his mind to eat the boy, then justifies his behaviour by the following reasoning. If the father says that he will not get the son back, the crocodile may concede that this is true, but that, in order to corroborate that truth, he must nevertheless refrain from giving the child back. If, on the other hand, the father says that the crocodile will give the child back, he does not tell the truth, so that the crocodile need not return the son and is entitled to eat him.\(^8\) Other passages, however, contain only a description of the situation from which the Crocodile took off.\(^9\) It is supposed, for instance, that a woman is walking with her child near the river. The child is snatched by a crocodile, who thereupon promises to return the child if the mother tells the truth about what he is going to do. The mother says that the crocodile will not return the child. How the story went on can be gathered from Sopater’s tale of the soothsayer whose daughter has been kidnapped by a gang of robbers. The robbers promise the soothsayer to give his daughter back if he correctly predicts what they will do. The sooth-

\(^7\) Maximus Planudes, Prolegomena, in Rabe 1931, p. 67. For somewhat different versions – among them a badly mutilated account in Sopater’s commentary on Hermogenes (Walz 1832-6, V, pp. 6-7) – and allusions see Rabe 1931, Praefatio, pp. X-XI.

\(^8\) See Rabe 1931, Praefatio, p. X, n. 1. A similar version is found in Vives 1782, p. 183 (De censura veri, II, in fine). From those versions of the Corax/Tisias debate which call attention to the fact that each of the litigants uses a dilemmatic pattern of arguing it may be inferred that the names ‘Crocodile argument’ and ‘dilemmatic argument’ were sometimes considered to be practically synonymous. Compare Rabe 1931, p. 53, p. 67, p. 272.

\(^9\) Lucianus, Vitae auctio, par. 22 (= Hûlser 1987-8, fr. 1220); Anonymous scholiast on Hermogenes in Walz 1832-6, VII, 1, p. 163 (= Hûlser 1987-8, fr. 1223); also Maximus Planudes in Walz 1832-6, V, pp. 250-1.
sayer predicts that they will not give his daughter back. Then the robbers find themselves in the following quandary. Suppose that they decide to give the daughter back; then they would give her back to the soothsayer although he has not told the truth, and so act against their promise; since that is out of the question, giving her back is excluded. Suppose, on the other hand, that they decide not to give the girl back; then they would not give her back to the soothsayer although he has told the truth, and so break their promise; since that is out of the question, not giving her back is likewise excluded. Obviously, the crocodile may be depicted as facing the same problem. In each of these examples, then, both the decision to return the child and the decision not to return the child lead to the opposite conclusion. What the Dream, the Crocodile, the Soothsayer, and the lawsuit between Corax and Tisias have in common is the paralysing effect that, whichever of two options is made, each of them entails its contradictory. That at least is the impression given by the available texts. There is a temptation to make the Crocodile and the Soothsayer even more similar to the lawsuit between Corax and Tisias or between Protagoras and Euathlus by having the two parties concerned argue as follows. The reason why the soothsayer predicts that the robbers will not return his daughter is presumably the hope that they will be sensitive to his way of putting the case: «If I speak the truth, you must give her back in virtue of your promise; if I do not speak the truth, you must give her back because otherwise I would not be wrong; I speak the truth or I do not speak the truth; therefore, you must give her back.» But the robbers could rebut that dilemma by saying: «If you speak the truth, we cannot give her back because, if we did, you would not speak the truth; if you do not speak the truth, we cannot give her back, in virtue of our promise; you either speak the truth or do not speak the truth; therefore, we cannot give her back.» Although there is some evidence pointing in the direction of such an exchange, the main emphasis seems to have lain on the im-

10 Besides the passage cited in Rabe 1931, Praefatio, p. X, n. 1, an indication that arguments of that kind may have been exchanged could be the fact that an anonymous scholiast on Hermogenes (Walz 1832-6, VII, 1, pp. 162-3 = Hülser 1987-8, fr. 1223; cf. also Maximus Planudes in Walz 1832-6, V, pp. 250-1) apparently identifies the Crocodile with the Saw (ςπικνής). The latter name is explained by pointing to the similarity between the way in which a saw clings to the pieces that are being split and the way in which in the Crocodile the premisses cling to one another. Elsewhere, however, the Saw (ςπιονίμης) is identified with another type of ἄσωσ-
possibility of reaching a consistent decision, either in the course of some deliberation or in a forensic context.

According to the fifth-century scholiast Syrianus, the eight types of ἀπομονωτόν distinguished by Hermogenes were differentiated further by Euagoras and Acylas or Aquila, who extended the list to twelve items. One of their innovations consisted in splitting the ἀπομονωτόν into a deliberative and a forensic variety. The latter was called the ἀπομονωτόν in an accusation, but also, by the Stoics, the Crocodile impasse. The example given by Syrianus is a variant of the lawsuit between Protagoras and Euathlus. When Protagoras claims his fee, Euathlus replies in the following manner: «If I win, I need not give the money we agreed upon; and if I do not win, I have not yet learnt enough and should therefore not be asked for the money.»¹¹ This passage - and others¹² - make it probable that the name «Crocodile» did not refer solely to the event in which the eponymous animal played a crucial role, but was also used, a potiori, to cover instances of the ἀπομονωτόν in general.

Finally, I just mention that the fifth-century scholiast Marcellinus, after commenting upon the Dream paradox, calls attention, in a rather confused way, to yet another example, about a decree prescribing that decrees should not be complied with.¹³

3. Lactantius' reference to the Dream paradox

As far as I know, the only place in an ancient Latin text where the Dream paradox puts in an appearance is Lactantius, Divinae institutiones, III, 6. There the author discusses a thesis put forward by Arcesilaus of Pitane, the founder of the so-called Middle Academy in Athens. According to Cicero, Arcesilaus denied that anything could be known, not even that

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¹² See Hülser 1987-8, fr. 93, fr. 1204, fr. 1221; compare also note 8 above. The Greek words are κροκόδειλος (λόγος), κροκόδειλιτης (λόγος), or κροκόδιλινη (ἀμφιβολία;). ¹³ See Walz 1832-6, IV, p. 156. In the seventeenth century a similar example is given by Alsted 1630, p. 409: Ita si quaeatur, an parendum sit rescripto princapis sine subscriptione, quo vetat nos parere rescripto sine subscriptione, quidquid respondeas, falsum reperietur.
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which Socrates had left himself, namely, that we do not know anything.\textsuperscript{14} Lactantius argues that by endeavouring to repudiate all claims to knowledge without any knowledge of the truth Arcesilaus introduced a kind of philosophy that is \textit{asystatum}, or, in Latin, \textit{instabile} or \textit{inconstans}. For if you know nothing at all, the very thesis that nothing can be known will be taken away. Consequently, in order that nothing is to be known, it is necessary that at least something be known. So, he who pronounces as his doctrine that nothing is known professes something as apprehended and cognized, which means that something can be known. At this stage Lactantius points out that there is a certain similarity with the example of an \textit{άσυστάτων} that is prominent in the schools, to the effect that someone has dreamt that he should not believe dreams. If he believes that dream, it follows that he should not believe it; and if he does not believe it, it follows that he ought to believe it. In the same way, Lactantius continues, if nothing can be known, it is necessary that at least this be known, namely, that nothing is known; if, however, it is known that nothing can be known, then the statement that nothing can be known must be false. Therefore, Arcesilaus' tenet is inconsistent with itself and self-stultifying.\textsuperscript{15}

In spite of the fact that the pair of conditionals by which each case is developed suggests an identical pattern of reasoning, it is easy to see that actually the two elaborations are quite different. In the case of the Dream an affirmative antecedent has a negative consequent and a negative antecedent has an affirmative consequent, according to such a pattern as \(\text{If } P, \text{ then not-}P; \text{ if not-}P, \text{ then } P\). On the other hand, the form of Lactantius' argument may be represented by \(\text{If } P, \text{ then } K(P); \text{ if } K(P), \text{ then not-}P\) or, without the stepping-stone, by \(\text{If } P, \text{ then not-}P\). In fact, then, only the first half of the pattern of the Dream is relevant\textsuperscript{16}; which, to be sure, is sufficient to show that Arcesilaus' thesis is self-refuting. Actually, I think that Lactantius' complete argument is rather of a kind of which several examples can be found in Sextus Empiricus. Let us have a glance at one of them. Suppose that a sceptic asserts that there are no

\textsuperscript{14} Cicero, \textit{Academica posteriora} (I) 12, 45.

\textsuperscript{15} Lactantius 1890, p. 189: \textit{Sic inducitur dogma sibi ipsi repugnans seque dissolvens}.

\textsuperscript{16} In this connection it is perhaps significant that three manuscripts do not have the second half: \textit{si autem non crediderit, tum sequetur ut credendum sit} (see Lactantius 1890, p. 189).
proofs. Then we may manoeuvre him into the desired position by asking him whether that is just a bare assertion or something he is able to argue for. If it is the first, we need not take account of it; but if it is the second, then by somehow proving that there are no proofs he will pragmatically, that is, by performing that very act, refute his own thesis.17 In the same vein, Lactantius attempts to refute Arcesilaus by confronting him with the question whether he claims knowledge concerning his thesis or not. If not, what he says need not be taken seriously; but if he claims knowledge about it, that very knowledge will refute the thesis that nothing can be known. It is the second alternative that yields a correspondence to the first half of the Dream paradox.

4. A medieval trace of the Dream paradox

To the best of my knowledge – but given the vast amount of possibly pertinent literature and the present state of the sources it is difficult to be sure – the only place where the Dream paradox is mentioned in a medieval Latin text before the beginning of the fifteenth century is an intriguing passage in John of Salisbury’s *Policraticus*, V, 12. There this twelfth-century author cites the story told by Aulus Gellius, *Noctes Atticae*, V, 10, 5-15, about Protagoras and Euathlus. Although John is aware that <Agellius> is referring to Protagoras, he ascribes the role of the teacher to Pythagoras18, giving the name of the pupil as <Euallus>. The lawsuit between Pythagoras and Euallus is adduced in support of an attitude that is diametrically opposed to the one defended by Valla, namely, that in such dubious cases the judges should refrain from passing judgement. Not even a litigant of such legendary authority as Pythagoras ought to prevent them from postponing indefinitely their decision; for an overhasty judgement in an ambiguous issue is liable to cause regret afterwards. John reminds his readers of the lesson they learnt nearly as children, to the effect that in issues which involve hidden contrarieties it is extremely hard to find a solution – unless perhaps you regard yourself as more prudent than ancient Nestor. The added clause


18 Pythagoras still plays the same role in Thomas Wilson, *The Rule of Reason*, 1552 (1551), fol. 171-2.
is no doubt an allusion to a passage in Macrobius’ commentary on the
dream of Scipio, where Nestor is said to have established the trustwor-
thinness of Agamemnon’s dream in the second book of the Iliad by point-
ing out that in such a matter of public importance a dream which, when
told by anybody else, would be dismissed as futile, deserves belief when it
has appeared to the leader. 19 As is clear from Policraticus, II, 15, John of
Salisbury was acquainted with that passage. So far, so good. But then
his reference to Nestor is followed by a remark that during the siege of
Troy Agamemnon was told in his sleep that he should not believe
dreams; and that the wisest of the Greeks came to the conclusion that the
interpretation of this dream had better be left to Zeus. 20 As another ex-
ample of the type of case in which whatever is assumed to be true is
found to be false John mentions the Liar paradox. 21

Two features of this passage are worthy of note. In the first place, it is
rather obvious that John has amalgamated two different tales: the story
of Agamemnon’s dream in the Iliad, embellished by his own or someone
else’s fancies, and the case of Alexander’s dream as it figured, from
Hermogenes onwards, in the literature about the ἀξιόπος. This strange

19 See Macrobius, Commentarii in Sommiun Scipionis (about 400), 1, 3, 15. Cf. Homer,
Iliad, B, 80-1.
20 Ioannes Saresberiensis 1909, p. 339: ... nisi forte te antiquo Nestore reputes cautiorem.
<Ne credas somnio>, Agramennoni dictum est in somnis, dum in excidio Troiae Grecia la-
boraret. Huiusque somnii interpretationem Iouc censuerunt Grecorum sapientissimi reser-
uandam. Here the editor, C.C.I. Webb, notes: Hoc sophismatis τοῦ ἐνδομένου exemplum
nusquam reperire potui.
21 Laborantes uidi quamplurimos, dum quaeritur an qui dicit <Ego mentior> uerum dicit.
The same passage makes it plain that John was not unfamiliar with an ἀξιόπος
that is described under that name in the Digesta Iustiniani Augusti, XXXV, 2, 88 (ed.
Th. Mommsen, II, Berlin 1870, p. 219), in connection with the lex Falcidia, which
restricted the total amount of legacies to three quarters of a heritage, leaving at
least one quarter to the actual heir. Now suppose that someone possesses four
hundred gold coins and has destined three hundred of them to legacies. At the
same time he leaves you an estate that is worth one hundred gold coins, on the
condition that the lex Falcidia does not apply to his last will. In that case whatever
is assumed to be true will be found to be false. For if we say that the legacy given to
you is valid, the lex Falcidia is applicable; since then the condition is not fulfilled,
you are not entitled to the legacy. If, however, the legacy is not valid, because the
condition is not satisfied, the lex Falcidia is no longer applicable; consequently, the
condition is satisfied and you are entitled to the legacy. The same ἀξιόπος is to be
found (in 1573) in Hotman 1599, p. 1263.
mixture shows that in the twelfth century one of the best informed writers had no more than a very vague idea of the original setting of the Dream paradox. On the other hand, it is also clear that in John of Salisbury’s days there must have been a fairly widespread interest in this sort of antinomies. It would be worthwhile to undertake an investigation into the way in which this apparently hazy awareness of ancient conceptions of the ἀπορία is related to the literature on insolubilia that became a flourishing branch of logic in later centuries. The more so because some of the examples that are prominent in that literature exhibit a remarkable similarity of structure with instances of the ἀπορία found in ancient sources. A favourite is the case of Socrates wanting to cross a bridge that is guarded by the powerful lord Plato and his helpers. Plato swears that he will allow Socrates to cross if Socrates tells the truth about what is going to happen; whereupon Socrates predicts that Plato will not let him cross the bridge but will throw him into the water. Then the question can be raised what Plato ought to do in order to keep his promise.\footnote{See, for instance, Hughes 1982, pp. 118-22; and pp. 222-3, where attention is called to the similarity of structure between Buridan’s sophism and a number of paradoxical anecdotes that date from ancient times. Hughes expounds the lawsuit between Protagoras and Euathlus and also the Crocodile, without, however, telling us where he found the completed version of the latter. Also, he seems to think that the main point of each of those examples is the question which of the two parties argued correctly. As Buridan states explicitly, however, the real puzzle is the question: quid debeat facere Plato secundum pramissum. For other passages concerning the Bridge paradox see Ashworth 1976; also Bricot 1986, p. 70, for similar paradoxes.}

5. \textit{Valla’s way of getting rid of the Dream paradox}

Whatever the vicissitudes of the ancient doctrine of the ἀπορία in the foregoing period may have been, it is fascinating to see how Valla’s knowledge of it appears to have gradually increased during the years in which he composed the three versions of his book on dialectic. If we compare the later versions with the first one, it is remarkable, for instance, that the words \textit{dilemma} and \textit{dilemmaton}, which seem to be absent from scholastic logic texts, are mentioned there as the Greek names of a special kind of question that is treated by Cicero and Quintilian under other headings (\textit{complexio} or \textit{comprehensio} and \textit{divisio}). Further, in the
second and third versions he notes that what is told by Aulus Gellius about Protagoras and Euathlus is narrated by others concerning Corax and Tisias, an information which he must have obtained from Sextus Empiricus (Adversus mathematicos, II, 97-9), since that is the only source where it is reported that the judges drove both Corax and Tisias out of the court (shouting at them 'a bad egg from a bad crow'). Moreover, while in the first and the second versions Valla invokes only Lactantius as his source for the Dream paradox, in the third version he observes that it is to be found in other authors as well. And at that time he also knows that the paradox concerns a dream of Alexander (unless it is an invention of the philosophers). Such details show how towards the middle of the fifteenth century forgotten parts of ancient dialectic and rhetoric were slowly regained by the Latin West, no doubt under the influence of a spreading knowledge of Greek and of such mediators as George of Trebizond, who about 1433 had composed a Latin manual of rhetoric that was chiefly based on the tradition initiated by Hermogenes.

As far as the phrasing of the Dream paradox is concerned, there is likewise a slight difference between the earlier versions and the third version. According to the first and the second versions one is supposed to reason as follows. If the person concerned does not believe any dreams, he thereby believes this dream, and if he believes this dream, he believes at least one dream and therefore believes dreams. If, on the other hand, he believes (all) dreams, he thereby does not believe this dream, and if he does not believe this dream, he disbelieves at least one dream and therefore does not believe (all) dreams. In the third version Valla quotes Lactantius verbatim; and that slightly different argument can be expanded as follows. If the person concerned believes this particular
dream, and accordingly should not believe any dream, he should not believe it (and therefore believe dreams). If, on the other hand, he does not believe this dream, and thus should believe (all) dreams, he should believe it (and therefore not believe any dreams). However, for the way Valla opposes the Dream paradox this divergence of perspective does not really matter. Let us first have a look at the oldest version, where his repudiation of the paradox takes the most compact form.

According to Valla, the paradox is based on the false presupposition that believing this particular dream is a sufficient and necessary condition of believing no dreams; and that not believing this dream is a sufficient and necessary condition of believing (all) dreams. In his own words: "If I do not believe dreams, the reason is not that someone in this dream has told me not to believe dreams, but rather that I myself have found out that many of them are deceptive. And if I do believe them, the reason is not that I deem that person untrustworthy, but rather that I myself have come to the conclusion that many are true (though perhaps not this one)." Furthermore, one should not say that somebody believes dreams because he believes all dreams, but rather because he believes some dreams, in the sense that he believes some and does not believe others. And in deciding about each of them whether it is to be believed or not, he takes no account whatever of such a dream as underlies the paradox, but pays attention only to the circumstances and causes of the specific dream that demands interpretation and critical appraisal. In sum, for Valla such a dream as plays the crucial part in the paradox is far from being the decisive criterion on which his believing or not believing dreams depends; on the contrary, it is totally irrelevant.

In the second and third versions Valla elaborates this way of dismissing the paradox by invoking a kind of principle of verifiability. He emphasizes that the dream in question does not belong to the type of dream to which one can assent or not assent according as the course of events turns out to be in agreement with the prediction or warning contained in it. Suppose, for instance, that someone tells you in a dream that somewhere a treasure has been buried. If subsequently you discover the treasure exactly in the place indicated, you will believe that dream; and if you do not find it there, you will not believe the dream. For how can you be-

lieve someone if there is no way of establishing that he speaks the truth? Now, in the case of the paradox you cannot ascertain whether that person speaks the truth or not; it would therefore be foolish to believe him, no less than when he were to make you believe that he was Homer or Hesiod. All dreams present themselves with a claim to truth. But if that claim is not susceptible of being properly tested, they have no authority at all. Therefore, Valla is not prepared to let his judgement about dreams be influenced by any specimen in which he is told, in an entirely general and untestable way, to believe dreams or not to believe dreams. He reserves for himself the right to examine each single case on its own merits, according to a strict method of verification.

Valla, then, prevents the paradox from raising its gorgonian head by rejecting the validity of such vital implications as "If he does not believe any dreams, then he believes this dream" and "If he does not believe this dream, then he believes (all) dreams". On his view, it is surely possible for someone not to believe any dreams without believing this particular dream; although he then does something that is materially identical to the propositional content of the instruction, that does not mean that he believes this dream in the sense of intentionally complying with that instruction. Similarly, someone may not believe this particular dream and still not believe all dreams. In Valla's eyes, there is no relevant connection between the dream that allegedly causes the paradox and the general stance taken towards dreams by a person who values sound methods of coming to a decision. On the contrary, in answering the question whether a certain dream deserves belief or not one should take into account only pertinent aspects of that particular case as such, without in any way being distracted by such irrelevancies as the dreamt instruction not to believe any dreams.27

27 About a century later the Dream paradox is mentioned - under the heading De reflexis et insolubilibus - by Vives 1782, p. 183 (De censura veri, II, in fine). In accordance with his general repudiation of self-reference (verba, sicut instrumenta, aliis rebus accommodantur, non sibi), Vives interprets the instruction not to believe dreams as applying only to dreams other than that particular dream. That kind of solution had been proposed already by the Hermogenes commentator Sopater; see Walz 1832-6, IV, p. 155 (= Hülser 1987-8, fr. 1224). Vives, however, appeals to the scholastic logicians Peter of Mantua and Andreas Limosus; see De causis corruptarum artium liber tertius, qui est de dialectica corrupta, c. VI, in Vives 1785, p. 146.
That brings us back, finally, to the reason why Valla introduces the comparison with the Dream paradox. His point is that the judges who thought that, whichever verdict they delivered in the lawsuit between Protagoras and Euathlus, it would be inconsistent with itself, failed to concentrate upon the pertinent aspects of the cause itself, but allowed themselves to be carried away by the rhetorical firework displayed by the litigants. How Protagoras' case would look without the perplexing interplay of dilemma and counter-dilemma is set out next, in a vicarious speech that attempts to do justice to the common feeling that after all the master of such an adroit pupil ought not to go without a proper remuneration.
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Walter Burleigh on the Conclusion that You Are an Ass

The sentence *Tu es asinus* already plays a role in a collection of puzzling propositions that were discussed by a certain Ricardus Sophista at the beginning of the thirteenth century: namely, under the headings *Si aliquis dicit te esse asinum, dicit verum*, *Si dico te esse asinum, dico verum*, and *Tu non potes vere negare te non esse asinum*. That it still enjoyed the attention of logicians in the seventeenth century is proved by the fact that Arnold Geulincx, in the last pages of his *Logica* of 1662, extensively dwelled upon the way in which it is involved in what he calls the *sophisma splendidum*. In general, the sentence seems to have been popular as a striking example of a proposition that is patently false and even impossible and absurd, while at the same time the predicate *asinus* could evoke properties that made the hearer or reader even more reluctant to accept the sentence as true. In the present article I shall concentrate on the use made of the sentence in one passage of Walter Burleigh's *De puritate artis logicae tractatus breviar* (composed in the third decade of the fourteenth century). More in particular, I shall argue that the text of that passage in the edition of Ph. Boehner is seriously defective and submit a reading that is more fitting to such a keen logician as Burleigh undoubtedly was. In order to get properly equipped for this critical undertaking, it will be helpful to take a close look at the lucid and plausible way in which Geulincx deals with the *sophisma splendidum*. 

1. Geulincx’ unmasking of the sophisma splendidum

1.1. The prominent sophism that Geulincx dubs *sophisma splendidum* is exemplified by the following argument:

Quicunque dicit te esse animal, dicit verum.
(Whoever says that you are an animal says something that is true).
Sed qui dicit te esse asinum, dicit te esse animal.
(But he who says that you are an ass says that you are an animal).
Ergo qui dicit te esse asinum, dicit verum.
(Therefore, he who says that you are an ass says something that is true).

Geulincx rightly observes that the form of this reasoning is quite general and may be filled in by sophists in order to derive all manner of absurd conclusions: for instance, the conclusion that he who says that something white is black says something that is true apparently follows from the premisses that whoever says that something white is coloured says something that is true, and that he who says that something white is black says that something white is coloured. In order to appreciate Geulincx’ way of countering the sophist’s argument, we have to keep in mind his rules of interpretation and a distinction he draws with respect to the verb *dicere*.

In connection with his version of the medieval supposition theory Geulincx lays down four general rules of interpretation (*regulae generales acceptionum*). Leaving out details and refinements, they may be stated as follows:

1. The hearer should take the speaker’s words according to the sense intended by the speaker.
2. The hearer should take the speaker’s words in the most obvious and common sense.
3. The hearer should take the speaker’s words in a sense that makes the utterance true.
4. The hearer should be consistent in his interpretation.

Furthermore, Geulincx notes that the verb *dicere* has a twofold meaning. In one sense it is equivalent to *dicere formaliter* or *expresse*, that

4 *La logique ou l’art de penser* by A. Arnauld and P. Nicole, which came out in the same year as Geulincx’ *Logica*, has the following example (III, 11):
Celui qui dit que vous êtes animal, dit vrai.
Celui qui dit que vous êtes un oison, dit que vous êtes animal.
Donc celui qui dit que vous êtes un oison, dit vrai.
But there the sophism is handled in an altogether different way, which is not relevant to our purpose.

is, asserting that something is the case that can be expressed by exactly those words which occur in the declarative sentence in which the assertion is phrased. For instance, someone who utters the words ‘You are an animal’ (Tu es animal) thereby formally, or by means of exactly those words, says or asserts that you are an animal (te esse animal). By contrast, dicere may also be used in the sense of dicere consequenter or implicité, that is, saying or asserting by implication. For example, when someone says ‘I am standing’ (Sto), he says by implication that he is able to stand (se stare posse), although he does not say formally or explicitly that he is able to stand, through the very words ‘I am able to stand’ (Stare possum).6 Taken by itself, the verb dicere may be held to have the generic meaning of committing oneself to the truth of a proposition. This generic meaning, however, can be specified in two ways: either as committing oneself only to the truth of the proposition expressed by the words actually employed, or committing oneself to the truth of each and every proposition that is entailed by the original one and is thus a necessary condition of its truth. Evidently, in the first sense a speaker is committed only to the truth of the one proposition that is expressed by his actual words, whereas in the second sense the speaker is committed to the truth of infinitely many propositions.

There can be little doubt that Geulincx’ distinction between dicere formaliter and dicere consequenter has its roots in the distinction between significare primarie and significare secundarie that was developed especially in the course of the fourteenth century. Roughly speaking, the notion of significare primarie (or significare primo, praeclare, adaequate, principaliter, totaliter) applies to cases where that which is signified is expressed by the same word as the signifying term, as in ‘Homo’ significa! hominem, or, as in ‘Deus est’ significa! Deum esse, by the accusative plus infinitive phrase that corresponds to the proposition.7 The primary signifyate of a proposition was held to be decisive in establishing its truth-value. A proposition is true when it primarily signifies in such a way as is the case and it is false when it primarily signifies in such a way as is not the case. In particular, it figures in the verification of such so-called officiabiles propositions as Possibile est te esse: that proposition is true

6 Logica, ed. Land, 452; also 237-8, 245.
7 For details see for instance Paulus Venetus, Logica magna, I, 1, De terminis (edited with an English translation and notes by N. Kretzmann, Oxford 1979, 108-21); II, 11, De significato propositionis (edited with notes on the sources by Fr. Del Punta, translated into English with explanatory notes by Marilyn McCorp Adams, Oxford 1978, 190-9).
when it is based on the truth of *Ista propositio ‘Tu es’ est possibilis; quae praecise significat te esse.*

Ways of signifying that are not primary were commonly called secondary. One subspecies of that kind of signification consists of cases where a proposition is held to signify a state of affairs that is not formally and explicitly conveyed by it but merely implied. William Heytesbury, for instance, who is about a generation younger than Burleigh, states somewhere that the proposition ‘A man is running’ signifies the proposition ‘An animal is running’ not primarily but only secondarily (*haec propositio ‘Homo currit’ non significat hanc propositionem ‘Animal currit’ primarie sed solum secundarie*). And according to Paul of Venice it was a common saying that any proposition (secondarily) signifies whatever follows from it (*Quaelibet propositio significat quidquid sequitur ad eam*).

Followers of Paul of Venice commonly use a special name for this variety of secondary signification: *significare assertive.* According to Paul of Pergula the *significatum assertivum* is that which formally follows from some proposition. He also notes that even a false proposition can have many true *significata assertiva.* For example, the proposition *Homo est asinus* signifies assertively (that is, by implication) that a man exists and that a man is an animal, and so on. As is made clear by the rules of inference, that a truth follows from a falsehood in a formally valid inference is not abnormal (*non inconvenit ex falso sequi verum in consequentia bona et formali*).

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10 Paulus Venetus, *Logica magna*, II, 10, *De veritate et falsitate propositionum* (edited by Fr. Del Punta, translated by Marilyn McCord Adams, Oxford 1978, 74). See also p. 209, n. 10, for the opposite view defended by Peter of Mantua, on the ground that, though such a necessarily true statement as *Deus est* follows from *Tu curris*, the latter proposition does not signify that God exists, and that, though from such a necessarily false proposition as *Tu differe a te it follows that you are running*, that proposition does not signify that you are running.

As Geulincx, who studied and taught for a while at the university of Louvain, was thoroughly familiar with the scholastic tradition, we may assume that his distinction between *dicere formaliter* or *expresse* and *dicere consequenter* or *implicite* was borrowed from one or more of those authors who for practically the same purpose used such phrases as *significare primarie* and *significare secundarie*, or more specifically *significare assertive*.

1.2. We are now sufficiently prepared to follow the moves in Geulincx' struggle with the sophist. As far as the first premiss of the *sophisma splendidum* is concerned (*Quicunque dicit me esse animal, dicit verum*), Geulincx feels compelled to concede it, both in virtue of the second rule of interpretation and in virtue of the third rule, which requires that he take it in such a way that it becomes true. Now the truth of that first premiss is guaranteed only if it is interpreted as *Quicunque formaliter dicit me esse animal, dicit verum*. For someone who says only by implication that I am an animal does not necessarily say something that is true, since he may explicitly assert some falsehood—for instance that I am an ass—that is an antecedent from which the truth that I am an animal follows as a consequent. On the other hand, the second premiss (*Atqui qui dicit me esse asinum, dicit me esse animal*) is rejected by Geulincx, in compliance with the rule about consistency of interpretation. If the first *dicit* in the first premiss is taken as *formaliter dicit*, the second *dicit* in the second premiss has to be understood in the same sense. But then the second premiss is false. For he who says that I am an ass does not formally say that I am an animal, but says so only by implication. Therefore, on a correct interpretation the premisses are not both true.

The sophist, however, does not give up and claims that the second *dicit* in the second premiss should be understood as *sive formaliter sive consequenter dicit*. Then the second premiss can be accepted as true. All right, but the result is that the whole argument is no longer a valid syllogism in Barbara, because there are four terms: in the slot for the middle term in the first premiss the term *formaliter dicens me esse animal* occurs and the same place in the second premiss contains the different term *sive formaliter sive consequenter dicens me esse animal*.

If then the sophist goes on to amend the argument by stipulating that in the first premiss too the first *dicit* should be interpreted as *sive formaliter sive consequenter dicit*, it can be pointed out that, though in virtue of the first rule of interpretation he has a right to do so, in the
amended form the first premiss may fail to be true. The already
familiar reason is that on this interpretation someone who says either
formally or by implication that I am an animal does not necessarily
say something that is true; he may, for instance, confine himself to
asserting the proposition that I am an ass, which is false.

Finally, Geulincx maximizes his concessions and grants the sophist
the following form of the argument:

Quicunque formaliter vel consequenter dicit me esse animal, is formaliter vel
consequenter dicit verum.
Atqui, qui me asinum esse dicit, is formaliter vel consequenter dicit me esse
animal.
Ergo qui me asinum esse dicit, is formaliter vel consequenter dicit verum.

However, triumphant feelings on the part of the sophist are nipped in
the bud by making him realize that someone who duly accepts the
truth of the conclusion thereby does not necessarily concede that he is
an ass. For someone who says that I am an ass commits himself by
implication to such truths as that I am an animal, and so says either
formally or by implication something that is true and yet is not the
statement that I am an ass. It is this possibility that takes the sting out
of the final version of the sophist’s argument.

As we saw in 1.1., Paul of Pergula stressed that not seldom a truth
correctly follows from a falsehood and that therefore a false proposi-
tion may signify by implication an indefinite number of true
statements. This point is also of crucial importance in Geulincx’
attempts to curb the sophist’s intentions. It is not the case that some-
one who says by implication something that is true, for instance, that
I am an animal, must always say formally something that is true. He
may formally say something that is false but from which nevertheless
a truth logically follows.

2. Burleigh’s problem

Burleigh’s De puritate artis logicae tractatus brevior opens with a chapter
on the general rules of consequences. In that context he finds himself
faced with the problem of dealing with an objection against the
validity of the rule that whatever follows from the consequent of a con-
ditional statement or inference also follows from the antecedent (Quid-
quid sequitur ad consequens, sequitur ad antecedens). The objection is first
presented in the form of a counter-example. ‘I say that you are an ass;
therefore, I say that you are an animal’ is a sound inference. Never-
theless there is something that follows from the consequent but does
not follow from the antecedent. For from ‘I say that you are an animal’ it follows that I say something that is true and yet from ‘I say that you are an ass’ it does not follow that I say something that is true.

Next, the objection is strengthened by pointing out that, if the rule is correct, it will be possible to prove with its help the conclusion that you are an ass. The reasoning that leads to this absurdity is quite straightforward. Let us assume that both ‘If I say that you are an ass, then I say that you are an animal’ and ‘If I say that you are an animal, then I say something that is true’ are true conditionals. Then, if the rule is considered to be valid, it may be concluded that ‘If I say that you are an ass, then I say something that is true’ is equally true. But if the inference ‘I say that you are an ass; therefore, I say something that is true’ is correct, it is true that you are an ass: and, consequently, you are an ass. It is easy enough to trace the pattern of this *reductio ad absurdum* in Boehner’s text, except for p. 203, line 36-p. 204, line 1. As Boehner says in the Introduction, his text of the *Tractatus brevior* is based on two manuscripts: L (in the Hoose Library of the University of Southern California, Los Angeles) and Y (in the Vatican Library). He also states that in his edition he has given preference to L unless he thought there was a good reason to deviate from it (p. XVI). At these lines, however, he seems to have mixed up readings from both manuscripts, with the result that the text as it stands is rather messy. I confine myself here to remarking that from a logical angle the following text would be perfectly to the point: *igitur dicendo te esse asinum, dico verum* (according to the rule of inference); *igitur consequens* (namely, *Tu es asinus*) *est verum*.

3. Burleigh’s reply to the objection

3.1. At p. 205, lines 1-15, Burleigh makes some preliminary observations that in his eyes will enable him to give a satisfactory answer to the objection mentioned. He points out that the proposition *Dico te esse animal* is ambiguous in that the accusative plus infinitive phrase *te esse animal* can stand either for words or for a part of the world of things (*potest supponere pro voce vel pro re*). In the first sense the proposition conveys that I say or utter the words *Tu es animal*, while in the second sense it conveys that I say or assert that which is signified by those words. In general, this distinction applies to all sentences in which it is indicated that an act pertaining to a mode is related to an accusative plus infinitive phrase (leaving out the *non* at line 8 of Boehner’s text,
I read: *Et eodem modo est quaelibet oratio distinguenda, in qua actus pertinens ad modum [non] denotatur in dictum transire*. For the act can be related to the accusative plus infinitive phrase in respect of the words uttered or in respect of the world of things (*ratione dicti vel ratione rei*).

Burleigh further illustrates the ambiguity he has in mind by the example *Ille scit te esse hominem*. As far as the elaboration of this example is concerned, there are some differences between the text offered by manuscript L and Boehner’s text. Boehner has:

... potesl esse duplex intellectus, unus quod ille sciat illam vocem: ‘Tu es homo’, et hoc non potest nisi sciat litteras. Alius sensus est quod sciat rem significatam per illam vocem: ‘Tu es homo’, et istud scit laicus ignorans Latinum.

According to this reading, in one sense of *Ille scit te esse hominem* the person in question recognizes the words *Tu es homo*; and he can recognize them only if he is literate. In another sense he knows that which is signified by the words *Tu es homo*; and this even a layman who has no Latin can know. On this interpretation a contrast is pointed out between a literate person who is able to recognize certain words and a layman who, without knowing Latin, may still know that you are a human being. What one would expect, however, is rather a contrast as it is expressed—according to the *apparatus criticus*—by the text given in manuscript L:

... potest esse duplex intellectus bonus: quod ille sciat illam vocem: ‘Tu es homo’ et istud scit laicus ignorans Latinum; et quod iste sciat, quod realiter importatur per hanc propositionem: ‘Tu es homo’, et hoc nescit nisi clericus.

According to this L-text the sentence *Ille scit te esse hominem* can plausibly be taken in a twofold sense: that he is aware of the sounds *Tu es homo*; which is possible even for a layman who has no command of Latin. Or that he knows that to which the proposition *Tu es homo* refers in reality; and that is known only by someone who understands Latin. At any rate, I cannot see a good reason to deviate from L.

As the phrase *supponere pro voce vel pro re* suggests, Burleigh is thinking of the difference between material supposition and, especially, personal supposition. At the beginning of the *De puritate artis logicae tractatus longior* (p. 4) he states that in material supposition or *pro voce* the phrase *hominem esse animal* may stand either for the words *hominem esse animal* or for the words *Homo est animal*, that is, either for an infinitive phrase or for a declarative sentence. On the other hand, if the terms of such phrases as *hominem esse animal* or *te esse animal* are used significatively in personal supposition or *pro re*, they refer to a certain state of affairs in the world. It is quite natural, then, that to the dif-
ference in supposition there should correspond a difference of meaning in such a verb as dicere: when it is combined with an accusative plus infinitive phrase used according to material supposition, it takes on the meaning of uttering certain words, whereas combined with such a phrase used according to personal supposition it takes on the meaning of asserting that something is the case.\textsuperscript{12}

It should be noted that in spite of a clear similarity of function this distinction between dicere as uttering and dicere as asserting does not coincide with the distinction between dicere formaliter and dicere consequenter made by Geulincx. The latter distinction has regard to saying in the sense of asserting that something is the case. Within that sense Geulincx differentiates between an act of asserting that is tied to the very words by which the asserted state of affairs is expressed and an act of asserting that pertains to everything that logically follows from the initial statement. What he has in mind, then, is a distinction within the realm of signification, parallel to the difference which others marked by the phrases significare primarie and significare secundarie or assertive. Burleigh, on the other hand, draws the line between dicere in the sense of uttering sounds, in abstraction from their signification, and dicere in the sense of asserting, either explicitly or by implication. This latter difference between two kinds of dicere as asserting is not stressed in the present text by means of a special terminology, but there can be little doubt that Burleigh makes use of it in his reply to the argument adduced against the rule Quidquid sequitur ad consequens, sequitur ad antecedens.

3.2. As we saw in section 2., Burleigh's opponents called attention to the following triad:

\begin{enumerate}
\item \textit{Dico te esse asinum, igitur dice te esse animal.}
\item \textit{Dico te esse animal, ergo dico verum.}
\item \textit{Dico te esse asinum, igitur dico verum.}
\end{enumerate}

If the rule is correct, and (1) and (2) are conceded, it follows that (3) too has to be admitted. But (3), or what can be derived from (3), is patently false; therefore, given that it is difficult to doubt (1) and (2), it is the rule that should be rejected. So someone who wants to save the rule and at the same time agrees that (3) is false, finds himself

\textsuperscript{12} Compare what Gregory of Rimini, towards the middle of the fourteenth century, remarks about the twofold meaning of dicere: "Nam uno modo idem est quod dictum proferre vel formare. Alio modo idem est quod per dictum aliquid significare" (\textit{Super primo et secundo Sententiarum}, I, Dist. 42-44, q. 2, art. 1).
faced with the task of showing that there is no compelling reason to consider (1) and (2) as being incontrovertible. That is exactly the strategy Burleigh chooses in order to defend the rule.

Let us first look at lines 16-19 of Boehner’s text:

Per hoc ad propositum dico, quod si actus dicendi in illa: ‘Dico te esse asinum’, transeat in dictum ratione vocis, sic haec consequentia non tenet: ‘Dico te esse asinum, igitur dico te esse animal’.

The only difference between this text and L is that at line 17 instead of the first asinum L has animal. Already a good reason to prefer the reading animal is the fact that in the foregoing section about the ambiguity of dicere the proposition on which Burleigh concentrates is Dico te esse animal. Thus, let us assume that animal is preferable to the first asinum. Then Burleigh’s first step in defence of the rule consists in pointing out that, if the act of saying in the proposition Dico te esse animal is related to the accusative plus infinitive phrase in respect of the words uttered, then (1), the consequence Dico te esse asinum, igitur dico te esse animal, no longer holds. For it is not true that, if I say that you are an ass, I utter the words Tu es animal.13

The case for reading animal instead of asinum is considerably strengthened and even decided by the second step in Burleigh’s reply. In Boehner’s text, lines 19-20, this step is rendered as follows:

Si autem transeat in dictum ratione rei, sic haec consequentia non valet: ‘Dico te esse asinum, igitur dico verum’.

It is evident that here the reading asinum cannot possibly be correct. That the consequence Dico te esse asinum, igitur dico verum is not valid is precisely the point which is made by Burleigh’s opponents and is altogether in confesso. What Burleigh needs of course is the contention that, if the act of saying in Dico te esse animal is related to the accusative plus infinitive phrase in respect of the world of things, then (2), the consequence Dico te esse animal, igitur dico verum, is no longer valid and therefore need not be conceded. And again here, at line 20, L has indeed animal instead of asinum.

What is most interesting is Burleigh’s justification of his verdict on (2). According to L this justification has the form:

quia antecedens potest esse verum sine consequente. Quia si dico te esse asinum, non dico verum et tamen dicendo te esse asinum dico te esse animal.

13 Compare Geulincx, Logica, ed. Land, 452-3: “ille enim qui dicit me esse asinum, non dicit formaliter, me esse animal, sed tantum consequenter.”
There is, Burleigh explains, a fatal possibility, namely, that the antecedent \((Dico \ te \ esse \ animal)\) is true without the consequent \((Dico \ verum)\) being true. As long as \(dico\) in the antecedent is taken as asserting a state of affairs that is expressed by the accusative plus infinitive phrase—that is, in the sense of Geulincx’ \(dicere\ formaliter\)—there is no problem; for on that interpretation the consequent is true. But if the undifferentiated \(dico\) in the antecedent is understood as asserting a state of affairs only by implication—that is, in the sense of Geulincx’ \(dicere\ consequenter\)—the consequent need not be true. For when I say that you are an ass, it is not the case that I say something that is true; and yet by saying that you are an ass I say (by implication) that you are an animal.\(^{14}\) Precisely the fact that \(dicere\) in the sense of asserting is left undifferentiated as to the subspecies of formally asserting and asserting by implication gives Burleigh the opportunity to repudiate the claim that \((2)\) ought to be conceded.

As far as the justification of this repudiation is concerned, the text given by Boehner at lines 21-24 is different in form, but practically identical in import:

\[
\text{quia antecedens potest esse verum sine consequente. Quia si dico te esse asinum, dico te esse animal, secundum quod actus dicendi transit in dictum ratione rei, et tamen dicendo te esse asinum non dico verum.}
\]

The trouble is, however, that these lines completely lose their relevance if at line 17 and line 20 \(asinum\) is read instead of \(animal\).

3.3. In the Introduction (p. XVI) Boehner declares that it has been his policy to give preference to \(L\) unless there was a good reason not to do so. However, in the passage which we have examined in some detail it is perfectly clear that only \(L\) offers a text that makes sense from a logical point of view and that the text given by Boehner is downright unintelligible. In order to show that \((1)\) and \((2)\) of his opponents’ triad are not beyond dispute and thus need not be conceded, Burleigh first calls attention to the distinction between \(dicere\) in the sense of uttering words and \(dicere\) in the sense of asserting that something is the case, either explicitly or by implication. Next, he proves that, if \(dicere\) is taken in the first sense, inference \((1)\) has to be rejected; and that, if \(dicere\) is taken in the second sense, inference \((2)\)

\(^{14}\) Compare Geulincx, \textit{Logica}, ed. Land, 452: “Licet enim verum sit, me esse animal, potest tamen verum ex falso sequi, adeoque qui consequenter dicit, me esse animal (id est, antecedens aliquod dicit, ex quo sequatur me esse animal), nullatenus necessum est ut is verum dicat.”
leaves room for counter-examples. In justifying this latter claim, he must have been aware that in the sentence *Dico te esse animal* the verb *dico* could be taken to cover both asserting explicitly and asserting by implication. Although he does not mark this difference by such a special terminology as *significare primarie/secundarie, assertive or dicere formaliter/consequenter*, his procedure proves that he was sufficiently alert to it to make it a crucial factor in the refutation of his opponents’ argument.
Geulincx' containment theory of logic
Arnold Geulincx, born at Antwerp in 1624, spent the first part of his academic career at Louvain. In 1658 he lost his post there, on charges which are still rather obscure, and went to Leiden, where he taught logic and other subjects until his untimely death in 1669. At Leiden he published two books on logic: the *Logica fundamentis suis, a quibus hactenus collapsa fuerat, restituta* (1662, 1698) and the *Methodus inveniendi argumenta, quae soleriu quibusdam dicitur* (1663, 1675). Together with the *Dictata ad Logicam*, which circulated among his students and are preserved in a codex possessed by the university library of Leiden, those treatises were re-edited by J.P.N. Land in *Arnoldi Geulincx Antverpiensis opera philosophica*, I–III, Hagae Comitum, Apud Martium Nijhoff, 1891–3 (reprinted, with an introduction by H.J. de Vleeschauwer, Stuttgart-Bad Cannstatt, Frommann-Holzboog, 1965–8)1.

Although such historians of logic as Durr, the Kneale’s, and Risse2 have drawn attention to some original features of Geulincx’ approach, it seems to me that only a more detailed study of his work will bring out its real significance and its peculiar place in the development of logic in the seventeenth century. In this connection, it will be especially pertinent to ask oneself what exactly Geulincx meant by the foundations from which logic had allegedly lapsed and to which he was endeavouring to restore the subject in its genuine form. In order to obtain at least a partial answer to that question, it is important to heed a passage in the *Metaphysica Peripatetica* that deals with identity and difference3. According to the author, in this regard there are exactly four possible combinations of things. Two things are either the same or not the same; if they are not the same, they are either the same with respect to a part only or not even partly the same; in the latter case they are entirely different; in the former case there are again two possibilities; one thing is a part of the other or the two things have a common part4. To this exhaustive

\[\begin{array}{|c|c|}
\hline
\text{two things are} & \text{not the same} \\
\hline
\text{the same} & \text{not even partly} \\
\hline
\text{the same with respect to a part only} & \text{so that one is a part of the other} \\
\hline
\text{so that they have a common part} & \text{so that they have a common part} \\
\hline
\end{array}\]

1 The *Logica* (I, 165–454), the *Dictata ad Logicam* (I, 455–506), and the *Methodus* (II, 1–111) will be referred to by volume and page of Land’s edition.
4 Diagram 1:
division Geulincx adds the remark that it is on this foundation that he has built his logic *(quia etiam fundamento logicam nostram inaedificavimus).* In what follows I intend to show how from this fundamental division he derives his central notion of containment *(continentia)*, which covers both cases in which a whole contains a proper part and cases in which something contains itself; and how he attempts to unify the logic of terms and the logic of unanalysed statements by treating each of them as a special elaboration of a more abstract scheme and invoking purely formal properties of the part-whole relation and the relation of identity.

### 2. LOGIC AS A BRANCH OF SCIENTIFIC KNOWLEDGE

2.1. According to Geulincx, the fruits of studying logic consist in a mastery of the so-called instruments of scientific knowledge, that is, of definition, example, division, and logical ground *(ratio)* as skills in giving an apt answer to a scientific question. Since among the instruments concerning terms example and division provide answers to which the question ‘Why?’ is still applicable, and a definition is the eminent logical ground of itself, the three incomplex instruments can be reduced to the complex or propositional instrument of logical ground; this *ratio* or *logos* is the eponymous object of logic (I, 448). When a logical ground is presented in the form of a reasoning *(rationocinatio)*, this logical grounding consists of a premiss that offers the logical ground, a premiss that supplies the application of the logical ground, and a conclusion containing that which is thus logically grounded *(ratum).* For instance, ‘A body is extended; what is extended, is divisible; therefore, a body is divisible’ is a reasoned answer to the scientific question of why a body is divisible (I, 445-6). Such a scientific proof proceeds from a definition, or from the genus or specific difference contributing to that definition, to a non-accidental property that can be deduced from the essence according to a logically valid pattern of inference; or also, as is noted in the *Metaphysica Peripatetica*\(^5\), from one non-accidental property to another. In the last instance, then, a scientific proof always starts from self-evident and necessarily true propositions and leads by way of a correct deduction to a conclusion that is equally necessary. Geulincx wholeheartedly subscribes to the definition of scientific proof given by Aristotle, *Topics*, I, 1, 100 a 27\(^\text{6}\).

So far as categorical propositions are concerned, this means that as objects of scientific knowledge only those types are admitted in which either the whole essence or the genus or the specific difference or a non-accidental property is predicated of the subject; for instance, ‘Man is a rational animal’, ‘Man is an animal’, ‘Man is rational’, or ‘Man is capable of laughing’. Such propositions, in which the predication either is essential or regards a non-ac-

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\(^6\) Cf. *Disputationes de summo bono*, ed. Land, III, 284: *Demonstratio vero est syllogismus ex primis et veris, aut ex talibus, quae per aliqua prima et vera cognitionis suae initium sumperunt.*
Geulincx' containment theory of logic

cidental property that is deducible from the essence, have a copula that is a pure mark of affirmation, without any reference to time. They are extra-temporal or eternal necessary truths, which ultimately depend upon divine thought and are the proper objects of philosophy and scientific knowledge. Whereas these eternal necessary truths are eminently suited to be used as ingredients of a rigidly scientific proof and thus belong to the domain of reason, contingent propositions, in which a merely accidental property is predicated of a subject, as in 'Charles is the king of England', fall completely outside the bounds of reason. Although they share with essential predications the property of not being susceptible of being logically grounded, they cannot be the starting-point of a scientific proof, because they fail to be necessarily true. Nor can they become the conclusion of a scientific proof, since an inference from necessary premisses to a contingent conclusion is invalid; the criterion for calling a proposition contingent is precisely that neither the proposition itself nor its contradictory can be deduced from an essence (I, 236-7). Being not necessarily and eternally true (or false), contingent propositions have, moreover, a copula that is modified by an indication of time. According to Geulincx (I, 196), if the copula in 'Charles is the king of England' were taken as only the tenseless mark of affirmation, as in 'Two plus three is equal to five', that statement would be false; in order to make it true for a contemporary speaker, it should be expanded into 'Charles is now the king of England'. The fact that contingent and temporal propositions are not susceptible of being logically grounded and thus are not ultimately determined by divine thought, does not imply that they cannot be justified by other means than strictly scientific reasoning; they may be supported by an appeal to sense-perception, memory, or testimony. But Geulincx' point is that for the purpose of establishing their truth one cannot invoke any ratio in the sense of a logical or purely conceptual ground which, as a premiss that is necessarily true, self-evident and ultimately dependent on God's thought, would entail the contingent statement in question. In his opinion, it is not God's thought that determines the various kinds of contingent phenomena, but rather God's will: the ultimate explanation of contingent phenomena will always be that it has pleased God to create the world in that way.

2.2. Apart from providing the formal patterns according to which scientific proofs are to be conducted, logic is regarded by Geulincx as being itself a

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7 Cf. I, 176, 195-6, 236, 257, 464; Disputationes physicae, ed. Land, II, 497.
10 Cf. Metaphysica Peripatetica, ed. Land, II, 261: contingenta ..., quorum nec ratio, nec demonstratio, nec scientia ulla est ..., sed solum Dei arbitrium his causa est; voluit quod mundus sit, sol, terra, caeteraeque eius partes, mosque homines, nulla horum ratio, nulla demonstratio, nulla scientia; totum hoc est, quia Deus sic placuit. See also I, 394, 440; Disputationes de summo bono, ed. Land, III, 283-4; Annotata latiora in Prinicipia philosophiae Renati Descartes, ed. Land, III, 380-1, 447.
genuine branch of scientific knowledge. From a systematic point of view, he assigns logic, as the science of consequences, together with mathematics and ethics, to the class of digressions (excursus) from the main stream of metaphysics, which is the primary science. Didactically, however, he is inclined to give pride of place to logic, followed, successively, by geometry, arithmetic, and purified metaphysics. In order to delimit logic among the other sciences and so to restore it to itself (sibi restituere; I, 172), it is necessary to specify its proper object, in abstraction from any accretions that are alien to its peculiar mode of consideration. In contrast with mathematics, which leaves room for some support from the senses and the imagination, logic is concerned solely with intellectual activities of the human mind, of which we are immediately conscious, without any dependence on corporeal aids. Further, logic does not treat of things as they are in themselves and exist independently of thought and speech; things as such are the domain of metaphysics. Logic considers things as they are apprehended by such mental activities as making them the subject or predicate of an affirmation. Only at the level of thinking or talking about the world, of making things enter into our mental or verbal sayings, do items in the world become suitable candidates for being characterized by the logical notions of second order. It is no doubt from this perspective that Geulincx begins his Logica by declaring that affirmation is the root of logic (Radix logices est affirmatio; I, 175). Without the mental activity of rendering things the subject or predicate of an affirmation, there simply would not be any logic. From the fact that we do affirm one thing of another flow all the concepts of second order that are the tools of logic proper (I, 212-3).

Among these concepts Geulincx assigns a privileged position to the notion of consequence; accordingly, he calls logic the science of consequence (consequentiae scientia). It is from direct insights into the nature of consequence as such, abstracted from all particular matter, that the twenty-four theses of his logical cube, on which all reasonings are ultimately based, can be deduced. By paying exclusive attention to the essence and the non-accidental properties of pure consequence one is successively led to the laws governing such further logical concepts of second order as antecedent and consequent, true or false statements and their contradictories, simple and compound statements, conjunctions and disjunctions, affirmation and negation, subject and predicate, and terms taken universally or particularly (I, 387-8; also I, 172).


12 Cf. Oratio II, ed. Land, I, 163; II, 60; Annotata ad Ethicam, ed. Land, III, 219-20; Annotata latiora in Principia philosophiae Renati Descartes, ed. Land, III, 422.


14 Cf. Oratio I, ed. Land, I, 41-2; I, 170, 387-8, 455; Metaphysica vera, ed. Land, II, 139.
In the preface to his *Logica* Geulincx admitted that the order and neatness of the demonstrations of logical theorems that he offered in that work were susceptible of considerable improvement (I, 173). Only a year later, in the *Methodus*, he effectively showed how logic could be developed according to the same severe requirements of sequence and rigour as were met in the scientific proofs of geometry. His claim that no one before him had fastened the foundations of logic by such a continuous chain of demonstrations (II, 3) is not altogether implausible in the light of the fact that already in his first publication of 1653 he had called for a treatment of logic that would exhibit the neatness and tenor of geometry. It is not unlikely that the main lines of such a system had been laid down before he arrived at Leiden in 1658.

2.3. Geulincx' positive ideal of restoring logic to its purified form as a branch of scientific knowledge led him to urge, sometimes with heavy rhetoric, the drastic exclusion from it of all those elements which in the course of time had come to obscure its genuine nature. Especially in his public lecture of 1662 he fulminated against four of such intruders, dubbing them *prolo- gus*, *prognosis*, *rhapsodia*, and *anomalia*. First, he wants to expel from logic proper the so-called proemial questions, in which the nature of logic and the most suitable way of expounding it used to be discussed. In his opinion, that subject and everything that logicians were wont to add in a separate chapter called 'On Method' belong to another science, a science about the sciences or an encyclopedia, still to be developed. Further, a treatise on logic is not the place to expatiate on the anatomy of the mind in general and to set forth all sorts of irrelevant psychological distinctions. As distracting rhapsodies Geulincx regards all those tales and quotations with which especially humanist logicians were fond of embellishing their textbooks. Finally, and most importantly, he comprises under the name of *anomalia* the several ways in which various kinds of grammatical and metaphysical considerations were dragged into logic. More particularly, a purely formal and conceptual logic should not concern itself with reasonings based on the numerous substantive *loici* or commonplaces that are borrowed from other sciences.

That Geulincx himself complied with these restrictions is clear from the general way he handled the subject in the *Logica* and, even more conspicuously, from the terse structure of the *Methodus*. Occasionally, he explicitly introduces the specific point of view of logic (*logicae consideratio*) as a criterion for

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16 A somewhat less austere stance is taken in *Disputationes de summo bono*, ed. Land, III, 284-6, where Geulincx comments upon Aristotle, *Metaphysica*, II, 3, 995 a 3 ff.
18 Cf. also I, 171-2, 384-6.
deciding whether a certain theme ought to be examined. The distinction
between genus and species, for instance, is said to have no logical significan-
tce; for strictly logical purposes, both notions can be covered by the word su-
perius (I, 192, 194). And the concepts of matter and form belong to logic only
in so far as they play a role in elucidating affirmations, that is, in so far as
in such a proposition as 'A white man is a man' the predicate may be char-
acterized as the substantival part or matter of the subject and in 'A white
man is white' as the adjectival part or form of the subject (I, 187, 210). In
general, distinctions should be insisted on only when they are directly rele-
vant to some point of logic and especially when they serve the purpose of
avoiding ambiguity within that discipline; dragging in meanings of a term
that are current in other sciences than logic merely causes confusion (I, 419-
20).

2.4. If logic, in a duly purified form, is a branch of scientific knowledge and
if scientific knowledge is limited to statements that either are self-evident and
necessarily true or can be correctly deduced from self-evident or already es-
tablished premises, then it is impossible that logic as the science of conse-
quences should contain any contingent statements: contingentium non est scientia
(I, 394). This means that contingent consequences of the type 'She blushed;
therefore, she had a bad conscience' fall outside the scope of logic in the strict
sense. On the other hand, Geulincx points out that necessary consequences,
which are the proper subject-matter of logic, may have one or more contin-
gent components (I, 277-8). There are three possibilities: a contingent pro-
position may follow from a contingent proposition, a necessary proposition
may follow from a contingent proposition, and a contingent proposition may
follow from a proposition that cannot possibly be true (for an impossible pro-
position entails anything). Examples of the first two cases are 'I am standing;
therefore, I am not seated' and 'I am standing; therefore, I am capable of
standing'. The validity of the first inference can be accounted for either by
the so-called locus a repugnantibus, according to the maxim that, if one of two
incompatible terms is affirmed of a subject, the other has to be denied of that
same subject (I, 351); or through a syllogism formed by adding the universal
negative premiss 'Nothing that is standing is seated' (1, 390). In the second
example the sentence 'I am capable of standing', which is held to be necessa-
rily true, expresses a necessary condition of the contingent fact that I am
standing. Since a capacity is logically prior to its realization, the reasoning
is perfectly valid, though it should be noted that a necessary condition is not
an adequate logical ground; a ratio adaequata is a condition that is sufficient
as well as necessary (I, 432-4).

Of the two cases that never yield a necessary consequence with a contin-
gent component – from contingent to impossible and from necessary to con-
tingent – the latter is illustrated by an interesting example. Suppose that
someone argues as follows: 'Every white man is white; every white man is a
man; therefore, some men are white'. This argument looks like an impecca-
Geulincx’ containment theory of logic

ble syllogism, even though the premisses are necessarily true and the conclusion is contingent. Geulincx, however, replies that actually it is a syllogism with four terms. In the first premiss ‘white’ is predicated of the subject by dint of a tenseless copula, while in the conclusion ‘white’ is affirmed of its subject by means of a copula that is to be understood as being modified by an adverb that indicates the moment of utterance. As the modification of the copula somehow affects the predicate, ‘white’ as it occurs in the first premiss is a different term from ‘white’ as it occurs in the conclusion. A similar flaw invalidates the argument ‘Peter is possibly white; Peter is a man; therefore, some men are white’ (I, 279).

The foregoing remarks make it clear that, on the one hand, Geulincx regards at least some consequences in which a contingent proposition occurs essentially as belonging to the proper domain of logic. On the other hand, there can be no doubt that for him logic is concerned first and foremost with scientific reasonings, that is, with arguments that consist entirely of necessary propositions. He never tires of insisting on the fundamental difference between extratemporal statements, in which the predicate is either included in the subject or, as a non-accidental property, deducible from the subject and which therefore are eternal and necessary, and temporal statements, in which the predicate is a merely accidental property of the subject and which therefore are contingent. Since contingent statements neither have a logical ground nor can provide one and thus are not suited for the role of conclusion or premiss in scientific reasonings, Geulincx is not particularly interested in them, discussing them only occasionally as second-rate analogues of the genuine type of statement. In accordance with the sharp border line he draws between scientific knowledge and more or less probable opinion (I, 427-8), he strives to build a system of logic that both itself fully merits the name of a rational science and is almost exclusively aimed at scientific reasonings as its subject-matter. Unless that double design is borne in mind, it is very hard to make sense of his logic.

3. Geulincx’ strategy

3.1. The core of Geulincx’ logic consists of twenty-four theses that have the form of affirmative illative statements; that form might be rendered by ‘If p, then q’ or ‘p; therefore, q’. This set of theses may be represented by a cube, exhibiting four theses on each of its six sides. Three sides contain the twelve theses that have regard to the logic of unanalysed statements; the other half pertains to the logic of terms. Usually, Geulincx calls these key theses axioms. That name is appropriate in so far as the twenty-four theses may be taken for granted as the foundations of the validity of the majority of com-

21 After suggesting that contingent statements are best regarded as modal statements, he remarks: Sed quae haussce generis subtiliora sunt, et mysterium videntur, alio a me opportunius reservantur (I, 257).
mon reasonings. Looked at from that side, as directives for the carrying out of other arguments, they need not be proved (I, 319, 381-2, 386). But that does not mean that they are not susceptible of proof. On the contrary, Geulincx emphatically states that they are to be considered as theorems and should be derived from self-evident principles by a correct chain of demonstrations. These axioms, then, occupy an intermediate position between the normal run of reasonings that are directed by them and the ultimate principles from which they themselves can be deduced.

As general instructions for carrying out correct reasonings, axioms govern in the first place those arguments which may be characterized as pure and elementary. Such arguments are contrasted with composite or, as Geulincx calls them, pregnant arguments, which are constructed by combining two or more elementary reasonings. Let us take, for example, the syllogism ‘Every rational being is a man; every man is an animal; therefore, some animals are rational beings’. The validity of this argument can be elucidated by starting from the elementary reasoning ‘Every rational being is a man; every man is an animal; therefore, some animals are rational beings’, which is governed by the axiom stating that whatever is predicated truly of the predicate of a given premiss is also predicated truly of the subject of that given premiss. Next, the conclusion ‘Every rational being is an animal’ is seen to entail ‘Some rational beings are animals’, in virtue of the axiom of subalternation, according to which whatever is predicated truly of a term taken universally is also predicable of that same term taken particularly. Finally, the proposition ‘Some rational beings are animals’ may be changed into ‘Some animals are rational beings’ on the strength of the axiom of simple conversion, which says that, if in an affirmation in which both terms are taken particularly those terms are transposed, the result is equivalent to the original. Obviously, there is no need to devise a special axiom in order to account for the validity of the examined syllogism as such. It is far more economical to make use of a combination of axioms of a more general scope. Similarly, it would be unsatisfactory to introduce a special axiom for so-called accidental conversion, as in ‘Every man is an animal; therefore, some animals are men’. It suffices to invoke, successively, the axiom of subalternation and the axiom of simple conversion (I, 302-6, 334, 390).

Geulincx claims completeness for his logical cube in so far as the great majority of purely formal scientific reasonings, either elementary or composite, and thus all sciences and logic itself rest upon it (incubare; I, 383, 389). Exceptions are those reasonings which are based on the mental activity of repetition. Among these are, first of all, arguments of the form ‘a is a’; therefore, a is a’ or ‘a is b’; therefore, a is b’ (I, 305, 347, 379). But Geulincx also assigns to that class such reasonings as ‘If I am standing, then I am capable


23 Geulincx always uses ‘A’, ‘B’, ‘C’ etc. as dummy letters, both for statements and for terms. I shall use small letters for terms and capitals for statements.
of standing; I am standing; therefore, I am capable of standing', whose validity is guaranteed by the maxim 'If the consequent follows from the antecedent, then the consequent follows from the antecedent' (I, 391, 492; II, 97-8); and likewise such reasonings as 'Peter is a man; Peter is learned; therefore, Peter is a learned man', which are accounted for by the maxim 'If predicates are affirmed of a subject (separately), then those predicates are affirmed of that subject (in conjunction)' (I, 344, 391). All these forms of reasoning may be viewed as being founded upon the metaphysical principle of identity 'If it is, then it is' (Si est, est).

Evidently, the foundation provided by that principle lies much deeper than the half-way support that the axioms of the logical cube are capable of lending to the other forms of reasoning. That is why Geulincx regards those reasonings which are based on repetition and the principle of identity as preceding his cube (ante cubum nostrum sunt; I, 391).

3.2. Looked at in one direction, then, the axioms of the cube belong to the foundations of logic; in so far as they are destined to direct other arguments, they can, with respect to that function and provisionally, be left without proof. Nevertheless, Geulincx sees it as his task to go further and to deduce the axioms themselves from a limited set of self-evident principles. This endeavour attains its most mature, exact and elegant form in the Methodus inventendi argumenta. As the title of that treatise indicates, it is actually intended as a manual containing reliable procedures for finding either a correct conclusion when a premiss is given, or the right premisses from which a given conclusion can be proved. Since both kinds of undertaking presuppose valid forms of reasoning, Geulincx offers his readers the help of the axioms of the cube, which supply practically all the patterns of argument that are needed. By far the largest part of the treatise (II, 1-87), however, is devoted to an elaborate attempt at justifying the axioms themselves. It is there that the order and tidiness of geometry, of which the youthful Geulincx had spoken in 1652, are patiently and effectively applied to logic.

As for the most part I shall be following Geulincx' way of proceeding in the Methodus, it may be useful to give a brief survey of the contents of its first seven chapters and to make a few remarks about terminology. Chapter I contains preliminaries and introduces especially the basic notions of the truth or falsity of statements. Chapter II deals with the concepts of antecedent and consequent as the essential components of a consequence. In Chapter III the laws governing propositional negation are derived. Chapter IV continues the treatment of implication and negation and adds in particular the notion of mutual implication or equivalence. Chapter V concludes the elaboration of the laws of propositional logic by establishing theorems concerning the connectives 'and' and 'or'. After setting forth the logic of unanalysed statements by deducing the axioms that have regard to implication, propositional negation, equivalence, conjunction, and disjunction, Geulincx devotes the Chapters VI and VII to the logic of terms. Chapter VI is of a
preparatory nature, while Chapter VII offers the actual proofs of the axioms on which the various types of syllogism and the immediate inferences called subalternation and conversion are based. It should be added that in the Chapters VI and VII the proofs are somewhat less elaborate than in the preceding pages; at that stage the reader is supposed to be able to fill in the required details by his own effort.

As the demonstrations offered by Geulincx are claimed to be proofs that are carried out according to the criteria determining strictly scientific knowledge, the ultimate starting-points have to be common notions or principles, that is, necessarily true statements which are self-evident and so do not admit of any further logical grounding (I, 444-5; II, 5-6). Geulincx makes use of two kinds of such principles: general principles, which, as direct insights into the nature of being, belong to metaphysics and are presupposed by logic, and special principles, which have their origin in the specific object and viewpoint of logic itself. To these principles he adds definitions and postulates. Postulates differ from principles only in that assent to them is requested rather than simply taken for granted. The conclusions that are drawn from this initial material, mostly combined with theses that have been established previously, are called \textit{effata}. In Chapters I–V they are divided into \textit{effata} that are problems and \textit{effata} that are theorems; here they will be referred to as problems and theorems. A problem is a statement to the effect that it is possible to perform a certain task, for example, uttering a truth. The possibility is proved \textit{a posteriori}, by actually providing an instance of what is demanded, such as \textit{‘a is a’}. Theorems, on the other hand, are purely theoretical statements and have to be proved \textit{a priori} (II 17-18). Finally, \textit{additamenta} or corollaries are propositions that are appended to the demonstrated problems or theorems of which they are an immediate and obvious consequence. Geulincx, of course, is most interested in that subset of theorems and their corollaries which coincides with the axioms of the logical cube.

3.3. By way of conclusion the main points of this section may be summed up as follows.

Composite or pregnant reasonings
\begin{itemize}
\item are resolvable into
\item the pure or elementary reasonings belonging to
\item the logic of unanalysed statements or the logic of terms
\item directed by
\item the twenty-four axioms of the cube and
\item the maxims for reasoning based on repetition
\item which belong to the class of
\item theorems, problems, and corollaries
\item demonstrated by means of
\item postulates, special principles of logic, definitions, and
\item general principles of metaphysics.
\end{itemize}
4. STATEMENTS AND THEIR TRUTH OR FALSITY

4.1. As logic is concerned solely with sentences that are true or false, Geulincx devotes the first chapter of his Methodus, entitled De vero et falso (II, 5-26), to an elucidation of the notions of truth and falsity and of statements as the bearers of these truth-values. At the outset, he specifies seven general principles of being. The first principle says that there is something (Aliquid est); the second that there are even infinitely many things. As is clear also from other passages, the words ‘something’ and ‘thing’ have to be taken here in the very broad sense of anything that can be consistently thought of or talked about, irrespective of whether it really exists in the outside world or not. Everything that can be put before the mind has at least the kind of being that consists in being intelligible or thinkable (cogitabile) and is therefore not nothing. As there are countless acts of thinking, there are also innumerable things thought of, which, though they may not enjoy actual existence, possess nevertheless being in the large sense of being the possible content of an act of thinking. The first two general principles, then, guarantee that there is always something for an act of thinking or speaking to be about. Four other general principles convey the evident truths that everything is what it is and not another thing, that everything either is or is not, and that it is impossible for one and the same thing to be and at the same time not to be. The seventh general principle states that, even if one and the same thing is referred to by different names, an attribute that belongs to the thing under one name also belongs to it under the other name and an attribute that does not belong to the thing under one name does not belong to it under the other name either. As Geulincx emphasizes elsewhere too, our ways of naming and describing do not alter anything in reality.

The three definitions put forward in Chapter I regard the notions of statement (enuntiatio), truth (verum) and falsehood (falsum). A statement is defined as a saying that declares something to be the case (enuntiatio est dictio quae dicit esse). Geulincx notes that an act of asserting may be ascribed both to a speaker or writer and to the linguistic expression uttered by that person. Further, he sometimes uses dicere for mental sayings as well as for the verbal expressions of such acts of asserting (I, 212, 438). Also, he is careful to distinguish sayings with full assertive force from sayings that lack such force, notably acts of supposing or assuming (I, 299, 463; II, 16). But by far the most important distinction is that between dicere formaliter and dicere consequen-
When someone says 'I am standing', what he asserts may be taken either as merely that which is explicitly expressed by his very words or as everything that is logically implied by what he says explicitly. In the latter case the word *dicere* has the meaning of committing oneself to the truth, not only of what is stated formally and explicitly, but also of all the logical consequences that, as necessary conditions of its truth, are involved in what is actually said. In that sense of *dicere* someone who says 'I am standing' also says, by way of logical consequence, 'I am capable of standing' (I, 237-8, 452). As will become clear in what follows, it is saying in the sense of committing oneself to all the logical consequences of a saying in the narrow sense, including the latter saying itself, that is crucial to Geulincx' enterprise of restoring logic to its proper foundations. The two other definitions cover the division of statements into truths and falsehoods. A truth is defined as a saying that declares something to be the case and is such that the whole of what it declares to be the case is indeed the case. By contrast, a falsehood is a saying that declares something to be the case and is such that part of what it declares to be the case is not the case. Truth, then, is an identity between the conceived state of affairs as it is present to the mind in a truth-claiming act of saying, and the truth-determining state of affairs as it obtains in the domain of reality towards which the saying is directed, whereas falsity is a lack of such identity.

In contrast with the general principles of being, which are borrowed from metaphysics, the definitions belong to logic proper. The same applies to the seven special principles that are added to the definitions. According to the first special principle, which has a certain analogy to the first general principle, saying is always saying something (*Dictns aliquid dicit*); for saying nothing is tantamount to not saying at all. The second special principle is a law of identity for sayings: every saying says what it says. In connection with this principle Geulincx observes that such trivial sounding truisms are an indispensable basis for proving more substantial theses. The third special principle states that those sayings are to be counted as different assertions which either are about different things or ascribe different things. This principle might also be regarded as an application of a more comprehensive one, to the effect that saying follows being (*Dicere sequitur esse*): whenever there is a difference in the realm of being, there is a derivative difference in the realm of saying. The same more comprehensive principle can account also for the fourth special principle, and for three variants of it that are explicitly

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29 The history of this principle goes back as far as Plato's *Theaetetus* (189 A 6-10).

mentioned only in the following chapters (II, 27, 37-8). That the several instances of this more comprehensive principle are extremely important for understanding the peculiar use that Geulincx makes of the word dicere, is best illustrated by an example. Let us consider the two arguments ‘This is a piece of marble; necessarily, if this is a piece of marble, then it is a stone; therefore, this is a stone’ and ‘He says that this is a piece of marble; necessarily, if this is a piece of marble, then it is a stone; therefore, he says that this is a stone’. The first argument is straightforwardly valid. As for the second argument, that certainly fails to be valid if ‘He says’ is taken in the strict sense of dicere formaliter. For then it may well be true that he says that this is a piece of marble, but false that he says that this is a stone. On the other hand, if ‘He says’ is given the meaning of dicere consequenter, the second argument is perfectly valid. For a speaker who commits himself to the truth of the proposition ‘This is a piece of marble’ thereby is equally and inevitably committed to the truth of all its logical consequences, since these consequences are necessary conditions of the truth of that proposition. Now, what the special principles comprised under the heading Dicere sequitur esse lay down, in Chapter I and later, is a further determination of the pregnant meaning of ‘saying’: when in the sphere of being towards which a saying is directed there is a necessary connection or a relation of identity between one item and another item, then a speaker who says that the former obtains also says that the latter obtains. The scope of one’s commitment is determined, not only by what one says explicitly, but also by everything that, independently of any explicit formulation, is related to it in one of the specified ways.

The three remaining special principles have a slightly different character. As Geulincx needs some patterns of reasoning that will guarantee a correct transition from principles and definitions as premisses to theorems as conclusions, he introduces three forms of argument whose validity is sufficiently evident to be taken for granted. One is the form which elsewhere he calls disjunctive syllogism (I, 370; II, 97); it might be represented by \( p \text{ or } q \); not \( p \); therefore, \( q \). The second is the form called elsewhere copulative syllogism (I, 372-3; II, 97): ‘Not \( (p \text{ and } q) \); \( p \); therefore, not \( q \). The third, which is left nameless, might be rendered by \( p \text{ or } q \); necessarily, if \( p \), then \( r \); necessarily, if \( q \), then \( s \); therefore, \( r \) or \( s \). An obvious variant of it is the pattern \( p \text{ or } q \); necessarily, if \( p \), then \( r \); necessarily, if \( q \), then \( r \); therefore, \( r \)’ (II, 38).

Postulates, finally, are nothing but principles under a polite guise. First, it is perfectly reasonable to expect that the speaker will be allowed to give a name, in this context mostly a letter, to any thing he wants to talk about, and to continue to use that name as a proxy for the thing concerned\(^{31}\). Moreover, it may be presumed that the speaker will always obtain permission to suppose that something is the case or is not the case, irrespective of whether that supposition is actually true or false. Especially in logic it is not unusual for a speaker to put forward some proposition as a mere supposition,

\(^{31}\) Compare Aristotle, De sophisticis elenchis, 1, 165 a 6-10.
as opposed to a full-blown assertion, in order to find out what would follow from it if it were true.

4.2. Furnished with the requisites enumerated above, Geulincx succeeds in proving, as problems, that it is possible to construct a statement, for example, ‘a is something’, and even infinitely many statements (‘b is something’ etc.); that it is possible to construct a truth, for instance, ‘a is a’, and even infinitely many truths; that it is possible to construct a falsehood, for example, ‘a is b’ when a differs from b; and also, as theorems, that both truths and falsehoods are statements. Next, he offers demonstrations of the logical laws that are analogues of the metaphysical principles that everything either is or is not and that it is impossible for one and the same thing to be and at the same time not to be: the law that every statement is either true or false and the law that it is impossible for the same statement to be simultaneously true and false. From these theorems, which are ultimately based on the fact that the sphere of being is reflected in the sphere of saying, there follows a set of rules that govern the use of the words ‘true’ and ‘false’: if a statement is not true, then it is false; if a statement is not false, then it is true; if a statement is true, then it is not false; if a statement is false, then it is not true. Moreover, it can now be proved that there are infinitely many falsehoods. Given that there are infinitely many truths (‘a is a’, ‘b is b’ etc.), any statement asserting that one of them is false will itself be false, since the particular truth, being true, cannot be false.

The climax of Chapter I is reached in the twelfth theorem, to the effect that every statement says that the statement itself is true (Omnis enuntiatio dicit se esse veram). This pivotal theorem is proved as follows. Let us, among the infinitely many statements available, single out an arbitrary one and call it A. Then we have to show that A says that A is true. Being a statement, A says that something is the case (A dicit esse). Further, according to the law of identity for sayings, A declares that to be the case which A declares to be the case (dicit esse quod dicit esse). But, in virtue of the definition of a truth, the circumstance that what A declares to be the case coincides in reality with the circumstance that A is true (sed esse id, quod A esse dicit, est A esse verum). Therefore, since A says the former, it also says the latter, namely, that A is true. The conclusion rests on the fourth special principle and is a particular instance of Dicere sequitur esse. That means that the verb dico in Omnis enuntiatio dicit se esse veram is to be taken in the sense of dico conse-

\[ A \text{ dicit esse quod } A \text{ dicit esse.} \]
\[ \text{Ergo } A \text{ dicit esse verum.} \]

(Special principle 2)

(Definition 2)

(Special principle 4)
Geulincx' containment theory of logic

quenter; otherwise, it would be false that someone who says (explicitly) 'I am standing' also says (explicitly) "I am standing" is true (I, 234). This proof, in which each step is meticulously accounted for, also shows that such seemingly trivial principles as the law of identity for sayings may play a cardinal role in the process of establishing the truth of more interesting theses.

The last theorem of Chapter I, to the effect that every statement which says that it itself is false, is false, is now easy to prove. If A is supposed to say that A is false and if A also says that A is true (Theorem 12), then A says that A is both true and false; given that A cannot be simultaneously true and false, A must be false. This is Geulincx' way of dealing with the paradox of the so-called self-falsifying propositions: all of them are false. He also notes that there is thus a remarkable difference between a statement's saying that it itself is true and a statement's saying that it itself is false. For in the latter case the statement is eo ipso false, whereas in the former case the statement, though claiming that it itself is true, need not therefore be true.

5. CONSEQUENCE AS CONTAINMENT

5.1. In Chapter II of the Methodus, entitled De antecedente et consequente (II, 26-36), Geulincx begins to execute the actual task he has set himself, namely, deducing the axioms of the logical cube from the properties of consequence as such. Naturally, at the first stage of this undertaking he will be greatly assisted by the results of Chapter I, notably the clarification of the concept of dicere consequenter and the proof of the twelfth theorem. To start with, he introduces two more principles of being. The first general principle states the necessary truth that, if this (a certain item that can be indicated) exists, then something exists (Si hoc est, aliquid est). The second general principle has regard to wholes and says that nothing that belongs to a whole lies outside that whole (Ultra totum, nihil est illius totius). Further, Geulincx offers the following definitions of the notions of antecedent and consequent. An antecedent is a statement which says that the whole of what some other statement declares to be the case, is the case (enuntiatio, quae dicit totum id esse, quod esse dicit alia aliqua enuntiatio); the first statement is said to be the antecedent of the other statement, or, synonymously, to entail that other statement. A consequent is a statement of such a nature that the whole of what it declares to be the case, is said to be the case by some other statement (enuntiatio, cuius totum quod esse dicit, esse dicitur ab alia enuntiacione); such a statement is said to be the consequent of that other statement, or to be entailed by it or to follow from it. Before trying to elucidate the background of these definitions, I want to mention the two special principles and the postulate of Chapter II. One principle of logic is the truism that, if A says B, then B is said by A, and that, if A is said by B, then B says A. The second special principle is one of the variants of Dicere sequitur esse: if A cannot be without B, then a saying that says that A is, also says that B is. The postulate is meant to guarantee that it is always permissible to say precisely what one wishes to say, without any
irrelevant admixtures. Geulincx is careful to note that of course the logical consequences of what is formally said are not to be regarded as superfluous additions. They are always and necessarily included in what is said, if that latter verb is taken in the sense of dicere consequenter. Even in its most undorned appearance every statement comprises infinitely many other statements (I, 238).

5.2. In order to gain a full understanding of the peculiar form Geulincx gives to his definitions of the notions of antecedent and consequent, it may be useful to insert here some themes that he discusses more extensively in the Logica and the Dictata ad Logicam. First of all, we need to have a look at his doctrine of whole and part (De toto et parte). According to Geulincx, one of the numerous modes of thinking that are typical of the human mind is the operation of collecting several particular things into a single whole; he calls that activity simul-sumptio or totatio. Things in the world are wholes and parts only in so far as they are conceived as such by the mind; it would be a grave mistake to ascribe those categories to things in themselves. Moreover, the diverse parts of which a whole is made to consist may be enumerated in two different ways: either conjunctively (copulative) by means of 'and' or disjunctively by means of 'or'. When an enumeration lacks an explicit connective, as in Veni, vidi, vici, it is to be counted as a conjunctive enumeration. An example of a whole that is enumerated conjunctively (tutum actuale) would be a list of the main parts of a tree: roots and trunk and branches. An example of a whole that is enumerated disjunctively (tutum potentiale) is provided by the genus metal in so far as it is either gold or silver or iron etc.; or by the genus tree in so far as it is either an oak or a beech or an elm etc.; or by the species man in so far as it is either Socrates or Plato or Aristotle etc.

At this point, let us return to Diagram I in the fourth footnote of the Introduction. That picture of the four possible ways in which two things may be related in respect of their identity or non-identity can be readily transformed into a picture illuminating the four possible relations in which two wholes may stand to one another. If we transpose the two cases in the left half of Diagram I, we get the following possibilities. Two wholes either have no

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36 Diagram II:
part in common (1) or they have some part in common. In the latter case they either have all their parts in common (2) or they do not have all their parts in common. If they do not have all their parts in common, either only one of them has parts of its own (3) or each of them has parts of its own (4). It is, I submit, this purely formal and abstract scheme that Geulincx considers as the principal foundation of his entire system of logic. Interpreted in one way, it yields the logic of unanalysed statements; interpreted in another way, it yields the logic of terms or predicates. For the time being, I shall concentrate on the interpretation given to it in the context of the logic of unanalysed statements.

If we use the word *dictum* for that which is declared to be the case by a statement, it is obvious that the definitions of antecedent and consequent may be phrased more briefly as follows: an antecedent is a statement that says the whole *dictum* of another statement, while a consequent is a statement whose *dictum* is said by another statement. Or, always bearing in mind that *dicere* is used here in the sense of *dicere consequenter*, we might also say that an antecedent is a statement whose *dictum* contains the *dictum* of another statement, while a consequent is a statement whose *dictum* is contained in the *dictum* of another statement. In point of fact, Geulincx emphasizes that consequence is a form of containment (*contuita*): a statement that is an antecedent contains somehow everything that follows from it, both the statement itself and the infinitely many other statements entailed by it. He distinguishes this type of containment from the type of containment that is peculiar to the logic of terms by adding that it has regard to illation or consequence, not to affirmation or predication. More importantly, what characterizes the relation of containment between statements, as opposed to the relation of containment between terms, is the fact that the antecedent or containing statement is a conjunctively enumerated whole or *totum actuale* with respect to the consequent or contained statement. In other words, the sum total of *dicta* connected with the antecedent is a whole that comprises as one part the totality of *dicta* connected with the consequent. Both the antecedent and the consequent as such are conjunctively enumerated wholes of *dicta*, but they are related in such a way that the whole *dictum* of the consequent is a part of the whole *dictum* of the antecedent.

It is not difficult to see how this whole-part relationship between antecedent and consequent can be located on the map of Diagram II. The only possibilities that are positively relevant are those numbered 2 and 3. The latter applies to implications that go in one direction only; the whole *dictum* of

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37 Cf. I, 280: *Antecedens enim sequatur consequent in se suum consequens*; I, 282: *Continentia, qua antecedens continet suum consequentem penes illationem seu consequentiam* See also I, 245, 276, 376.

the consequent is included in the *dictum* of the antecedent, which however has also parts or *dicta* of its own so that it is not the case that the whole *dictum* of the antecedent is included in the whole *dictum* of the consequent. The possibility numbered 2 covers mutual implication, in which neither of the statements has any *dicta* of its own. As we shall see later, the difference between those two cases is discussed in Chapter IV of the *Methodus*. By contrast, the theoretical possibilities numbered 1 and 4 are of only negative significance with regard to consequence. Evidently, when it is not the case that the whole *dictum* of one statement is contained in the whole *dictum* of another statement, it must be denied that there is a relation of consequence between them. In particular, when two statements have *dicta* in common but each of them also has *dicta* of its own, neither says the whole of what the other says and no combination of truth-values is excluded. If, for example, ‘I am standing’ is true, ‘I am talking’ may be either true or false; and if ‘I am standing’ is false, ‘I am talking’ may be either true or false. In the case of two disparate statements, then, there is no guarantee that, if one is true, the other will be true, or, if one is false, the other will be false.

In conclusion, the circumstance that a certain statement is an antecedent with respect to another statement, which thereby becomes one of its consequents, may be expressed in three equivalent ways: that one statement says (*consequenter*) the whole of what is said by another statement; or that the whole *dictum* of one statement contains the whole *dictum* of another statement; or that the conjunctively enumerated whole of the *dicta* of one statement includes the conjunctively enumerated whole of the *dicta* of another statement as a part. The key notions by means of which Geulincx illuminates the nature of consequence and whose content he takes to be immediately and lucidly given to conscience as modes of thinking and speaking, are the concept of *discere consequenter* or being committed to all the necessary conditions of the truth of what one says explicitly, and the concept of containment as a specific relation between whole and part.

5.3. Returning now to Chapter II of the *Methodus*, we find that Geulincx proves first that it is always possible to construct a statement consisting of an antecedent and a consequent. His example, ‘If A, then A is true’, is based on the twelfth theorem of Chapter I. It follows that every statement is an antecedent with respect to the statement that it itself is true. Further, since every consequent is a statement, it is always possible to construct a second consequent that has a given consequent as antecedent: for instance, the consequent of ‘If A is true, then “A is true” is true’ becomes antecedent in ‘If A is true, then “A is true” is true’. After demonstrating that ‘If A is true, then A’ is a theorem,
he likewise shows that it is always possible to construct a statement that is the antecedent of a given antecedent: for instance, the antecedent of 'If A is true, then "A is true" is true' follows from A, which therefore is the antecedent of an antecedent. So far, Geulincx has established that the antecedent of a given consequence can always become the consequent of another antecedent and that the consequent of a given consequence can always be made the antecedent of another consequent. Whenever 'If A, then B' is given, we may add either 'If C, then A' or 'If B, then C'. Next, he proves that an antecedent says that its consequent is true; that, if the antecedent is true, the consequent must be true; and that a saying which says that the antecedent is true, also says that the consequent is true.

After these preparations Geulincx is able to prove two important axioms of his logical cube. The first axiom states that, if the antecedent of a given consequence is the consequent of a third statement, then the consequent of that given consequence is also a consequent of that third statement. Let us take the consequence 'If A, then B', with A as antecedent and B as consequent; and suppose that A is the consequent of a third statement, called C: 'If C, then A'. Then it has to be proved that B too is a consequent of C: 'If C, then B'. The proof is based on the *Dicere sequitur esse* principle. C says that A is true, but if A is true, its consequent B must also be true; therefore, C says that B is true, which means that B is a consequent of C.

The second axiom states that whatever is a consequent of the consequent of a given consequence is also a consequent of the antecedent of that consequence. Let us take the consequence 'If A, then B' and suppose that the consequent B is the antecedent of a third statement, called C. Then it has to be proved that C is also a consequent of A: 'If A, then C'. However, no new proof is needed, since by transposing the premises and then substituting A for B, B for C and C for A, we obtain a form to which the proof of the first axiom is applicable. As Geulincx notes, the two axioms differ only in external appearance; basically they are one and the same axiom.

A somewhat simpler proof of the second axiom is given in the *Dictata ad Logicam* (I, 503): A says the whole of what B says; B says the whole of what C says; therefore, A says the whole of what C says. A similar proof of the first axiom would be: A says the whole of what B says; C says the whole of what A says; therefore, C says the whole of what B says. Yet another version is to be found in the *Logica* (I, 280-1). There the first axiom is based on the evident truth that, if one thing contains another thing and the first thing is contained in a third thing, the second thing too is contained in that third thing (*in quo continent, in eo continentur et contentum*). If, for example, a cask contains wine and the cask is in a cellar, then the wine will be in the cellar as well. In the same vein, the second axiom is accounted for by the truism that, if

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**Substitution is permitted in virtue of the postulate that we may designate things by means of any name we like (II, 15). For the transposition of the premises see II, 94: *Nota, ad inferendum conclusionem perinde esse, quo ordine dispositione praemissa.*"
one thing contains another thing and a third thing is contained in the second thing, then the third thing will also be contained in the first thing (quod conti-
teatur in contento, continetur etiam in continente). These formulations make it abund-
antly clear that what Geulincx actually has in mind is the formal feature of relations that is nowadays called transitivity. Whichever of the three ex-
pressions for the connection between antecedent and consequent that were mentioned at the end of 5.2. we care to choose, each of them exhibits this feature of transitivity. In fact, that is precisely what makes them equivalent from a logical point of view. Abbreviating the several versions by the first let-
ter of dicere consequenter, we might render the two axioms as follows: ‘If A d B and C d A, then C d B’ and ‘If A d B and B d C, then A d C’.

In addition to the theorem that, if the antecedent is true, the consequent must be true, Geulincx goes on to prove that in a correct consequence it cannot be the case that the antecedent is true and the consequent false; that, if the consequent is false, the antecedent too will be false; and that it is possible to construct a true consequence in which the antecedent is false and the con-
sequent true. In the proof of that last component of the truth-table for con-
sequence Geulincx makes use of the first general principle of Chapter II, to the effect that, if this is, then something is. Let A be some false statement and B the true statement that something is true. Then the assertion A, though being false, nevertheless says or claims that A is true, according to the twelfth theorem of Chapter I. But, if A is true, then something is true. Therefore, A says that something is true, in virtue of the Dicere sequitur esse principle. A, then, says the whole of what B says, which means that ‘If A, then B’ is true. As corollaries, Geulincx adds that consequently every falsehood entails some truth, namely, that something is true, and that therefore at least some part of the whole dictum of a falsehood is true. Finally, the eleventh theorem of Chapter II states that the consequent of a true implication does not declare anything to be the case that lies outside that which the antecedent declares to be the case. That theorem is proved with the help of the second general principle of being, to the effect that nothing that is a part of a whole lies beyond that whole.

6. NEGATION AND CONTRADICTION

6.1. The subject-matter of Chapter III of the Methodus, entitled De negante
et negato (II, 36-49), is propositional negation, the sole type of negation ack-
nowledged by Geulincx. According to him, negative statements actually are modal statements, saying that the negated statement is false: ‘Brutes are not rational’, for instance, is equivalent to “Brutes are rational” is false. Whereas in the Logica he had restricted negating statements to statements that

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41 Compare I, 278: ex vero nil nisi verum; falsum non nisi ex falso; ex falso quidlibet.
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contradict another statement, he now takes the notion of negating statement in a broader sense, including also statements that are the contrary of another statement, such as 'No man is rational' with respect to 'Man is rational'. Accordingly, he defines a negating statement as a saying which says that what some statement has declared to be the case, is not the case. A negated statement is defined as a statement saying that something of which another saying says that it is not the case, is the case. These two definitions cover contrary as well as contradictory statements. A contradiction, as opposed to a negating statement in the generic sense, is characterized in a third definition as a statement whose dictum consists exclusively (nude) in saying that another statement is false. 'Not every man is white', for example, contradicts 'Every man is white', because the first statement says nothing but that the second statement is false. On the other hand, 'No man is white', the contrary of 'Every man is white', though also saying, as one part of its whole dictum, that 'Every man is white' is false, says something else as well, since it is the antecedent of 'Not every man is white' and as such has a more comprehensive totality of dicta than the whole dictum of its consequent. In other words, the notion of a negating statement comprises not only contradictions, but also the antecedents of contradictory statements which are contraries. It does not, however, comprise the so-called subcontrarys. On Geulincx' view, 'Some men are white' is not properly negated by 'Some men are not white', since the possibility that both statements are simultaneously true is left open.

Besides the three definitions mentioned above, Geulincx puts forward two general principles of being and three special principles of logic of which he is going to make use for the first time in the demonstrations of Chapter III. The first general principle looks like a law of addition for the realm of being: when this is, then this or that is (Cum hoc est, hoc vel illud est). The second general principle states that, when two things are related in such a way that, if one of them is, the other necessarily is not, then the two cannot simultaneously be. As for the special principles, two of them are just variants of the Dicere sequitur esse principle. The third, guaranteeing the validity of the pattern of reasoning 'p or q; if p, then r; if q, then r; therefore, r', is not really new either.

6.2. Among the theorems proved there is one which says that, if the negating statement is true, the negated statement is false, and another one saying that, if the negated statement is true, the negating statement is false. Since Geulincx has already demonstrated that every statement can be negated and that a statement which says that some other statement is false negates that statement, he is then able to prove that every statement negates. For let A be a negating statement and B the statement negated by A. If B is true, A will be false. But B says that B is true, so B also says that A is false (Dicere sequitur esse), which means that B negates A. Therefore, just as A negates B, so B, the negated statement, negates A. Given that contradiction is a species of the genus negating statement, it is equally true that, if not-A contradicts...
A, then A likewise contradicts not-A. Consequently, it is permitted to speak of statements that negate one another and of statements that contradict one another. Further, it is proved that a negating statement and the statement negated by it can both be false (in the case of contraries), but that they cannot be simultaneously true. Moreover, of two statements that negate one another at least one must be false. Let us take the statements A and B, of which B negates A. A is false or A is not false. If A is false, then either A or B is false, in virtue of the first general principle. If A is not false, A will be true and B will be false. But if B is false, then either A or B is false, again in virtue of the first general principle. Therefore, either A or B is false, according to the form of reasoning presented in the third special principle. Along the same lines it is proved that of two statements that contradict one another one must be true. In addition, two statements that contradict one another differ from two statements that negate each other in that, if one of the contradictory statements is false, the other is true; and in that two contradictory statements cannot be simultaneously false.

6.3. Embedded in the wealth of proofs given in Chapter III are demonstrations of two axioms of another square of the logical cube, namely, those of the nineteenth theorem and its corollary. The theorem has it that the contradiction of the antecedent of a given consequence follows from the contradiction of the consequent of that consequence. Suppose that 'If A, then B' is true and let C be the contradiction of A, and D the contradiction of B. Then it has to be proved that D entails C. Previously, in Chapter II, it has been shown that, if B, the consequent of the given consequence, is false, then A, its antecedent, must also be false. And, given that the latter necessary connection holds, that then the dictum that B is false is said by an antecedent and the dictum that A is false is said by a consequent. Now, D, being the contradiction of B, says solely that B is false, which means that precisely that B is false is said by D, which therefore is an antecedent. And C says solely that A is false, which means that precisely that A is false is said by C, which therefore is a consequent. Thus, since D is an antecedent and C its consequent, D entails C, or C follows from D.

The corollary of the nineteenth theorem states that, if from the contradiction of some statement the contradiction of another statement follows, then the first statement will follow from the second statement. Let there be four statements such that C is the contradiction of A, D is the contradiction of B, and D follows from C. Then it has to be proved that A follows from B. Given that D follows from C, D is the consequent of C and C the antecedent of D. Therefore, the nineteenth theorem is applicable: the contradiction of C follows from the contradiction of D. But the contradiction of C is A and the contradiction of D is B, because of the mutual nature of the relation of contradicting. So it may be concluded that A follows from B. Here too, Geulincx observes that at bottom there is only one axiom under different guises. Owing to the special meaning he gives to dicere and to the ensuing mutuality
of the relation of contradicting, it does not matter whether one starts from 'If \( A \), then \( B \)' or from 'If not-\( B \), then not-\( A \)'; in both cases 'If \( A \) d \( B \), then not-\( B \) d not-\( A \)' and 'If not-\( B \) d not-\( A \), then \( A \) d \( B \)' are correct consequences.

Adopting a usage that is to be found in some ancient authors\(^\text{44,45}\), Geulincx calls an argument of the type 'If \( A \), then \( B \); if \( B \), then \( C \); therefore, if \( A \), then \( C \) as a *sorites* (I, 376). Accordingly, he usually refers to the axiom that allows the conversion of the contradictions of a given antecedent and consequent as the foundation of the *conversio soritica* (I, 289-91; II, 46-7). He hails the law of contraposition or *conversio soritica* as his most powerful axiom, on the ground that every axiom, possessing as it does the form of an affirmative consequence, can be converted, provided that the antecedent and the consequent are replaced with their contradictories. In this way, he obtains exactly four axioms for consequence in the square of the logical cube that has been discussed first. On the assumption that '\( A \) d \( B \)' is true, the following consequences are correct:

(1) 'If \( C \) d \( A \), then \( C \) d \( B \)'
(2) 'If not (\( C \) d \( B \)), then not (\( C \) d \( A \))'
(3) 'If \( B \) d \( C \), then \( A \) d \( C \)'
(4) 'If not (\( A \) d \( C \)), then not (\( B \) d \( C \))'\(^\text{44,45}\).

It should be noted that all these axioms are affirmative statements; it is not the consequence as a whole that is negated, but only a component consequence (I, 387). Similarly, in a second square of the cube we now have four axioms for *conversio soritica*:

(1) 'If \( A \) d \( B \), then not-\( B \) d not-\( A \)'
(2) 'If not (not-\( B \) d not-\( A \)), then not (\( A \) d \( B \))'
(3) 'If not-\( B \) d not-\( A \), then \( A \) d \( B \)'
(4) 'If not (\( A \) d \( B \)), then not (not-\( B \) d not-\( A \))'.

### 7. Mutual Implication or Equivalence

7.1. In Chapter IV of the *Methodus*, entitled *De alterna et subalternis* (II, 50-8), Geulincx does not introduce any new axioms, but derives a further set of laws governing consequence and negation. In two definitions he lays down the difference between statements that imply one another and statements which stand in a relation of implication that goes in only one direc-


\(^{45}\) In the *Logica* (I, 377) Geulincx presents the same axioms in a way that resembles the traditional division of syllogisms into figures. He says that (1), '\( A \) d \( B \); \( C \) d \( A \), therefore, \( C \) d \( B \)', constitutes the ordinary first figure of *sortes*, (2) the second figure, (3) the extraordinary first figure, and (4) the third figure.
tion. The former he calls convertibles or alternae, the latter subaltermata. Of the five special principles preceding the proofs of Chapter IV, the first states that two sayings of which one says the whole dictum of the other, say at least something that is the same (Aliquid idem dicunt). The third special principle adds that, if the whole dictum of one saying does not extend beyond the whole dictum of another saying, the latter saying says the whole of what the former saying says. The other special principles have regard to the identity of the dicta of two sayings: if neither of two sayings says something that goes beyond the whole dictum of the other saying, then they say the same, and if they say the same, then each of them says the whole of what the other says.

7.2. After the extensive treatment of consequence in general in Chapter II, Geulincx can be rather brief about cases of non-mutual implication, that is, about statements that have the whole dictum of the implied statement in common but are such that the implying statement also says something that lies beyond that common dictum. He shows that it is possible to construct such pairs: any true consequence in which the antecedent is false and the consequent true will serve as an example. Moreover, he proves that the contradictions of subaltern statements are again subaltermata, provided that the contradiction of the subalternate becomes the subalternans and the contradiction of the subalternans becomes the subalternat.

Considerably more is said about enuntiationes alternat or, as I shall call them, equivalent statements. First of all, Geulincx shows that it is always possible to construct a pair of such statements. Suppose that $A$ is some statement and that another statement, called $B$, says that $A$ is true. Then $A$ and $B$ are equivalent, since $B$ entails $A$ and $B$ is entailed by $A$, as was established in Chapter II. As a corollary, it follows that any statement and another statement which says solely that the first statement is true are equivalent.

Next, it is demonstrated that equivalent statements have the same truth-values; if one is true, the other must be true, and if one is false, the other must be false. Further, since being equivalent is demonstrably tantamount to saying (consequenter) the same, two equivalent statements may be considered as being somehow the same, namely, with regard to their dictum (quoad dictum suum). This kind of identity, which makes it impossible that of two equivalent statements one should be true and the other false, justifies a maxim of substitution: proofs may be considerably shortened by substituting one of a pair of equivalent statements for the other. Elsewhere too (I, 234, 245), Geulincx invokes this notion of dicere aequivalenter or in aequivalenti, which is a special case of dicere consequenter. For example, even though there are numer-

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41 It should be heeded that in Enuntiationes quaecumque, et illa enuntiationes vera, alternae sunt, and in similar contexts, the phrase enuntiationes vera (falsa) means: a statement that says solely that a statement is true (false), or a truth (falsity)-ascribing statement (I, 288, 501; II, 52, 55-7).
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ous statements that do not have the external appearance of a conjunction, yet below the surface every statement is a conjunction in the sense that it says exactly the same as the sum of its logical consequents says. Considered from the viewpoint of dicere aequivalentem, every statement is a conjunctively enumerated whole that contains each of its logical consequents as a part.

The remainder of Chapter IV is devoted to proofs of the equivalence and the ensuing identity of statements of a particular kind. Among them is the demonstration of the thesis that a statement which says that another statement is false and the contradiction of that other statement are equivalent and are, therefore, in that sense identical. Suppose that \( A \) is some statement, that another statement, called \( B \), says solely that \( A \) is false, and that \( C \) is the contradiction of \( A \). Then it has to proved that \( B \) and \( C \) are equivalent. Since \( B \) says solely that \( A \) is false and \( C \), being the contradiction of \( A \), also says solely that \( A \) is false, \( B \) and \( C \) say exactly the same and are thus equivalent and in that sense identical.

8. CONJUNCTION AND DISJUNCTION

8.1. So far, the notion of a conjunctively enumerated whole was brought up only in connection with consequence, inasmuch as every statement is equivalent, and in that sense identical, to the totality of its logical consequents. Chapter V of the Methodus, entitled De copulativa et disjunctiva (II, 59–69), deals with the logical behaviour of statements that are overtly and explicitly conjunctive, and also of statements that are expressly disjunctive. In the first two definitions Geulincx calls attention to the division of wholes in general into conjunctively enumerated wholes (totum actuле) and disjunctively enumerated wholes (totum potentiale). The first type, of the form ‘This and that’, he now calls multitudo, and the second type, of the form ‘This or that’, multiplex. Applying this general division to the special field of statements, he can then define a conjunctive statement as a multitude of statements that is enumerated by means of ‘and’, and a disjunctive statement as a multiplex statement or a set of more than one statement that is enumerated by means of ‘or’. The statements connected by ‘and’ or ‘or’ are the (immediate) parts of a conjunctive or disjunctive statement.\(^{46}\) The definitions are followed by two special principles. The first regards the priority of conjunctive enumeration over disjunctive enumeration: unless an enumeration is explicitly disjunctive, it counts as conjunctive. The second principle states that in a situation where neither this nor that is, it is false that this or that is. Two postulates, finally, guarantee that one is always at liberty to carry out the mental operation of collecting several particular things into a single whole and to enumerate that whole either through ‘and’ or by means of ‘or’.

\(^{46}\) In the Logica (I, 239) Geulincx is careful to draw a distinction between immediate and mediate constituents of a compound statement. There he also adheres to a principle of binary analysis: in the conjunction \( Veni, vidi, vici \), for instance, \( Veni \) and \( vidi \), \( vici \) are the immediate constituents, while \( vidi \) and \( vici \) are only remote parts. This principle is not adopted in the Methodus.
8.2. To begin with, Geulincx shows that in virtue of the first special principle any collection of things is either a conjunctively enumerated whole or a disjunctively enumerated whole. Given that statements are things, it follows that any collection of statements will be either a conjunctive statement or a disjunctive statement. Next, it is demonstrated that a conjunctive statement entails each of its parts. Suppose that $A$ is a conjunctive statement and that $B$ and $C$ are its parts. Then it has to be proved that $A$ entails $B$, and also that $A$ entails $C$. According to the sixth general principle of Chapter 1\textsuperscript{47} it is impossible for one and the same thing to be and not to be; therefore, if $B$ is the case and $C$ is the case, then $B$ is the case. But $A$ says precisely that $B$ is the case and that $C$ is the case; consequently, if $\{B$ and $C\}$ is the antecedent of $B$, then $A$ too is the antecedent of $B$, on the strength of the seventh general principle of Chapter I, to the effect that, if two things are identical, an attribute that belongs to the thing under one name also belongs to it under another name. Along the same lines it can be proved that $A$ entails $C$.

This proof is interesting in that it brings out how very close in Geulincx' view the connection between an antecedent and a conjunction is. Actually, the only difference between them lies in the fact that an antecedent is a covert conjunction that says the whole of each of its parts, whereas an overt conjunction says the whole of each of its parts in a fully explicit manner. What an antecedent says merely consequenter, an explicit conjunction says also formaliter; in both cases the speaker or the linguistic expression he uses is committed to the truth of each part that is included in the conjunctively enumerated whole of those parts. Geulincx himself is careful to point out that disjunctive statements are quite different in this respect, as is shown by the invalidity of such an inference as $A$ or $B$, therefore, $A'$. He is prepared to admit that $A$ is somehow contained in the disjunctively enumerated whole constituted by $\{A$ or $B\}$, but at the same time he emphasizes that something more is required for the notion of containment which he has in mind and which is relevant to his view of consequence. According to him, there is a crucial difference between, on the one hand, $A$ and $B'$ and, on the other hand, $A$ or $B'$ and $\{If A, then B'\}$. In $\{A$ and $B'\}$ the assertive force which $A$ and $B$ will normally have when uttered separately, is fully preserved in the conjunctive combination. That is the reason why someone who asserts $\{A$ and $B'\}$ thereby also commits himself to asserting $A$ and $B$ separately; in a way, he has already asserted them. By contrast, in $\{A$ or $B'\}$ and $\{If A, then B'\}$ the assertive force that $A$ and $B$ would have when uttered separately, is as it were destroyed by the specific manner in which they come to be connected. The only assertive force that remains is attached to the entire disjunctive or conditional statement; consequently, the speaker is not committed to the truth of any component statement in particular. And that means that he may say $\{A$ or $B'\}$ without thereby saying $A$ or $B$ as such ($I$, 240, 247, 277; II, 27). In sum, the notion of containment that is essential to Geulincx' enterprise, is tied to the

\textsuperscript{47} The text refers, mistakenly, to the first general principle of Chapter III.
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concept of asserting, either in the narrow sense of *dicere formaliter* or in the broad sense of *dicere consequenter*.

Once it has been established that the relation between a conjunctive statement and each of its parts is a relation between antecedent and consequent, it is easy to prove that, if a conjunction is true, then each of its parts is true, and that, if any of its parts is false, then the conjunction is false. These proofs are supplemented by demonstrations of the theses that, if all parts are simultaneously true, the conjunction is true, and that, if a conjunction is false, at least one of its parts is false.

In a similar way, Geulincx proves first that a disjunctive statement follows from any of its parts. The proof is based on the first general principle of Chapter III, to the effect that, if this is, then this or that is. Let $A$ be a disjunctive statement and $B$ and $C$ its parts. Then ‘If $B$, then $B$ or $C$’ is true, $B$ being the antecedent and ‘$B$ or $C$’ the consequent. But if $A$ is the same as ‘$B$ or $C$’ and ‘$B$ or $C$’ is the consequent of $B$, then $A$ too is the consequent of $B$. Once it has thus been shown that $B$ (or $C$) and ‘$B$ or $C$’ stand to one another in the relation of antecedent and consequent, it follows that, if any part is true, the disjunction is true, and that, if the disjunction is false, each of its parts is false. Again, these proofs are supplemented by demonstrations of the theses that, if all parts are simultaneously false, the disjunction is false, and that, if the disjunction is true, then at least one of its parts is true.

The results yielded by Chapter V so far already enable us to sum up the axioms of a third square of the logical cube. Following the way of expressing them used in the *Logica* (I, 365-7), we may list them in terms of sufficient and necessary conditions and *conversio soritica*:

1. The truth of all parts is a sufficient and necessary condition of the truth of a conjunction
2. The falsity of a part is a sufficient and necessary condition of the falsity of a conjunction
3. The truth of a part is a sufficient and necessary condition of the truth of a disjunction
4. The falsity of all parts is a sufficient and necessary condition of the falsity of a disjunction.

8.3. The other theses of Chapter V, some of which contribute to the complete proof of axiom (2), are mainly concerned with the interplay between conjunctions and disjunctions. It is proved, for instance, that, if a disjunction has parts which contradict the corresponding parts of a conjunction, the conjunction and disjunction themselves will likewise contradict one another. Suppose that $A$ is the conjunction ‘$B$ and $C$’, that $D$ contradicts $B$ and $E$ contradicts $C$, and that $F$ is the disjunction ‘$D$ or $E$’. If $A$ is true, $B$ and $C$ will be true and $D$ and $E$ false, so that $F$ is false. Therefore, $A$ negates $F$. If $F$ is false, $D$ and $E$ will be false and $B$ and $C$ true, so that $A$ is true. Consequently, $A$ negates $F$ and if $F$ is false, $A$ must be true. But that means that $A$ contradicts $F$ and, since contradiction is mutual, that $F$ contradicts $A$. Further,
a conjunction entails the disjunction that consists of the same parts. The proof hinges on the already demonstrated theses that \('B \land C\) entails \(B\) and that \(B\) entails \('B \lor C\). That \('B \land C\) entails \('B \lor C\) is then true in virtue of one of the axioms concerning consequence. As a corollary, it follows immediately that, if \('B \lor C\) is false, \('B \land C\) will be false. Finally, any disjunction containing parts that contradict one another is true; for two contradicting parts cannot both be false, so that one or the other must be true. And any conjunction containing parts that negate one another is false; for two statements that negate one another cannot both be true, so that one of them must be false.

8.4. Chapter V of the *Methodus* ends the part of Geulincx's treatise that has regard to the logic of unanalysed statements. This logic is a containment theory in the following sense. Geulincx restricts the notion of containment by tying it to the special meaning he gives to the verb *dicere*. By saying or asserting he understands committing oneself not only to the truth of what is uttered formally and explicitly, but also to the truth of everything that logically follows from that utterance and is thus a necessary condition of its truth. Taking this notion of saying, with which every language-user is intuitively familiar from daily practice, as given and primitive, he further elucidates it by the special principles that are variants of the maxim *Dicere sequitur esse*. His concept of saying is such that it ensures the validity of arguments of the type 'He says that this is a piece of marble; if this is a piece of marble, then it is a stone; therefore, he says that this is a stone'. Moreover, this notion of saying also includes negation, both in a broad sense and in the narrow sense of contradicting. Negating is saying that some statement is false, either saying just that or saying something else as well.

With the help of this pregnant notion of saying Geulincx is able to unify the logic of statements round the central concept of consequence. Consequence is a form of containment in that the antecedent says the whole of what the consequent says, so that the whole *dictum* of the consequent is contained as a part in the conjunctively enumerated whole (*totum actuale*) that is the *dictum* of the antecedent. In an implication that goes in one direction only, the totality of the *dicta* of the consequent is included in the whole *dictum* of the antecedent, but the whole *dictum* of the antecedent exceeds the whole *dictum* of the consequent in that the former comprises additional *dicta* of its own. If, on the other hand, the implication is mutual, the whole *dictum* of the antecedent coincides with the whole *dictum* of the consequent, so that the antecedent and the consequent have the same *dictum* and are to that extent equivalent and identical. Both when the antecedent says or contains the whole of what the consequent says as a proper part and when the antecedent says the same as the consequent and thus in a way contains itself, the pertinent relation is transitive. It is precisely on that formal property of transitivity that Geulincx bases the axioms which govern arguments involving several consequences.
While the average antecedent is only equivalently a conjunctively enumerated whole of which each of its consequents is a part, a conjunctive statement has that character in full explicitness. In point of fact, the logical relation between a conjunction and one or more of its conjuncts is nothing but the connection between antecedent and consequent. So the rules governing conjunction can be readily deduced from the rules governing consequence. In this connection it is interesting to note that not only antecedents are disguised conjunctions of all their necessary truth-conditions. According to Geulincx, the same applies to such compound statements as 'I am standing; therefore, I am capable of standing' or 'I am tired because I am running'. They are equivalently conjunctive, as opposed to formally conjunctive, because they can be considered as a conjunction of three necessary truth-conditions: for instance, 'I am standing and I am capable of standing and the latter follows from the former' and 'I am tired and I am running and the latter is the cause of the former' (I, 245-7).

Disjunctive statements, finally, can be brought under the heading of consequence and containment inasmuch as every disjunct entails the disjunctive statement of which it is a part: 'If \( A \), then \( A \) or \( B \)'. This means that any statement says or contains the combination of that statement itself with any other statement that we care to join to it by means of 'or'. Since the combination '\( A \) or \( B \)' is a disjunctively enumerated whole or \textit{totum potentiale}, we might also say that a consequent is always such a \textit{totum potentiale} with respect to its antecedent\(^48\). Once the link between disjunction and consequence has been established, proofs of the axioms for disjunction are within easy reach.

Along these lines Geulincx succeeds in bestowing a remarkable unity upon his treatment of the logic of unanalysed statements, demonstrating its axioms through an uninterrupted chain of scrupulously elaborated proofs in which not even the smallest step is left unaccounted for.

9. SUBJECT AND PREDICATE: PRELIMINARIES

9.1. Chapter VI of the \textit{Methodus}, entitled \textit{De subjecto et prae dicato} (II, 69-80), and Chapter VII, entitled \textit{De prae dicabili et subicitabili} (II, 80-7), are devoted to the logic of terms. Chapter VI prepares the ground for the proofs of the twelve axioms concerning that branch of logic which are offered in Chapter VII. The difference in the titles of the two chapters is significant and has to be explained first. Geulincx notes that the words 'subject' and 'predicate' may be taken in four distinct ways (I, 178-80, 466-7). A potential subject or predicate is a term that is capable of being employed as subject or predicate in a proposition. Substantival and adjectival expressions, as opposed to other parts of speech, are eminently suitable for becoming the subject and the predicate of a proposition, that is, for designating that about which a speaker

\(^48\) Cf. \textit{Annotata ad Metaphysicam}, ed. Land, II, 310: \textit{in consequentia autem antecedens est totum actual
respectu consequentis, et consequens respectu antecedentis totum potentiale.}
wishes to talk and that which he wants to say about it. An actual subject or predicate, on the other hand, is a term that is actually exercising the function for which it is destined. Such actual subjects and predicates may become habitual subjects and predicates when they are frequently combined in more or less stereotyped sayings, such as ‘Man is an animal’ or ‘Water is cold’. These three kinds of subject and predicate have in common that the propositions in which they are capable of occurring or actually occur may be false as well as true. As such they are contrasted with a fourth type, which is by far the most important one for our purposes: a subject or predicate so called per dignitatem or dignitate, that is, because it really deserves that name. As in his logic of terms Geulincx concentrates almost exclusively upon such genuine subjects and predicates, which he also calls subincibile and praedicabile, it is worth our while to have a look at the tradition to which he adheres in taking that particular course.

That tradition originates from some passages in Chapters 2 and 3 of Aristotle’s Categories (1 a 20 – 1 b 16). There a distinction is drawn between being said of a subject and being in a subject. In accordance with Aristotle’s text, medieval authors interpreted the phrase dici de subjecto as referring to a type of predication that is restricted to predicking a genus or specific difference of a species and predicating a species of an individual49. This kind of predication presupposes a hierarchical arrangement of a set of concepts according to degrees of generality, as is to be found in the well-known Porphyrian tree for the category of substance. Concepts that are superior from the viewpoint of comprehensiveness can then be predicated, in the sense required, of subjects that are their inferiors. Such a predication is closely connected to essential predication, as opposed to accidental predication. Melanchthon, for example, regards the following cases as falling under essential predication: when something is predicated of itself, when a species is predicated of an individual, and when a genus or a difference or a whole definition is predicated of a species or an individual50; that is, such propositions as ‘Socrates is Socrates’, ‘Socrates is a man’, ‘Socrates (Man) is an animal’, ‘Socrates (Man) is rational’, and ‘Socrates (Man) is a rational animal’. The only cases

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dthat do not form a predication of a superior with respect to an inferior, are cases of identity\(^51\).

Now there was a strong tendency to consider essential predication as the primary or even the only genuine form of predication. Already in the first half of the twelfth century master Albericus held that the use of the phrase 'being predicated of' ought to be restricted to the predicates of propositions that are universal, affirmative and true. The phrase should not be applied to the predicates of false propositions nor to the predicates of particular affirmative propositions. For in the latter case, illustrated by 'Some animals are men', a less comprehensive term is said of a more comprehensive term, which according to Aristotle and Boethius can never yield a true proposition\(^52\). This doctrine, which restricts genuine predication to a privileged type of proposition, was handed down by several later authors and still adhered to in the first half of the seventeenth century\(^53\). Moreover, this view was held to be pertinent to the validity of the rule stated by Aristotle in Categories, 3, 1 b 10-15: whenever one thing is predicated of another as of a subject, all things said of what is predicated will be said of the subject also\(^54\). The Scotist Nicolaus Dorbellus (or De Orbellis), for instance, comments on Aristotle's rule by explaining that the addition 'as of a subject' restricts its validity to essential predications in which a superior concept is attributed to one of its inferiors. A similar remark is made by the Aristotelian scholar Iulius Pacius\(^55\). In such contexts the word 'subject' becomes synonymous with the word 'inferior', in the sense of something that necessarily falls under a term


\(^{52}\) Cf. *Introductiones Montanæ minores* in L.M. de Rijk, *Logica modernorum*, II, 2, p. 23: *falso praedicarii non est praedicarii; particulariter praedicarii non est praedicarii.*


that has a higher degree of generality. In that sense an individual is a subject or inferior with respect to a species, and a species is a subject or inferior with respect to its genus. From that perspective there is no difference between 'Socrates is a man' and 'Man is an animal'.

9.2. There can be no doubt that Geulincx' logic of terms is firmly rooted in the tradition outlined above; it is only against that background that it becomes fully intelligible. In the Logica he attempts to elucidate the notions of genuine subject and predicate by assimilating them to a peculiar kind of part and whole. As we saw in 5.2., a totum potentiæ, as opposed to a totum actuale, is a disjunctively enumerated whole. The parts comprised by such a whole are called partes subjectivæ. They are of two kinds: parts that are inferiors, such as oak, beech, elm etc. with respect to tree, or Socrates, Plato, Aristotle etc. with respect to man, and parts that are not inferiors, such as soldier, merchant, sailor etc. with respect to man. The distinction is based on the fact that the specific difference that makes a tree an oak can never be an accidental property of something, whereas the formal property that makes a man a soldier may well be an accidental property of some men (I, 193-4, 210).

In general, though, Geulincx concentrates upon potential wholes whose partes subjectivæ are inferiors, in the sense that they are constituted by a combination of a specific difference with a material or determinable element that is provided by the superior concept. In this connection it should be noted that Geulincx considers singular terms or proper names as definable: 'Charles', for instance, is defined as 'this man', in which 'this' contributes the specific difference and 'man' the material element (I, 195, 394, 409). Consequently, terms for individuals are inferiors, though they cannot be superiors. All this presupposes at least implicit knowledge of the way in which a conceptual field is divided and arranged hierarchically according to degrees of generality. A proper division is nothing but a series of steps in each of which a totum potentiæ is split into the exclusive parts that are disjunctively enumerated by it (I, 416). Within the result of such a division a concept can be defined and otherwise determined by means of the relations of superiority and inferiority in which it stands to other concepts of the field in question.

In the light of these considerations about a potential whole and its partes subjectivæ or inferiors it can be seen how the purely formal and abstract scheme of Diagram II becomes applicable to the logic of terms. If the wholes are interpreted as terms that are predicatable of subjects, the four possible relations in which two wholes may stand to one another can be determined by the question as to whether or not two terms are predicatable of the same subject or copredicable, that is, whether or not two potential wholes have one

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56 For a very clear statement of that meaning of 'subject' see Scipion Dupleix, La logique ou art de discours et raisonner (1607), Corpus des oeuvres de philosophie en langue française, Paris, 1984, I, 5, p. 39; V, 14, p. 241. Cf. also Petrus Hispanus, Tractatus, ed. L.M. de Rijk, V, 12, p. 63: "Tutum universale, ut hic sumitur, est superior et substantiale. Pars subjectiva est quod est inferior sub universal."

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or more subjective parts in common. The first possibility is the case in which two predicate-terms, for instance, ‘brute’ and ‘man’, do not have any subject in common; it is impossible to find a subject of which each of those incompatible terms can be truly affirmed (1). Among the cases in which two terms do have a subject in common, there is the possibility that even all the subjects they have are common subjects: such terms, for example, ‘man’ and ‘rational animal’, are called convertibles (2). When two terms do not have all their subjects in common, it is possible that only one of them has subjects of its own, as in the pair ‘brute’ and ‘ox’. Geulincx calls such terms subaltern; the term that has subjects of its own and thus exceeds the other term is the subalternant, while the other term is the subalternate (3). But it is also conceivable that each of the two terms has, in addition to the common part, subjects of its own. The disparate predicates ‘brute’ and ‘biped’, for instance, are both applicable to ‘bird’, but ‘brute’ is also applicable to ‘ox’, of which ‘biped’ cannot be truly affirmed, and ‘biped’ is also applicable to ‘man’, of which ‘brute’ cannot be truly affirmed (4).

Once this application of the abstract Diagram II to the logic of terms has been worked out (I, 202-4, 469-73), it can be shown that only two cases are positively relevant to the restricted notions of subject and predicate. If ‘subject’ is taken in the sense of a subjective part of a potential whole or of an inferior with respect to a superior, it is obvious that no incompatible terms can be related as such a subject and predicate. For if one were the subject of the other as predicate, they would have a part, namely, that subject, in common. Given that ‘Man is a man’ is necessarily true and supposing that ‘Man is a brute’ were true as well, the predicates ‘man’ and ‘brute’ would not be incompatible. Nor can two disparate terms stand in the relation of genuine subject and genuine predicate. For if they did, the subject would have parts that are not parts of the potential whole that is supposed to include it in its entirety. Genuine subjects and predicates, then, are to be found only in cases (2) and (3). As Geulincx concludes, either a subject is a subalternate with respect to the predicate as subalternant or the two are convertibles (I, 206). An example of the first possibility is the proposition ‘Man is an animal’, in which the term ‘man’ is a subjective part or inferior with regard to the term ‘animal’. Any subjective part or inferior of ‘man’ is contained in the potential whole ‘animal’, but the potential whole ‘animal’ comprises more parts than are included in ‘man’, since ‘animal’, as a disjunctively enumerated whole, is tantamount to ‘man or brute’. An example of convertibles as subject and predicate is ‘Man is a rational animal’, in which the potential wholes ‘man’ and ‘rational animal’ completely coincide. In so far as two convertible terms contain one another and their subjects are the same, they may be regarded as identical. It is important to note that on Geulincx’ interpretation of ‘subject’ and ‘predicate’ the fact that one term is a subject and another term its predicate is somehow independent of their being actually connected in an entertained or asserted proposition. The proposition in which they come to be combined by dint of a tenseless copula is
merely a reflection of what they already are on account of the relation in which they stand to one another within the hierarchical structure of a conceptual field.

After thus locating the notions of genuine subject and predicate on the map of Diagram II, we may formulate what in Geulincx' eyes is the cardinal property of a predicate. A predicate contains its subject inasmuch as it is a disjunctively enumerated whole of which the subject is a part. Since a whole also contains itself, this formulation is held to apply equally to cases where the subject and the predicate are convertibles (I, 180). Consequently, every proposition with a genuine subject and predicate is such that the predicate contains the subject. This relation of containment between terms shares an extremely important feature with the relation of containment between statements or their dicta: it has the formal property of transitivity. It is no doubt in order to stress that common feature that Geulincx uses the same words, subalternus, subalternans, and subalternatus, both for statements, when the antecedent contains conjunctively the consequent, and for terms, when the predicate-term contains disjunctively the subject-term; and that in the Logica, though not in the Methodus (II, 50), he uses the same word convertibilis both for equivalent statements and for terms with the same subjective parts (I, 203, 288).³⁷

9.3. As we saw in 5.2., case (4) of Diagram II, in which a pair of wholes has parts in common but each of them has parts of its own as well, is useless as far as consequence is concerned; by disparate statements no combination of truth-values is excluded. The fate of case (4) is somewhat different when Diagram II is applied to the logic of terms. It is true that disparate terms cannot stand to one another in the relation of genuine subject and predicate. Strictly speaking, it is not so that in 'Some brutes are bipeds' the term 'brute' is a subject of the predicate-term 'biped'. What we are entitled to say, however, is that the two terms 'brute' and 'biped' have at any rate some part in common: the beings that fall under the term 'bird'. For both in 'Birds are brutes' and in 'Birds are bipeds' the term 'bird' is a genuine subject of the predicate.

There is, then, a notable difference between such universal affirmations as 'Birds are brutes' and such particular affirmations as 'Some brutes are bipeds'. The universal affirmation has a genuine subject and a genuine predicate, both introduced explicitly as such by the appropriate terms. In the particular affirmation, however, the actual and genuine subject is merely designated by the phrase 'some brutes', but not introduced into the proposition by its own name (I, 460-1, 475). What the particular affirmation conveys is that there exists an unnamed item which is a genuine subject of both the first

³⁷ At the same time Geulincx is careful to distinguish the two varieties of containment by such qualifications as quoad sequelam, penes illationem seu consequentiam, penes 'et' seu copulativa, as opposed to quoad affirmationem, quoad predicacionem, penes affirmationem et disjunctio, penes 'vel' seu distinctio (I, 180-1, 207, 210, 280, 282, 376, 501).
and the second term, or that the first and the second term are copredicable of something left unspecified. In other words, the relation between ‘bird’ and ‘brute’ in the universal affirmation is the relation of a subject being contained in its predicate as one of its parts, whereas the relation between ‘brute’ and ‘biped’ in the particular affirmation is the relation of two predicates having a subject in common. The first relation, of the form ‘The predicate contains disjunctively the subject’, is transitive. The second relation, which for this occasion might be rendered by ‘Term₁ y Term₂’, is non-transitive, but symmetrical: if term₁ and term₂ have a subject in common, then term₂ and term₁ have a subject in common.

9.4. In the Methodus and the Dictata ad Logicam, though not yet in the Logica, Geulincx divides simple statements or propositions into natural and artificial affirmations and negations (I, 460-1, 467, 485, 489-90, 495, 502; II, 91, 93). Affirmations are natural when the subject-term either has no sign of quantity attached to it at all, as in ‘Peter is a man’ and ‘Man is an animal’, or has a sign of quantity attached to it that, from the viewpoint of meaning, is superfluous, as in ‘Every man is an animal’. Natural affirmations, then, comprise singular propositions, indefinite propositions and explicitly universal propositions, always on the understanding that they have a genuine subject and predicate. On that understanding, there is no logically relevant difference between ‘Man is an animal’ and ‘Every man is an animal’. That such an indefinite affirmation as ‘Man is an animal’ is naturally interpreted as a universal proposition is due to the fact that a conjunctive enumeration has priority over a disjunctive enumeration. As the general term ‘man’ is a whole, it should be taken as conjunctively enumerated, in the obvious sense of ‘every man’ (‘this man and that man etc.’), unless that interpretation is expressly overruled by a sign that forces the hearer to take the whole as disjunctively enumerated. Such a sign is ‘some’, for ‘Some men are animals’ is tantamount to the disjunction ‘This man is an animal or that man is an animal etc.’. Consequently, when a speaker wishes to prevent the hearer from taking ‘man’ in the obvious sense of a conjunctively enumerated whole, he must add the mark of particular quantity and say ‘Some men are animals’ instead of ‘Man is an animal’. That is precisely the reason why Geulincx calls particular affirmations artificial propositions. Evidently, in the domain of affirmations the distinction between natural and artificial propositions exactly parallels the distinction between the cases (2) and (3) of Diagram II and, on the other hand, case (4).

Since the affirmation ‘Animals are men’, taken in the obvious sense of ‘Every animal is a man’, is false, its denial ‘Animals are not men’ must be true. But if ‘Animals are not men’ were understood as meaning the same as

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38 Cf. I, 461: In affirmatione autem naturali proprii subiectum et praedicatum reperitur.

39 A rather similar distinction is to be found in Petrus Fonseca, Institutiones dialecticae, Coloniae, 1623, II, 1, p. 60. See also W. Risse, Die Logik der Neuzeit. 1. Band, 1500–1600, Stuttgart-Bad Cannstatt, 1964, p. 364, n. 400.
'No animals are men', it would be false. Therefore, in order to save the truth of what is said – one of the duties of a benevolent interpreter\textsuperscript{60} – the hearer must take ‘Animals are not men’ in the sense of the explicitly particular negation ‘Some animals are not men’. In the case of negative propositions, then, it is the particular negation that is natural. The sign of particular quantity in ‘Some animals are not men’ is superfluous, because even when it is left out the rules of interpretation will guide the hearer to a correct understanding. On the other hand, if the speaker wants to preclude the obvious and natural interpretation, he is obliged to utilize the mark of universal quantity and say, for instance, ‘No men are stones’ instead of ‘Men are not stones’. In sum, on the side of negative propositions, the natural ones comprise such singular propositions as ‘Peter is not a stone’ and such indefinite and explicitly particular propositions as ‘Animals are not men’ and ‘Some animals are not men’, while the artificial ones are such explicitly universal propositions as ‘No men are stones’\textsuperscript{61}.

9.5. In a natural affirmation it is claimed that a genuine predicate, being a disjunctively enumerated whole, contains a genuine subject as one of its parts, or that the predicate and the subject are identical inasmuch as they contain one another. Paradigms of these relations are provided by the operations of division and definition. A divided term is a potential whole that contains each of the dividing members as a proper part, while a divided term is identical with the disjunction of its dividing members, just as a definiendum and its definiens are identical in so far as they contain exactly the same subjective parts (I, 400, 418). The copula of a natural affirmation is a syncategorematic mark destined to indicate that one of those relations obtains between elements of a conceptual field. From the timeless character of such relations between concepts it follows immediately that the copula too has to be free of any reference to time. The reason why Geulincx lays so much stress on the tenseless nature of the copula as a mere mark of affirmation lies in his giving pride of place to the essential predication that is characteristic of the way in which a genuine subject and predicate are related to one another.

\textsuperscript{60} According to the third of the four general maxims of interpretation: \textit{veracem praecessit loquentem, et vera velles profari} (I, 222-4).
\textsuperscript{61} Diagram III

<table>
<thead>
<tr>
<th>Propositions or simple statements are</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>natural</td>
</tr>
<tr>
<td>affirmative</td>
<td>Peter is a man</td>
</tr>
<tr>
<td></td>
<td>(Every) man is an animal</td>
</tr>
<tr>
<td>negative</td>
<td>Peter is not a stone</td>
</tr>
<tr>
<td></td>
<td>(Some) animals are not men</td>
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</tbody>
</table>
Only a tenseless copula is a proper expression of the necessary and eternal truths that have regard to the permanent connections among the elements of an ordered conceptual field. The same applies, in a more derivative sense, to the necessary propositions in which it is claimed that two terms have an unspecified genuine subject in common or that things of a certain kind possess a non-accidental property that can be deduced from their essence, as in ‘Bodies are divisible’.

10. TRUTH AND FALSITY OF SUBJECT-PREDICATE STATEMENTS IN GENERAL

10.1. After this necessary digression, let us return to Chapter VI of the *Methodus*. In that chapter Geulincx does not yet use the words ‘subject’ and ‘predicate’ in the strict sense to which they will be limited in Chapter VII, but rather sets out from letting them have their more general meanings. As he explains in the definitions, the terms that are to be regarded as, respectively, subject and predicate are simply the first and the second term in an affirmation of the type ‘This is that’, or in a negation of the type ‘This is not that’. Further, such a subject and predicate may be either a general term or a singular term. If they are constituted by a general term, such as ‘man’ or ‘animal’, that term may be taken either universally, as in ‘every man’, or particularly, as in ‘some animals’. Now a subject taken universally is a conjunctively enumerated whole or *multitudo* each of whose parts can be made the subject of one and the same predicate in a conjunction of as many affirmations as there are parts. ‘Every man is an animal’, for instance, is tantamount to the conjunction ‘This man is an animal and that man is an animal etc.’. Similarly, a predicate taken universally is a conjunctively enumerated whole each of whose parts can be made the predicate of one and the same subject in a conjunction of as many affirmations as there are parts. ‘Peter is every man’ is tantamount to the conjunction ‘Peter is this man and Peter is that man etc.’. Analogously, a subject taken particularly is a disjunctively enumerated whole or *multiplex* each of whose parts can be made the subject of the same predicate in a disjunction of as many affirmations as there are parts. ‘Some animals are men’ is tantamount to the disjunction ‘This animal is a man or that animal is a man etc.’. *Mutatis mutandis*, the same applies to a predicate that is taken particularly, as in ‘Peter is a man’, which is tantamount to ‘Peter is this man or Peter is that man etc.’. Actually, then, propositions with a general term as subject or predicate are to be counted as compound statements that are conjunctions or disjunctions according as in respect of quantity the general term is taken universally or particularly (I, 243, 251, 261). For Geulincx, there is an intimate connection between the logical behaviour of propositions in which a mark of quantity occurs or is understood and the logical behaviour of conjunctive and disjunctive statements.

By contrast, a subject or predicate is singular when it is just one subject or predicate and there is thus no call to spread it in parts over a conjunction.
or disjunction of more than one affirmation. Examples are the subject and the predicate in such affirmations as ‘Peter is Peter’ or ‘This man is Peter’. Moreover, notwithstanding an outer appearance to the contrary, the subject in ‘A man and a brute are two’ and ‘Some ship or other is needed for navigating’ is singular. For expanding these true propositions into ‘A man is two and a brute is two’ and ‘This ship is needed for navigating or that ship is needed etc.’ would make them false (I, 213-5; II, 72). In Geulincx’ terminology, an enumeration of terms may be expandable (laxa) or unexpandable (pressa); only in the former case can there be a non-singular subject or predicate.

On the basis of the foregoing distinctions it is possible to divide affirmations and negations into different types (I, 480-2; II, 72). A single affirmation (or negation) has at least one singular term as subject or predicate. If both terms are singular, it is a homogeneous (simplex) single affirmation; if only one term is singular and the other general, it is a heterogeneous (composita) single affirmation. And if each of the two terms is general, there is not one single affirmation, but more than one, conjoined either conjunctively or disjunctively. Availing ourselves of the two postulates of Chapter VI, according to which any disjunctively enumerated whole of terms may be written as ‘a or b’ and any conjunctively enumerated whole of terms as ‘a and b’, we have, theoretically, the following possibilities.

(I) One single affirmation:

(i) homogeneous:
    ‘a is a’: ‘This man is Peter’

(ii) heterogeneous:
    (1) ‘a is (a or b)’: ‘Peter is a man’
    (2) ‘a is (a and b)’: ‘Peter is every man’
    (3) ‘(a or b) is a’: ‘Some man is Peter’
    (4) ‘(a and b) is a’: ‘Every man is Peter’

(II) More than one single affirmation:

(5) ‘(a or b) is (b or c)’: ‘Some brutes are bipeds’
(6) ‘(a or b) is (a and b)’: ‘Some man is every man’
(7) ‘(a and b) is (a or b or c)’: ‘Every man is an animal’
(8) ‘(a and b) is (a and b)’: ‘Every man is every man’.

It should be emphasized that this is an exhaustive list of theoretical possibilities. Geulincx is fully aware that some of them are rather bizarre when looked at from the point of view of ordinary usage (I, 252; II, 80).

10.2. The proofs of Chapter VI – to which Geulincx gives a somewhat sketchier shape – are concerned with separating those items of the list which can never be true from the items that are capable of being true, and with laying down the conditions of truth for each member of the latter category. The conditions of truth and falsity for homogeneous single affirmations and negations follow from the general principles of Chapter I which state that everything is what it is and not another thing, and from the definition of contra-
A homogeneous single affirmation is true if the singular terms are the same (in the sense in which convertibles are the same), and false if they are different. A homogeneous single negation is true if the terms are different, and false if they are the same.

Of the four types of heterogeneous single affirmation, (2) and (4) can never be true. For let us take a term, called \(c\), that is not a part of the conjunctively enumerated whole \('a \text{ and } b'\). Then \('c \text{ is } (a \text{ and } b)'\) is expandable into \('c \text{ is } a \text{ and } c \text{ is } b',\) and \('a \text{ and } b \text{ is } c'\) into \('a \text{ is } c \text{ and } b \text{ is } c'.\) Both conjunctions are false, on account of the falsity of each conjunct. But even if the singular term, called \(a\), is a part of \('a \text{ and } b',\) (2) and (4) will be false. For the expansions \('a \text{ is } a \text{ and } a \text{ is } b'\) and \('a \text{ is } a \text{ and } b \text{ is } a'\) are false, because now one of the conjuncts is false. So, any heterogeneous single affirmation in which the general term is taken universally is false. The situation is different with regard to the types (1) and (3). They are false only when the singular term, for instance \(c\), is not a part of the disjunctively enumerated whole \('a \text{ or } b'\); for in that case the expansions \('c \text{ is } a \text{ or } c \text{ is } b'\) and \('a \text{ is } c \text{ or } b \text{ is } c'\) are false, on account of the falsity of both disjuncts. But if the singular term is a part of the potential whole \('a \text{ or } b',\) then the expansions \('a \text{ is } a \text{ or } a \text{ is } b'\) and \('a \text{ is } a \text{ or } b \text{ is } a'\) will both be true, since one of the disjuncts is true. The upshot is that among single affirmations only three types are ever true: \('a \text{ is } a', \text{ 'a is } (a \text{ or } b)'\) and \('(a \text{ or } b) \text{ is } a',\) for instance, ‘This man is Peter’, ‘Peter is a man’, and ‘Some man is Peter’.

As we saw at the beginning of 8.3., if a disjunction has parts that contradict the corresponding parts of a conjunction, the conjunction and disjunction themselves will likewise contradict one another. Hence, the negation \('a \text{ is not } (a \text{ and } b)'\), expanded into \('a \text{ is not } a \text{ and } a \text{ is not } b',\) contradicts \('a \text{ is } a \text{ or } a \text{ is } b',\) which is the expansion of \('a \text{ is } (a \text{ or } b)'\); since the latter is true, the negation \('a \text{ is not } (a \text{ and } b)'\) is false. Likewise, the negation \('(a \text{ and } b) \text{ is not } a',\) expanded into \('a \text{ is not } a \text{ and } b \text{ is not } a',\) contradicts \('a \text{ is } a \text{ or } b \text{ is } a',\) which is the expansion of \('(a \text{ or } b) \text{ is } a',\) because the latter is true, the negation \'(a \text{ and } b) \text{ is not } a'\) is false. Moreover, the homogeneous single negation \('a \text{ is not } a'\) is false; for it contradicts the true affirmation \('a \text{ is } a'.\) Consequently, among single negations only three types are ever false: \('a \text{ is not } a', \text{ 'a is not } (a \text{ and } b)'\) and \'(a \text{ and } b) \text{ is not } a',\) for example, ‘Peter is not Peter’, ‘It is not the case that Peter is any man’, and ‘It is not the case that any man is Peter’. All other types of single negation, being contradictions of false single affirmations, are true.

10.3. Among the statements that consist of more than one single affirmation, the types (6) and (8) are never true. If the subject is taken particularly and the predicate universally, as in \('(a \text{ or } b) \text{ is } (a \text{ and } b)'\), the expansion will be \('a \text{ is } a \text{ and } a \text{ is } b'\) (the first single affirmation) OR \(b \text{ is } a \text{ and } b \text{ is } b'\) (the second single affirmation), which is a false disjunction, because of the falsity of its two component conjunctions. Nor can a statement whose subject and predicate are both taken universally be true. For the expansion of \'(a \text{ and } b) is
(a and b)' will be 'a is a and a is b (the first single affirmation) AND b is a
and b is b (the second single affirmation)', which is a false conjunction,
because of the falsity of its two component conjunctions. On the other hand,
a statement of type (5), in which both terms are taken particularly, is true
when the two terms have a part in common, as in '(a or b) is (b or c)',
which can be expanded into the true disjunction 'a is b or a is c OR b is b or b is
c'. Such a statement will be false, however, if the two potential wholes do not
have any part in common, as in '(a or b) is (c or d)'. Further, a statement
of type (7), in which the subject is taken universally and the predicate partic-
ularly, is true when every part of the subject-term is also a part of the predi-
cate-term; otherwise, it is false. A truth of that type may have the form
'(a and b) is (a or b or c)', which is expanded into 'a is a or a is b or a is c AND
b is a or b is b or b is c'. The expansion is a true conjunction, since each of
the two disjunctions conjoined by 'and' is true. Thus, among statements that
consist of more than one single affirmation, only two types are ever true:
'(a or b) is (4 or c)' or '(a and 4) is (a or 4 or c)'.

In connection with the latter type Geulincx makes a remark that deserves
special attention. He observes that, whenever an affirmation in which the
subject is taken universally and the predicate particularly is true, it may be
put on a par with one single affirmation (affirmatione uni aequiparatur; II, 78).
When, as in 'Every man is a rational animal', the subject and the predicate
have exactly the same parts, namely, the parts that are enumerated conjunc-

tively in 'a and b' and the parts that are enumerated disjunctively in 'a or
b', one might as well say that the two wholes 'a and b' and 'a or b' are singular

terms standing in the relation of identity. And when, as in 'Every man
is an animal', all parts of the subject are included in the predicate but the
predicate has more parts than the subject has, so that the subject may be re-
presented by 'a and b' and the predicate by 'a or b or c', one might as well
say that the relation between the two wholes as such is the same as in the
heterogeneous single affirmation 'Peter is an animal'. Just as the individual
denoted by 'Peter' is a proper part of the potential whole 'animal', so 'a and
b', understood as a singular term for the species 'man', is a proper part of
'a or b or c', understood as a more comprehensive term for the genus 'ani-
mal'. In other words, when the series 'animal-man-Peter, Paul etc.', ordered

descending hierarchically according to the relation of superior to inferior, is given,
we are of course free to analyse the statement 'Every man is an animal' by de-
sending to the lowest level of inferiors, that is, to the individuals that are
the ultimate subjective parts of the wholes 'man' and 'animal': '(a and b) is
(a or b or c)'. But in the present case, where 'man' evidently is a subjective
part or inferior of 'animal' divided as 'man or brute', we might just as well
remain at a higher level of the hierarchy and consider 'Every man is an ani-
mal' as being tantamount to a heterogeneous single affirmation in which it is
claimed that the inferior whole 'man' as such is a genuine subject of the
superior whole 'animal' as a genuine predicate. The naturalness of this sec-
ond course is reflected in Geulincx' view that the mark of universal quantity

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in 'Every man is an animal' is superfluous. For him, the formulation 'Man is an animal' is even more illuminating inasmuch as it brings out more clearly that 'man' as such is a genuine subject of 'animal' as such. In order to understand Geulincx correctly, it is very important to bear in mind that in his opinion there is no real difference between the part-whole relation as it applies to species with respect to a genus and that relation as it applies to individuals with respect to a species or genus. Both an individual man and the whole 'man' as such can be regarded as a part or inferior of the whole 'animal'. The possibility of offering the two analyses of 'Every man is an animal' is not due to our having a choice between two different part-whole relations but simply to the fact that one and the same part-whole relation can be brought to bear upon items that belong to different levels of a conceptual hierarchy. From the viewpoint of this undifferentiated part-whole relation, then, such a statement as '(Every) man is an animal' may be assimilated to a single affirmation of the type 'Peter is an animal', just as, in the other direction, a singular term may, for the purposes of syllogistic reasoning, be put on a par with a general term taken universally (I, 225, 337, 361).

As for statements consisting of more than one single negation, two types are always true, namely, the contradictions of '[(a and b) is (a and b)]' and of '[(a or b) is (a and b)]', both of which are always false, being the cases (8) and (6). The contradiction of '[(a and b) is (a and b)]' is '[(a or b) is not (a or b)]', which is expanded into 'a is not a or a is not b OR b is not a or b is not b'. As the two component disjunctions are true, the whole disjunction is true. The contradiction of '[(a or b) is (a and b)]' is '[(a and b) is not (a or b)]', which is expanded into 'a is not a or a is not b AND b is not a or b is not b'. Since the two component disjunctions are true, the conjunction is true. As we have seen, statements of the types (5) and (7) may be either true or false. Naturally, their contradictions will correspondingly be either false or true. Let us take as an example a true affirmative proposition in which both terms are taken particularly. Then the contradiction of '[(a or b) is (b or c)]' will be '[(a and b) is not (b and c)]', expanded into 'a is not b and a is not c AND b is not b and b is not c'. The expansion is false since, because of the falsity of 'b is not b', the second conjunct is false. On the other hand, the contradiction of the false affirmative proposition '[(a or b) is (c or d)]' is '[(a and b) is not (c and d)]', which is expanded into 'a is not c and a is not d AND b is not c and b is not d'; here the expansion is true, because the two component conjunctions, having true conjuncts, are true.

10.4. The picture that emerges from the foregoing exposition is that of a verificational structure whose foundation consists of basic propositions of the type 'a is a', in which the relationship between the two singular terms is that of identity or mutual containment. Homogeneous single affirmations or negations are the touchstone by means of which subject-predicate propositions of a greater complexity are tested as to truth and falsity. At a first stage this examination proceeds by way of reducing heterogeneous single propositions
to conjunctions or disjunctions of homogeneous single affirmations or negations. The heterogeneous single propositions, which through their singular term already have a foothold in the rock-bottom world of individuals, are expanded into repeated combinations of that singular term with each of the ultimate parts of the general term, so that the immediate constituents of the resulting conjunctions or disjunctions are only homogeneous single propositions. The truth-value of a heterogeneous single proposition can then be established by finding out the truth-values of the basic propositions and applying the rules for conjunction and disjunction as they have been laid down in the logic of unanalysed statements. At a still higher level, where subject-predicate propositions with two general terms are at issue, what is needed is a sort of intertwining of two expansions, one for each general term. The result is more complicated in that the immediate constituents of the final conjunction or disjunction are themselves conjunctions or disjunctions. But as the components of these immediate constituents are only homogeneous single propositions, the route of verification, though a bit longer, is in principle the same.

Lastly, it is worthy of note that in such cases as 'Every man is a rational animal' and 'Every man is an animal' a descent to the ultimate parts of the general terms is an unnecessary detour inasmuch as the part-whole relationship is already sufficiently evident at the level of the general terms themselves. Hence, for the purposes of logic, they may be put on a par with homogeneous or heterogeneous single affirmations.

11. THE LOGIC OF GENUINE PREDICATIONS

11.1. The second of the four general principles with which Geulincx opens Chapter VII of the Methodus is a special case of the seventh general principle of Chapter I. The latter states that, even if one and the same thing is referred to by different names (or by tokens of the same name), an attribute that belongs to the thing under one name also belongs to it under the other name. Now suppose that 'a' and 'b' are distinct names of the same thing. Since a has the attribute of being identical with a, b too has the attribute of being identical with a. So, if a is the same as b, b is the same as a; in other words, the relation of identity is symmetrical. The other general principles have regard to the part-whole relation. The first states that a part of a part of a whole is also a part of that whole (Pars partis est etiam pars totius). If a finger is a part of a hand and the hand is a part of an arm, then the finger is a part of the arm. In modern terminology, the part-whole relation is transitive. According to the third general principle, when this is a part of that, the latter is a whole with respect to the former; and according to the fourth general principle, when this is a whole with respect to that, the latter is a part of the former. The expressions 'part' and 'whole' are correlative, or the converse of the relation 'x is a part of y' is the relation 'y is a whole with respect to x'.
As we have seen, out of the theoretically possible types of a subject-predicate proposition in general Geulincx had carefully selected five kinds that are capable of being true: ‘a is a’, ‘a is (a or b)’, ‘(a or b) is a’, ‘(a or b) is (b or c)’, and ‘(a and b) is (a or b)’ or ‘(a and b) is (a or b or c)’. In order to make that selected group still smaller, so as to obtain precisely those propositions which are going to be taken into account in Chapter VII, Geulincx now eliminates the possibility ‘(a or b) is a’, of which ‘Some man is Peter’ would be an example. He does so by first defining the notion of an orderly affirmation (affirmatio ordinata). As he explains in the Logica (I, 229, 252, 265), the order required by the sense of a proposition is as follows: genuine subject-tenseless copula-genuine predicate. The reason is that in such a proposition as ‘Gold is a metal’ the subject is a part of the predicate and ‘gold’ stands to ‘metal’ in the relation of inferior to superior; and it was felt that the inferior ought to precede the superior. Now in propositions of the type ‘Some man is Peter’ that natural order has been disturbed by putting the superior term ‘man’ in the subject-place and the inferior term ‘Peter’ in the predicate-place; therefore, it is a disorderly proposition (propositio inordinata). In the Methodus Geulincx defines an orderly affirmation as a single affirmation in which the subject is a singular term. This definition excludes ‘Some man is Peter’, but embraces such propositions as ‘Peter is this man’, and ‘Peter is a man’, and also ‘Man is a rational animal’ and ‘Man is an animal’ inasmuch as they can be put on a par with, respectively, a homogeneous and a heterogeneous single affirmation. Next, a genuine predicate (praedicabile) is defined as the predicate of a true orderly affirmation, and a genuine subject (subiectibile) as the subject of such an affirmation. In this way Geulincx obtains exactly the category of natural affirmations and the notions of genuine predicate and subject which he elsewhere reaches by different routes.

In the third definition copredicable terms (termini concordes) are said to be potential wholes that have a part in common. This definition is put forward in view of such artificial affirmations as ‘Some brutes are bipeds’, in which the genuine subject of the two terms is left unspecified. Copredicable terms are contrasted with incompatible terms (termini repugnantes), which according to the fourth definition are potential wholes that do not have any part in common. Lastly, the expression ‘being said of’ (dici) is defined as going to be used in the sense of being the predicate in a true affirmation, whether single or not. That sense lies somewhere between the stricter sense of ‘genuine predicate’ and the broader sense of ‘predicate’ as it refers to any term that occupies the second place in ‘This is that’.

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11.2. In the first five theorems Geulincx proves that, if and only if a term is either identical with its subject or a potential whole of which the subject is a part, it is a genuine predicate; that, if and only if a term is either identical with its predicate or a part of the predicate as a potential whole, it is a genuine subject; and that the expressions 'genuine predicate' and 'genuine subject' are correlative, or that the converse of the relation 'x is a genuine predicate of y' is the relation 'y is a genuine subject of x'. At this point already, he is able to demonstrate the four axioms that guarantee the validity of syllogisms consisting entirely of natural affirmations or negations. One axiom states that, if something is the genuine subject of the genuine subject of a genuine predicate, it is also the genuine subject of that predicate; for instance, 'Man (a) is an animal (b); Peter (c) is a man; therefore, Peter is an animal' or 'A metal is a body; gold is a metal; therefore, gold is a body'. Let us abbreviate 'genuine subject' by the letter 'S' and 'genuine predicate' by the letter 'P'. Then it is assumed that a is S of b as P and that c is S of a as P; and it has to be proved that c is S of b as P. For the second premiss there are two possibilities: c is identical with a or c is a part of the potential whole a. If c is identical with a, and a has the attribute of being S of b, then c also has that attribute of being S of b. If, on the other hand, c is a part of the potential whole a, then we have to take account of two possibilities for the first premiss: a is identical with b or a is a part of the potential whole b. If a is identical with b, and a has the attribute of including c as a part, then b too has that attribute, so that c is S of b. If a is a part of b, then, since c is a part of a, c is a part of b, in virtue of the transitivity of the part-whole relation; so in this case too c is S of b. Since all the alternatives lead to the same outcome, it may be concluded that c is S of b as P. In this proof the two varieties of the relation of being S of P, namely, the case that S is identical with P and the case that S is a proper part of P as a potential whole, are taken as fundamental. In the Logica (I, 180-1) Geulincx sets out from a relation of containment that comprises both varieties, and then gives a simpler proof: if something is contained in some S that itself is contained in P, then it is contained in P (Si enim aliquid continentur in contento (subiecto), etiam continebitur in continente (praedicato)). As both the relation of identity and the part-whole relation are transitive, they may as well be fused into one relation of containment which embraces identity as a special case. Yet another formulation of the axiom would then be: if P contains S and S contains a third term, called c, then P contains c.

In the proof of a second axiom it is shown that, if b is P of a as S and a third term, called c, is P of b, then c is also P of a as S; for example, 'Man (a) is an animal (b); animals are sentient (c); therefore, man is sentient' or 'Gold is a metal; a metal is a body; therefore, gold is a body'. For since c is P of b, b is S of c. But a is S of b. So, according to the previous axiom, a is S of c, and c is P of a. This axiom may also be formulated as follows: if P contains S and a third term, called c, contains P, then c contains S. Actually, by permuting the premisses and interchanging letters, the two axioms are re-
ducible to one another. In this respect and from the viewpoint of abstract structure in general, there is a remarkable similarity of form between these axioms and the axioms concerning consequence (5.3.). ‘If P contains S and c contains P, then c contains S’ corresponds to ‘If A d B and C d A, then C d B’, while ‘If P contains S and S contains c, then P contains c’ parallels ‘If A d B and B d C, then A d C’. Whether the relation of containment is applied to statements, in the sense of saying (consequent), or to terms, in the sense in which a genuine predicate includes a genuine subject, in both interpretations it is its purely formal property of transitivity that guarantees the reliability of the main axioms.

From the positive axioms, which govern syllogisms consisting entirely of natural affirmations, it is easy to deduce two further axioms for syllogisms involving also natural negations. On the assumption that P contains S, one step of conversio soritica or contraposition (6.3.) yields ‘If c does not contain S, then c does not contain P’ and ‘If P does not contain c, then S does not contain c’. Together, the four axioms account for the validity of the syllogisms that are traditionally known under the names Barbara, Bocardo, Faleton, and Baroco. Counterparts of Barbara are ‘Man is an animal; animals are sentient; therefore, man is sentient’ and ‘Man is an animal: Peter is a man; therefore, Peter is an animal’. A counterpart of Bocardo is ‘Man is an animal; (some) men are not oxen; therefore (some) animals are not oxen’. Since, as will be shown later, ‘No man is an ox’ implies ‘(Some) men are not oxen’, the foregoing syllogism remains valid when the second premiss is strengthened to ‘No man is an ox’ (Faleton). A counterpart of Baroco is ‘Man is an animal; (some) stones are not animals; therefore, (some) stones are not men’. The only difference between the traditional forms and Geulincx’ versions lies in the fact that sometimes a permutation of the premisses is called for. Understandably, Geulincx insists that a properly formulated syllogism always has an affirmative first premiss. In fact, he wants to replace the familiar Aristotelian definition of a syllogism with one that he holds to be more perspicuous: a syllogism is an argument in which first two terms are combined in an affirmative proposition, and then from the affirmative or negative combination of a third term with one of those initial terms a similar combination of that third term with the other of the initial terms is inferred (I, 339; II, 100).

11.3. Before proving the axioms that govern those types of syllogism which involve artificial propositions, Geulincx demonstrates the four axioms of another square of the logical cube, namely, those accounting for the so-called immediate inferences of conversion and subalternation in the logic of terms.

\[\text{Compare the formulations for predication and for consequence in the Logica (I, 181, 281):} \]

\[\text{quad contentet continens, continet etiam contentum eius in quo continens, in eo contineretur et contentum et si}
\]

\[\text{einit aliquid continetur in contento (subjecto), etiam continetur in continente (prae dicato) quad continetur}
\]

\[\text{in contento, continetur etiam in continente.}\]
The first axiom for conversion states that two affirmations in which both terms are taken particularly and which differ only in that the terms have been transposed, are equivalent. As we saw at the end of 9.3., the two affirmations — for instance, 'Some brutes are bipeds' and 'Some bipeds are brutes' — might be considered as having the forms ‘T₁ y T₂’ and ‘T₂ y T₁’. What Geulincx actually shows is that the relation of having a part or subject in common is symmetrical. If one statement is true, the other must be true, and vice versa, so that they imply one another and thus are equivalent. The second axiom for conversion, to the effect that two negations in which both terms are taken universally and which differ only in that the terms have been transposed, are equivalent, follows as a corollary. The contradiction of 'Some brutes are bipeds' is 'No brutes are bipeds' and the contradiction of 'Some bipeds are brutes' is 'No bipeds are brutes'. But in Chapter IV it was proved that the contradictions of equivalent statements are likewise equivalent.

Next, Geulincx shows that whatever is said truly (dictum) of a subject taken universally is said truly of that same subject taken particularly. Suppose that ‘(a and b) is c‘ — for instance, 'Every man is an animal' — is true; then it has to be proved that ‘(a or b) is c‘ — ‘Some men are animals’ — is likewise true. The expansions are, respectively, ‘a is c and b is c‘ and ‘a is c or b is c‘; and, as was demonstrated previously, a conjunction implies a disjunction that consists of the same parts. As a corollary it follows that whatever is negated of a subject taken universally is negated of that same subject taken particularly. For if ‘(a and b) is c‘ implies ‘(a or b) is c‘, then the contradiction of ‘(a or b) is c‘ implies the contradiction of ‘(a and b) is c‘, in virtue of conversio soritica. But the contradiction of 'Some men are animals', for example, is 'No man is an animal' and the contradiction of 'Every man is an animal' is 'Some men are not animals'.

11.4. Finally, Geulincx comes to the axioms of the last square of his logical cube. First, he proves three preliminary theses: one to the effect that 'Man is an animal' is tantamount to 'Every man is an animal', the second to the effect that copredicable terms can always be said truly of one another provided that each of them is taken particularly, while the third theorem states that, if a predicate is a potential whole of its subject, the subject can always be said truly of the predicate taken particularly. This third thesis justifies the so-called accidental conversion of terms; according to it, 'Man is an animal', for instance, implies 'Some animals are men'. The axioms that are the foundations of all syllogisms involving one or two artificial propositions can be divided into two groups. The first group comprises two axioms that again set out from a single affirmation to the effect that one term is a genuine subject of another term as genuine predicate. One axiom states that, if a predicate is a potential whole of its subject, whatever is predicated, as a third term, of the subject will also be said truly of the predicate taken particularly; for instance, given that man (a) is an animal (b), then, if man is rational (c),
some animals are rational. Let \( b \) be a potential whole of \( a \), and let \( c \) be \( P \) of \( a \). Then it has to be proved that \( c \) is said truly of \( b \) taken particularly. Well, \( c \), being \( P \) of \( a \), is either identical with \( a \) or a potential whole of \( a \). If \( c \) is identical with \( a \), and \( b \) is the potential whole of \( a \), then \( b \) is likewise the potential whole of \( c \), so that \( c \) is \( S \) of \( b \). Therefore, in virtue of accidental conversion, \( c \) is said truly of \( b \) taken particularly. If, on the other hand, \( c \) is a potential whole of \( a \), and \( b \) is a potential whole of \( a \), then \( c \) and \( b \) are copredicable terms; again, therefore, \( c \) will be said truly of \( b \) taken particularly. Later Geulincx also proves that the axiom still holds when, in the second premiss, the third term is said truly of the subject taken particularly, as in ‘Brutes are animals; some brutes are bipeds; therefore, some animals are bipeds’. The second axiom is then established by a step of applying conversio soritica to the second premiss and the conclusion. If, given that \( a \) is \( S \) of \( b \), ‘\( a \ y c \)’ entails ‘\( b \ y c \)’, then, given that \( a \) is \( S \) of \( b \), ‘Not (\( b \ y c \))’ entails ‘Not (\( a \ y c \))’; for example, ‘Man is an animal; no animals are stones; therefore, no men are stones’. Similarly, if, given that \( a \) is \( S \) of \( b \), ‘\( c \) is \( P \) of \( a \)’ entails ‘\( b \ y c \)’, then ‘Not (\( b \ y c \))’ entails ‘Not (\( c \) is \( P \) of \( a \))’; for example, ‘Man is an animal; no animals are stones; therefore, (some) men are not stones’. Together, these two axioms account for the syllogisms that used to be referred to by the names Darapti, Celarent, Cesare, Camestres, Celaront, Cesaroop, and Camestrop. The traditional forms of these syllogisms are reducible to Geulincx’ versions, on the understanding that premisses may be permuted and that the terms in ‘\( T_1 \ y \ T_2 \)’ and ‘Not (\( T_1 \ y \ T_2 \))’ may be converted.

The second set of axioms consists of two laws that govern syllogisms which, in Geulincx’ arrangement, begin with an artificial affirmation, to the effect that two terms have a subject in common. The positive axiom states that, given two copredicable terms, whatever is said truly of one taken universally, is said truly of the other taken particularly, as in ‘Some brutes are bipeds; every biped is capable of walking; therefore, some brutes are capable of walking’. Suppose that \( a \) and \( b \) are copredicable terms and that \( c \) is said truly of \( b \) taken universally. Then it has to be proved that \( c \) is said truly of \( a \) taken particularly. Let \( d \) be the common subject of \( a \) and \( b \). According to an auxiliary thesis demonstrated prior to the current proof, \( c \) is said truly of \( d \) because \( c \) is said truly of \( b \) taken universally, that is, of each part or subject of \( b \). But \( d \) is also a subject of \( a \), and \( a \) a potential whole of \( d \). Therefore, according to the first axiom of the first group, because \( a \) is a potential whole of \( d \) and \( c \) is said truly of \( d \), \( c \) is said truly of \( a \) taken particularly. The other axiom, to the effect that, given two copredicable terms, whatever is negated of one taken universally is negated of the other taken particularly, follows by conversio soritica applied to the second premiss and the conclusion. If, given that \( a \) and \( b \) are copredicable, ‘Every \( b \) is \( c \)’ entails ‘\( a \ y c \)’, then, given the copredicability of \( a \) and \( b \), ‘Not (\( a \ y c \))’ entails ‘Not (every \( b \) is \( c \))’; for example, ‘Some brutes are bipeds; no brutes are rational; therefore, (some) bipeds are not rational’. The two axioms of the second group are sufficient to account for the syllogisms called Daris, Datisi, Disamis, Ferio, Festino, and Ferison, on the same understanding as before.
12. CONCLUSION

12.1. Of the three squares of the logical cube that have regard to the logic of terms, the four axioms concerning the immediate inferences of conversion and subalternation are important chiefly inasmuch as they facilitate the proofs of other theses; they hardly yield any worthwhile patterns of reasoning of their own. The core of the logic of terms lies in the eight axioms that direct the mediate inferences of a syllogistic cast. Evidently, the way in which Geulincx develops the theory of the syllogism is markedly different from the traditional approach. As first premisses he admits only affirmations; in doing so he remains faithful to his motto that affirmation is the root of logic (I, 175). In six axioms the first premiss is a natural affirmation, while in the other two it is an artificial affirmation. The distinction between natural and artificial propositions is also the criterion for dividing the eight axioms over two squares. One square comprises the four axioms governing syllogisms that do not involve any artificial propositions, whereas the other square contains the axioms for syllogisms in which one or two artificial propositions occur. Once the affirmative first premiss has been propounded, a third term is introduced and combined in a certain way with one of the terms of the first premiss, and from that combination, together with the first premiss, it is then concluded how the same third term is to be combined with the other term of the first premiss. Restricting ourselves to the four positive axioms — from which the others are deducible by conversio sortitica — and taking containment in the twofold sense of being a potential whole of a subject and being identical with the subject, the effects of bringing in the third term against the background of the first premiss may be summarized as follows.

I. The first square, in which the first premiss states that P contains S:

(1) the third term (T₃) is contained in S; therefore, T₃ is contained in P.

(2) P is contained in T₃; therefore, S is contained in T₃.

II. The second square

a) with the same first premiss:

(3) S is contained in T₃; therefore, P and T₃ contain a common subject. Or S and T₃ contain a common subject; therefore, P and T₃ contain a common subject.

b) with a first premiss stating that T₁ and T₂ contain a common subject:

(4) T₂ is contained in T₃; therefore, T₁ and T₃ contain a common subject.

The positive axioms of the first square rest entirely on the transitivity of the relation of containing, and of the converse relation of being contained in, as applied to genuine subjects and genuine predicates in natural affirmations. This is the logician's paradise. The positive axioms of the second square introduce into it the non-transitive but symmetrical relation of containing a
common subject, as expressed in artificial affirmations in which a mark of particular quantity is called for. Obviously, the heart of Geulincx’ theory of the syllogism is the notion of containment. To this central part he then adds the law of contraposition or *conversio sorsitica* from the logic of unanalysed statements and the subsidiary laws of conversion and subalternation concerning terms. So equipped, he has no difficulty in showing that his three squares of axioms are complete in the sense that they account for all the elementary patterns of reasoning that were held to fall under the logic of terms. Moreover, he claims that his axioms do so in a unified and perspicuous way that is far superior to the traditional manner of dealing with the same material.

12.2. As we saw in 11.2., there is a striking similarity between Geulincx’ treatment of syllogisms that are based on the transitivity of the relation of containment and his way of formulating the laws of consequence. The two positive axioms for antecedent and consequent are ‘If *A* contains (in the sense of saying consequenter) *B* and *B* contains a third statement *C*, then *A* contains *C*’ and ‘If *A* contains *B* and *C* contains *A*, then *C* contains *B*’. Mutatis mutandis, we may describe the effects of introducing the third statement *C* against the background of the first premiss that *A* contains *B* as follows.

1. The third statement *C* is contained in *B*; therefore, *C* is contained in *A*.
2. *A* is contained in *C*; therefore, *B* is contained in *C*.

Taking into account that Geulincx seeks to develop his logic from the central notion of consequence (2.2.), we may conclude that the heart of his logic of unanalysed statements is again the notion of containment, as it is there applied to antecedent and consequent, and the formal property of transitivity peculiar to it. From there he proceeds by introducing *conversio sorsitica*, which gives rise to the other axioms for consequence, and by elaborating the special case of identity in the sense of mutual implication. Lastly, he adds the axioms according to which a conjunctive statement entails each of its parts and a disjunctive statement follows from any of its parts. As we saw in 8.2., these latter axioms may be held to be about a relation of consequence in which the antecedent is an overtly conjunctive statement and the consequent one of its parts, or in which the antecedent is some statement and the consequent an overtly disjunctive statement including that antecedent as a part.

The twelve axioms that are put forward in connection with consequence, contraposition, conjunction and disjunction direct elementary arguments whose ultimate constituents are statements. The axioms of consequence pertain to soritical reasonings belonging to the logic of propositions. The axioms for contraposition direct the different types of *conversio sorsitica* and also the indirect hypothetical syllogism (or *modus tollendo tollens*). In Geulincx’ eyes, the only difference between ‘If he thinks, he exists; therefore, if he does not exist, he does not think’ and ‘If he thinks, he exists; he does not exist; therefore, he does not think’ lies in the fact that in the first version the two conditionals,
but not their parts, are asserted, whereas in the second version the condition-
al, the second premiss and the conclusion have assertive force. Further, ac-
cording to Geulincx, the patterns of argument directed by the axioms for
conjunction and disjunction are too simple to be of much use in disputation;
these axioms rather pave the way for demonstrations of other theorems. He
points out, however, that the disjunctive syllogism (or *modus tollendo ponens*)
and the conjunctive syllogism (or *modus ponendo tollens*) which were taken for
granted in Chapter I as special principles (4.1.) reappear now as elementary
forms of reasoning governed by the axioms of conjunction and disjunction.
That is obvious for such disjunctive syllogisms as 'Either Peter is a man or
Peter is a brute; Peter is not a brute; therefore, Peter is a man'. As for con-
junctive syllogisms, for instance, 'It is not the case that both Peter is a man
and Peter is a brute; Peter is a man; therefore, Peter is not a brute', they are
undoubtedly valid but easily reducible to disjunctive syllogisms. For 'It is
not the case that both Peter is a man and Peter is a brute' is equivalent to
'Either Peter is not a man or Peter is not a brute' (I, 373).

Inasmuch as the elementary patterns of reasoning mentioned above are,
together with the syllogistic forms of argument, the backbone of public dis-
putations, the axioms that direct them may be considered as being complete.
In this connection it is worthy of note that among the elementary forms of
reasoning which have to be accounted for by the axioms Geulincx does not
reckon the direct hypothetical syllogism (or *modus ponendo ponens*). In his opin-
ion, such arguments as 'If I think, I exist; I think; therefore, I exist' exhibit
a manifest redundancy in that the same consequence is put forward twice.
For him, the only difference between 'If I think, I exist' and 'I think; there-
fore, I exist' lies in the circumstance that the first statement is purely condi-
tional, with an unasserted antecedent and consequent, whereas the second
statement asserts, in addition to the same consequence, both that I think and
that I exist. The validity of the direct hypothetical syllogism rests, not on the
axioms, but on repetition and in the last instance on the general principle
of identity (3.1.).

12.3. From the foregoing exposition it may be concluded that for Geulincx
the key notion in developing both the logic of unanalysed statements and the
logic of terms is the relation of containment. In the logic of unanalysed state-
ments this relation is interpreted as a special kind of saying: a speaker, or the
statement he uses, is committed to the truth, not only of what is said explicit-
ly, but also of the conjunction of all sayings that follow from the statement
expressed and thus are necessary conditions of its truth. In the logic of terms
the relation of containment is understood as the relation in which a genuine
predicate as a potential whole stands to its parts as genuine subjects. Derived
from this relation is a further relation between two potential wholes that
contain a common subject. In both branches of logic the core of the axioms
that serve as foundations of elementary forms of reasoning is based on the
formal property of transitivity that is peculiar to the relation of containment;

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and also, in the logic of terms, on the symmetrical character of the relation of containing a common subject. Apparently, Geulincx saw the two branches of logic as different interpretations and developments of one and the same abstract scheme picturing the purely formal relations that may obtain between two wholes with respect to their parts. By taking that bold step of abstraction he succeeded in giving a remarkable unity to the theory of logic in its entirety, at least in so far as it applies to reasonings that yield what he considered to be genuine scientific knowledge.
Can a Mental Proposition Change its Truth-Value?
Some 17th-Century Views

In the first half of the 17th century the Aristotelian view that the same statement or belief may be true at one time and false at another and, on the other hand, the conception of a mental proposition as a fully explicit thought that lends a definite meaning to a declarative sentence originated a lively debate concerning the question whether a mental proposition can change its truth-value. In this article it is shown that the defenders of a negative answer and the advocates of a positive answer argued on the basis of different notions of what a mental proposition is: one side taking it as more or less equivalent to a specific utterance-meaning and the other side as more or less equivalent to a generic sentence-meaning.

1. Introduction

1.1. According to Aristotle, *Categories*, 5. 4 a 10–b 19, only a primary substance is able to receive contraries while remaining numerically one and the same. One and the same individual man, for example, may become pale at one time and dark at another, and hot and cold, and bad and good. As a possible objection against the thesis that this feature is uniquely characteristic of substance he considers the case in which the same statement (*lógos*) or belief (*dóksa*)—for instance, that somebody is sitting—is true at one time and false at another. In Aristotle's opinion, even if one were to grant this, there is still a difference in the way contraries are received. Substances are able to receive contraries by themselves undergoing change, whereas statements and beliefs themselves remain completely unaltered in every respect, the only thing that changes being the state of affairs which makes them successively true and false. The part of this passage that is of special interest for our purposes is the view that even a belief can change its truth-value; that view is repeated, at least with regard to contingent states of affairs, in *Metaphysics*, IX, 10, 1051 b 13–15. In both passages, however, Aristotle refrains from specifying the sense of 'the same' that applies to the statements and beliefs concerned. Whereas such places as *Topics*, I, 7, and *Metaphysics*, V, 6 and 9, make it clear that he has fully aware of the different uses of the expression 'the same', and although in the case of substances he explicitly characterizes the identity as numerical, the kind of identity ascribed to statements and beliefs is left vague.

It is not easy to see how the doctrine that the same belief may be true at one time and false at another, which could invoke Aristotle's authority, is to be reconciled with the complex of considerations that led philosophers, especially from the beginning of the 14th century onwards, to highlight the notion of a mental proposition, as opposed to spoken and written propositions. One of the reasons why the introduction of a mental proposition was felt to be necessary was the need to make explicit precisely all those aspects of a proposition that make a difference with respect to truth and falsity and to logical consequence. A
mental proposition was commonly taken to be the utterance-meaning which a speaker has in mind when he produces a declarative sentence on a particular occasion and which the hearer grasps when he succeeds in understanding what the speaker intends to convey to him. Since that utterance-meaning is supposed to contain exactly those factors which determine the truth-value of the proposition, it turns out to be impossible that the same mental proposition, in the sense of a definite utterance-meaning, should be true at one time and false at another, for the simple reason that the difference in time would automatically yield a difference in utterance-meaning.

Obviously, then, there was a potential controversy between those philosophers who identified the mental proposition with the utterance-meaning of a spoken or written declarative sentence and followers of Aristotle who adhered to the view that the same belief can be true at one time and false at another and were inclined to equate at least some mental propositions with that kind of belief. One episode in which this issue gave rise to some interesting debates is the first half of the 17th century. I shall first briefly outline the surroundings in which the problem as to whether or not a mental proposition can change its truth-value became prominent at that time.

1.2. Durandus of Saint-Pourçain, a 14th-century author who was still very influential in the 17th century, had defended, in his commentary on Peter Lombard's *Sentences*, a notion of truth according to which it is nothing but a relation of conformity of a thing as it is apprehended by the predicating intellect with that same thing as it really exists in the world (*relatio eiusdem ad se ipsum secundum esse intellectum et esse reale*). 1 This conception of truth as being an identity of a state of affairs as it is put before the mind with the state of affairs as it is a part of the extramental world was rejected by Franciscus Suarez (1548–1617), in his *Disputationes metaphysicae* of 1597, and also by the authors who will be mentioned in the following pages. For Suarez, the primary bearer of truth is not the conceived state of affairs, but rather the act of cognition itself or the judgment of the intellect that is compared to the object of cognition in the manner of something that represents and something that is represented (*comparatur cognitio ipsa seu indicium intellectus ad rem cognitam in ratione repraesentanis et repraesentati*). 2

Next, in the second section of the eighth disputation, Suarez goes on to discuss the question of the nature of the conformity that is the truth of an act of cognition: whether it is something absolute in the act itself or something relative. He himself espouses the view that the truth of a cognition does not add anything real and intrinsic to the act itself, but that it merely connotes an object that is indeed such as it is represented to be by the act. And one of the arguments he adduces for this relative and accidental nature of truth is the alleged fact that the truth-value of an act of cognition changes when the object changes, without any intrinsic change thereby taking place in the act itself (*quia mutato obiecto, mutatur veritas cognitionis, et tamen non mutatur ibi aliquid intrinsecum actui*). As others denied that a mental proposition can change its

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1 Durandus a Sancto Porigiano 1574, I, Distinctio 19, Quaedstio 5, fol. 66 R. See also Nuchelmans 1983, pp. 17–20.
2 Suarez 1616, Disputation 8, Sectio 1, p. 175.
truth-value without thereby itself undergoing intrinsic change, the scene was set for a debate to which several 17th-century thinkers made acute contributions.

1.3. In order to discern sharply the core of the issue, it is, first of all, necessary to keep in mind that the proposition on which the debate was focused is a mental proposition in the sense of an act of cognition or a judgment (cognitio, actus cognoscendi, iudicium), sometimes taken together with its content, which was called the obiectum formale, as opposed to the obiectum materiale, the extramental state of affairs toward which the act of cognition is directed. That a spoken or written proposition or the mental image of such a conventional proposition can change its truth-value was usually taken for granted. Further, in accordance with Aristotle, *Metaphysics*, IX, 10, 1051 b 13–15, the question of a possible change of truth-value was limited to contingent mental propositions, as distinct from necessarily true or necessarily false ones. In addition, among contingent mental propositions a distinction was drawn between abstractive and intuitive cognitions. In the latter sort the cognition is caused by an object that actually exists and is immediately given to the mind, which distinctly represents it with full determinateness of details. It was generally agreed that such an intuitive cognition cannot change its truth-value, so that the debate was concentrated on contingent mental propositions that are abstractive in the sense of lacking such a complete fit between the content of the act of cognition and its intended object in the extramental world. Examples of abstractive contingent mental propositions about which opinions differed are such thoughts as are expressed by 'Peter is running' (*Petrus currit*) or 'John is writing' (*Ioannes scribit*), that is, by singular statements containing a verb in the present tense but lacking an explicit and definite indication of time.

With regard to such propositions two problems in particular were discussed. The first problem concerns the question as to whether an abstractive contingent mental proposition that happens to be true might just as well have been false, or vice versa. Some authors, among them Petrus Hurtadus de Mendoza (1578-1651) and Theodorus Smising (1580-1626), gave a negative answer to this question, on the ground that truth is an absolute and essential perfection of an act of cognition, so that when a cognition happens to be true, it cannot possibly be conceived of as being false. It is obvious that these authors *a fortiori* denied that the same proposition may be true at one time and false at another. By contrast, philosophers who regarded truth and falsity as relative and accidental properties of a proposition and thus offered a positive answer to the first question found themselves faced with the second problem, as to whether the same abstractive contingent mental proposition can be true at one time and false at another. Concerning this second problem—to which I shall confine myself here—two opposite views were maintained. The position defended by Suarez was adopted also by, for instance, Bartholomaeus Mastrius (1602-1673), Franciscus Bonae Spei (1617-1677), and Johannes Caramuel Lobkowitz (1606-1682). Their view was opposed by, among others, Raphael Aversa (1588-1657), Rodericus de Arriaga (1592-1667), Franciscus Oviedus (1602-1651), and Johannes Poncius (1603-1672/3). I shall first summarize the considerations which led the latter group to deny the possibility of a change in truth-value.

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3 Hurtadus de Mendoza 1617, Disputatia 9, Sectiones 3—5, pp. 824—829; Smising 1624-1626, I, Tractatus 3, Disputatia 1, Quaestio 2, pp. 323—327.
2. A mental proposition cannot change its truth-value

2.1. Those philosophers who deny that the same mental proposition can be true at one time and false at another clearly take such a mental proposition as is expressed by the sentence *Petrus currit* as the particular utterance-meaning that the speaker has in mind on a certain occasion of use. Such a specific meaning is supposed to be fully explicit and determinate as far as the subject, the predicate, and the time of the event are concerned. As to the time that is indicated by the present-tense verb there are on this view only three possibilities. The speaker may mean that the event takes place at the very moment of utterance; or during a whole stretch of time for which the proposition is intended; or at one or another moment belonging to a definite period. In each of these cases the truth-conditions of the proposition are quite unambiguous. If the very moment of utterance is meant, the truth or falsity of the proposition depends upon the answer to the question whether Peter is indeed running at that moment. If a whole stretch of time is meant, every part of it must be a moment at which Peter is running. And if one or another moment of a period is meant, there must be at least one moment at which he is running. Now it is evident that for any moment on which the truth of the proposition depends Peter either is running or is not running. Therefore, given that the mental proposition necessarily includes a definite idea of the time intended, once it has been found to be true for that time it will always be true, and once it has been found to be false for that time it will always be false. Since the indication of time is an essential feature of the signification of an act of cognition, it is impossible for the same mental proposition to have regard to different circumstances of time.\(^4\)

It is not difficult to see that the main argument for denying the possibility of a change in truth-value was derived from the conception of a mental proposition as a specific utterance-meaning. Some additional considerations will be set forth in connection with criticisms brought forward against the views of the other camp. Meanwhile, some attention must be paid to two difficulties with which adherents of a negative position saw themselves confronted.

2.2. The first difficulty may be illustrated by two examples given by Arriaga.\(^5\) Suppose that the proposition *'Peter will be running'* (*Petrus currit in instanti*) continues to exist until the moment at which Peter is running is present or has become past. Then that proposition will turn out to be false, since it says that Peter will be running whereas at the moment concerned it is not the case that he will be running but rather that he has been running or is currently running. Consequently, the same proposition which at one time is true becomes false at a later time. Another example is the article of faith expressed by *'Christ will be born'* (*Christus nascetur*). Suppose that a Jew forms that proposition before the birth of Christ and that it lasts until after the birth of Christ; then after being true it becomes false.

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\(^4\) Hurtadus de Mendoza 1617, I.c., p. 827; Aversa 1623, Quaestio 24, Sectio 7, pp. 530–531; Arriaga 1669, VI, Disputatio 4 logica, Sectio 2, pp. 233–234; Oviedus 1640, II, De anima, Controversia 7, Punctum 2, pp. 125–126; Poncianus 1649, *In librum De interpretatione*, Disputatio 19, Quaestio 3, Conclusio 1, pp. 270–271.

\(^5\) Arriaga 1669, I.c., p. 233, p. 237. See also Hurtadus de Mendoza 1617, I.c., pp. 829–831; Oviedus 1640, I.c., p. 126; Mastrius 1646, Disputatio 10, *De enuniatione*, Quaestio 2, Articulus 2, pp. 774–775.
In order to deal with this kind of counter-example, Arriaga points out that both in the case of propositions and in the case of states of affairs being about the past, being about the present, and being about the future are extrinsic denominations. Thus the affirmation of Peter’s running at time A is called a proposition about the future before the arrival of A; when it continues to exist at A, it is called a proposition about the present; and if A has gone by, it is called a proposition about the past. Saying that a proposition is about the past is equivalent to saying that the state of affairs concerned existed before its formation; saying that it is about the present is the same as saying that the state of affairs is coexistent with its formation; and saying that it is about the future is equivalent to saying that the proposition exists at some time earlier than the state of affairs concerned. So the characteristics ‘prior’, ‘posterior’, and ‘coexistent’ are partly intrinsic and partly extrinsic and are capable of varying without there taking place any change in the subject thus characterized.

Now it was held that this future–present–past series of temporal indications applies only to spoken and written propositions. As far as the conventional expressions of thoughts are concerned, it would indeed be wrong to say for instance ‘Peter will be running at time A’ when A is already present or past. But in the mind there are no such indications of time. The mental proposition that is concomitant with the utterance ‘Peter will be running’ says only that Peter’s running takes place at a time that lies in the future with respect to the first moment at which the proposition is formed. Once true, that mental proposition remains true even when the moment of Peter’s running has become past, in the same manner as it is now true to say that with respect to Adam’s existence David’s existence lies in the future. In cases where the utterance contains a definite indication of time, as in ‘Peter will be running at time A’, the mental proposition signifies only that Peter’s running is coexistent with A. And once true, that remains true even when A has gone by, because the running is always affirmed for that fixed moment; just as an image of the crucified Christ is at present a true image, because although at present Christ is not being crucified, the image represents Christ not for this moment but for the time at which he was crucified. In the same vein, the article of faith expressed by ‘Christ will be born’ affirms only that Christ is born at a moment that is later than the first moment of formation; taken in that sense, it will always be true. Or the article of faith may be understood as importing only the coexistence of the birth of Christ and the moment destined by God for that event. In that sense, too, it retains its truth-value for ever. As Mastrius puts it, the characterizations of past and future are accidental to it, because they belong to it, not as it is considered in itself, but as it is related to parts of time that precede its formation or come after it (quia solum enuntiat coexistentiam nativitatis Christi et temporis a Deo determinati, cuj accidentus respectus praeteriti et futuri, qui conveniunt illi, non in se considerato, sed ut ordinem dicit ad partes temporaneas praecedentes et subsequentes).

Similarly, Oviedus explains the fact that in the case of the mental proposition

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6 Mastrius 1646, l.c., p. 775. Compare Thomas Aquinas, Summa theologiae, I, Quaestio 14, Articulus 15, ad tertium: Antiqui nominales dixerunt idem esse enuntiabile, Christum nasci, et esse nascitum, et esse natum: quia eadem res significatur per haec tria, scilicet nativitas Christi. For the doctrine of the 12th-century nominales, which Thomas considers to be false, see Nuchelmans 1973, pp. 180 ff.
expressed by 'Peter is running now' (*Petrus currit nunc*) the truth-value remains constant, by a difference in behaviour between conventional words and internal concepts. Some conventional words have different meanings when they are uttered in different circumstances. The word 'now' for instance, uttered at the present, signifies the definite moment A which is signified by the corresponding concept. When however the concept and the conventional word are repeated at a later moment, the concept retains the same signification, having as its *represented object* the *same moment* A that is then past and was present when that concept was first formed; but the conventional word 'now' will no longer signify the moment A which it signified before and which in the meantime has become past, but rather that moment which then actually exists, namely, a moment C or D that comes mediately or immediately after A. Therefore, the word 'now', which corresponded to the internal concept at the first moment A when the concept was formed, does not correspond to it any more at the second moment, because the word has changed its signification, while the concept has retained the same signification.  

2.3. The second difficulty that faced those philosophers who denied the possibility of a change in truth-value was the fact that such authoritative thinkers as Aristotle and Thomas Aquinas seemed to be of a different opinion. Most of them were sufficiently worried by the thought of a possible divergence to seek an interpretation of *Categories*, 5, 4 a 10–b 19, which would make that passage more or less compatible with their own view. In general, these attempts are not very successful. Arriaga's contention that Aristotle is speaking of conventional propositions, not of a mental proposition, is patently false. Others, for instance Aversa and Poncius, held that Aristotle's remarks about the statement or belief that somebody is sitting do not stand for his own settled opinion but are of a purely hypothetical nature: even if such a statement or belief were true at one time and false at another, there would still be a difference with regard to substances. But this interpretation is hardly consonant with *Metaphysics*, IX, 10, 1051 b 13–15. Finally, Säming suggests that Aristotle, instead of meaning a statement on the object-level, which indicates one definite time and is therefore always true or always false, has in mind an act of higher-level reflection concerning such a statement in which it is realized that it can be compared to its object with respect to different times and thus be successively in agreement or disagreement with reality. Säming shows at least some appreciation of the possibility that the whole debate hinges on a difference of opinion concerning the kind of cognition or mental proposition that is taken as its central point. Let us, therefore, go on to consider the position of those philosophers who by a cognition or a mental proposition apparently intended something different from an utterance-meaning.

3. Suarezian arguments for the possibility of a change in truth-value

3.1. As we saw in 1.2., Suarez supported his view concerning the relative and accidental nature of truth by invoking Aristotle's observation that the same

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7 Ovidus 1640, 1.c., p. 126.
8 Arriaga 1669, 1.c., p. 237.
9 Aversa 1623, 1.c., p. 531; Poncius 1649, 1.c., p. 270.
10 Säming 1624–1626, 1.c., p. 326. See also Maestrius 1646, 1.c., p. 770.
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statement or belief may be true at one time and false at another. In addition, he points to the indubitable fact that in the case of spoken sentences and their mental images the same proposition which is first true may later become false through a change in what is signified, but without any change in the sign and its signification. According to him, it is therefore not implausible to embrace a similar view for imperfect and abstractive cognitions, namely, that the same judgment can change from true to false without itself thereby undergoing any intrinsic change. The reason is that the time which we conceive of and signify by means of the copula is neither indivisible nor fully determinate, but somehow indifferent and vague and consequently having a latitude which makes it possible that in one part of that succession the object of the cognition is such and such and in another part is different. Suarez draws an analogy with an indefinite statement of the type ‘A man is walking’, which remains unaltered whether it is made true by one individual or by another. In its vague subject-concept of something that is general and conceived of indefinitely the indefinite proposition includes somehow a multitude of individuals, each of which is sufficient for its truth. Therefore, although those individuals vary, truth can remain in the same vague concept; only if all individual men were to fail to satisfy the predicate would there be no truth at all. According to Suarez, the same can be said with respect to the time or duration that is conceived of in a vague manner; for a proposition or cognition can be characterized as indefinite also in this respect. Such a proposition, then, may be compared to different parts of time and sometimes found to be true and sometimes to be false, without itself undergoing any change, but solely by a change of object.

Smising is not impressed by this analogy with indefinite statements. First, he remarks that the analogy does not really support Suarez’ view. For even if with respect to the time consignified by the copula in ‘Socrates is running’ there were an indefiniteness comparable to that brought about by the subject-term in ‘A man is walking’, it will still be the case that once Socrates is found to be running at one or another moment of some period of time, the statement to that effect will always be true. But Smising’s main objection is directed against the idea that ‘Socrates is running’ is indefinite and vague because of the time consignified by the copula. In his opinion, there are no propositions of that type because the copula does not have regard to an indistinct kind of time but always consignifies the present time in a determinate fashion (negando istam ‘Socrates currit’ esse indefinitam et confusam ex parte temporis consignificai, quoniam determinate tempus praesens consignificat).

Clearly, Smising is basing his criticism on a conception of a cognition or mental proposition as being the meaning of a declarative sentence used on a particular occasion by a speaker who wants to convey fairly explicit and determinate information. By contrast, Suarez appears to be referring to a judgment or mental proposition in the sense of what, in opposition to utterance-meaning, may be called sentence-meaning. In so far as a competent user of a certain language has a practical knowledge of the semantic potentialities of its elements, he is aware that for instance the present-tense verb in such sentences as ‘Socrates is running’ or Socrates currit is capable of being employed to refer to a moment that is identical with the time of utterance. From that perspective,
a mental proposition may be taken, not as the specific thought that the speaker and the hearer have in mind on a particular occasion of use, but rather as a complex of generic semantic features that can be understood in abstraction from special contexts and situations. That Suarez was trying to elucidate and defend his thesis by appealing to that kind of cognition or mental proposition is also made clear by the arguments from analogy that other philosophers brought forward.

3.2. It was common doctrine that in contingent matters an indefinite statement, such as *Homo currit*, is equivalent to a particular statement, in this case *Aliquis homo currit*. It was only natural, then, that a similar argument as Suarez constructed on the analogy with indefinite statements was also based on particular statements. Hurtadus de Mendoza, for instance, informs us that his adversaries held that just as *Aliquis homo currit* signifies human individuals in a vague manner, so *Petrus currit* signifies various instances of the present time in a vague manner (sicut ‘Aliquis homo currit’ significat vage individua humana, ita ‘Petrus currit’ significat vage varias temporis praesentis differentias). Oviedus, too, mentions this argument as an objection to his own position. The mental proposition *Aliquis homo currit* was said to be indifferent towards signifying Peter or John as running; for as such it does not signify Peter rather than John. Similarly, the same mental proposition can be indifferent with regard to diverse significations for diverse points of time; therefore, at one moment it can be true because of one signification and at another moment it can be false because of another signification (ergo eadem proposito mentalis potest esse indifferentis ad diversas significationes pro diversis temporibus: ergo potest in hoc instante ratione huius significationis habere veritatem et in alio ratione alius significationis falsitatem habere). A mental proposition in the sense of a sentence-meaning is presented here either as an act of thinking vaguely of different particular things (significare vage) or as a chameleon-like thought that takes on different specific appearances when confronted with different circumstances (indifferens ad diversas significationes pro diversis temporibus).

Both Oviedus and Arriaga denied that the analogy has any probative force, on the ground that ‘Some man is running’ is not indifferent towards signifying such diverse states of affairs as are expressed by the singular propositions ‘Peter is running’ and ‘John is running’. According to them, ‘Some man is running’ is only neutral with respect to different verifications, inasmuch as it may be verified just as well by John’s running as by Peter’s running. But as a particular proposition it always has exactly the same disjunctive meaning, namely, that either Peter or John or etc. is running, which is either permanently true or permanently false. Even when Peter is actually running at the moment I utter ‘Some man is running’, I do not thereby determinately assert that Peter is running.

3.3. Arriaga, Oviedus, and Poncius mention also a slightly different argument from analogy that was adduced by their opponents. When I say ‘The men who are in the market-place are running’ (*Hominis qui sunt in foro currunt*), that proposition signifies Peter if he is in the market-place; but if Peter had not been

12 Hurtadus de Mendoza 1617, l.c., p. 828.
13 Oviedus 1640, l.c., pp. 126-127. See also Arriaga 1669, l.c., p. 236.
there, but John had been there, it would have signified, not Peter, but John. Therefore, the same proposition is indifferent towards signifying this or that individual and consequently also towards signifying this moment rather than that moment; thus, it can change its signification and signify at one time the moment A and at another the moment B, so that it can change from true to false (ergo eadem proposition is indifferent ad significandum vel hoc vel illud objectum, ergo et ad significandum hoc instans potius quam illud, ergo potest mutare significa-tionem; ergo in uno instanti poterit significare instans A, in alio vero instans B, et sic etiam potest transire de vera in falsam). 14

According to Arriaga, however, the proposition ‘The men who are in the market-place are running’ always signifies all men, but only conditionally, namely, if they are in the market-place. As such it is equivalent to the statement ‘If Peter is in the market-place, he is running; if Anthony is there, he is running; and so forth for the others’. Whenever the proposition is uttered, it always signifies the same men and in the same conditional way, but it never signifies any particular person unconditionally. The same proposition cannot signify absolutely what it first signified only conditionally; for then it would alter its signification and therefore its essence. All that can be claimed is that the conditional statement is verifiable by any individual in so far as he is in the market-place and indeed is running.

Oviedus agrees with this reply, except that in his opinion Arriaga’s version of the equivalent conditional proposition has the unwelcome property of being true even if nobody is in the market-place. In order, therefore, to preserve the existential import that the statement ‘The men who are in the market-place are running’ will normally be assumed to have, he proposes the more adequate form ‘There are some men in the market-place and they, whoever they are, are running’ (Aliqui homines sunt in foro, et hi, quicumque illi sunt, currunt). In later editions of his Cursus philosophicus Arriaga approves of this proposal, but adds that the only point he wanted to emphasize was the fact that the statement ‘The men who are in the market-place are running’ cannot determinately signify Peter or John in particular.

3.4. Finally, advocates of the view that a mental proposition may be true at one time and false at another pointed to certain analogies with a law and an act of contrition. Suppose that there is a law of the form ‘All those who are citizens of Prague must pay tax’. Then the same law may oblige different people at different times according as they happen to be citizens of Prague. For the law as such mentions only the general criterion (ratio communis) of being a citizen of Prague, so that individual persons may at one time satisfy that criterion and at another time fail to satisfy it, and accordingly be or not be obliged to pay tax. Similarly, a proposition that as such has regard only to the present time in general can without undergoing any change now signify this moment and later another moment, because each of those moments successively satisfies the notion of present time (Ergo similiter propositio, quae per se solum respicit tempus praesens, quia sine mutatione sui nunc est praesens hoc instans, postea vero illud, poterit nunc hoc instans significare, postea vero aliud solum, et sine mutatione sui nunc esse vera, postea falsa, vel e contrario).

14 Arriaga 1669, l.c., pp. 236-237. See also Oviedus 1640, l.c., p. 127; Poncius 1649, l.c., pp. 270-271.
The same conclusion was drawn from the example of an act of contrition by which somebody declares himself to be willing to do everything that is necessary to his salvation. The act of contrition as such has regard only to the general criterion of being indispensable to salvation; therefore, if confession happens to fall under that notion, one should confess, but if it were the case that confession was not necessary to one's salvation, there would be no such obligation.

These arguments from analogy were criticized most extensively by Arriaga. First of all, he interprets the act of contrition as a conditional willingness to do everything prescribed by God, for example, to confess if that is what God wants. In order to arrive at an absolute or unconditional duty to confess, an additional datum is needed, from outside as it were, namely, that confession is indeed one of the things which are necessary to salvation. In itself an act of contrition has no intrinsic relation to confession rather than to its negation; nor does it ever formally become an absolute willingness to do anything in particular. One can say only that from the conditional act of contrition, together with the extrinsic premiss to the effect that confession is indispensable to salvation, another, absolute and distinct willingness to confess may be derived. Applying Arriaga's view of the matter, which can easily be adapted to the law about paying tax, to propositions, we may formulate it as follows. A conditional statement always has the same signification and therefore cannot change its truth-value. Though the conditional statement itself can never take on the form of an absolute statement, a different, unconditional statement is deducible from it, according to a pattern of reasoning that may be represented by 'If P, then Q; P; therefore, Q'. Along these lines, such a proposition as 'Peter is running at the present moment', taken as a sentence-meaning, would be interpreted by Arriaga as a complex of conditional statements: 'If A is the moment of utterance, Peter is running at A; if B is the moment of utterance, Peter is running at B; and so forth'. As such this statement can never take on the signification that Peter is running at for instance the determinate moment A. The unconditional statement 'Peter is running at A' is an altogether different statement, which can be inferred from the conditional statement by adding an extra premiss, namely, that A is the moment of utterance. We might also say that the generic sentence-meaning, that is, the meaning of the sentence 'Peter is running' which a competent user of the language grasps in abstraction from any context and situation, combined with knowledge about the circumstances of a particular use, yields the specific utterance-meaning that is associated with 'Peter is running at the moment A'. On Arriaga's account, there is not one identical mental proposition that at one time is true and at another false, but two different propositions, one conditional and one absolute, each with its own constant meaning and unchanging truth-value.

Further, Arriaga's criticism was aimed at those of his adversaries who held that such a proposition as 'Peter is now running' (Petrus nunc currit) signifies in actu signato the present as such and in actu exercito or materialiter those determinate moments A or B which happen to be present at the time of utterance or formation. Arriaga elucidates the distinction in actu signato/in actu exercito through several examples, one of which is a situation in which I touch a piece of cloth under which different persons are successively placed. In that case

15 Arriaga 1669, l.c., pp. 233-234; Oviedus 1640, l.c., p. 127; Poncius 1649, l.c., p. 270; Bonae Spei 1652, Logicae Tractatus 7, In libros De interpretatione, Disputatio 1, Dubium 6, p. 170.
I am in continuous contact with numerically the same piece of cloth as that which I am actually and in the first instance touching \((\text{in actu signato})\), whereas Peter and Paul, who are successively placed under it, are touched only secondarily and indirectly, namely, in so far as each of them happens to be under the piece of cloth \((\text{in actu exercito or materialiter})\). Now, according to Arriaga, an application of this distinction is appropriate only when that which is signified \((\text{in actu signato})\) and that which is signified \((\text{in actu exercito})\) are really distinct things, like the piece of cloth and the individuals Peter and Paul. But since in reality there are only particular moments of time, A, B, etc., and no such entities as the past or the present or the future in general, with respect to time the distinction is simply out of place. That there is some abstract and general now which remains numerically the same while different particular moments of time successively fall under it, is equally implausible as that there is an abstract and general this man \((\text{hic homo})\) or Peter that would remain numerically the same while different individual men who happen to pass are indicated by that expression. That people are tempted to assume the existence of an abstract and general now of which particular moments are instances is due, Arriaga suggests, to the fact that all those moments which are successively present are named by the same word ‘now’ or ‘present’. In fact, however, those words have the same multiplicity of signification as ‘this man’ and ‘Peter’: they can be employed to refer to a different entity on every occasion of use.

Arriaga’s aversion towards positing general and abstract entities probably explains also his preference for a conditional interpretation of the isolated proposition ‘Peter is running at the present moment’, namely as ‘If A is the moment of utterance, Peter is running at A; if B is the moment of utterance, Peter is running at B; and so forth’. The conditional version is more clearly in agreement with his conceptualism in that the suggestion of an extramental world that contains abstract temporal items has disappeared.

4. Other elaborations of the Aristotelian position

4.1. A most acute advocate of the thesis that a contingent mental proposition about the present can change its truth-value is Bartholomaeus Mastrius. In order to gain a proper understanding of the way he pleads his case, it is necessary to bear in mind the distinction between the \(\text{obiectum formale}\) and the \(\text{obiectum materiale}\) of a cognition. The formal object is the content of the act of cognition, that which makes the cognition a claim associated with peculiar conditions of satisfaction. What the cognition is, its being \((\text{entiias})\) or substance \((\text{substantia})\), depends upon its formal object. On the other hand, the material object is the state of affairs or situation in the outside world with which the cognition is in agreement or disagreement. Thus, it is upon the material object that the truth or falsity of the act of cognition or mental proposition depends. As a consequence, the formal object of an act of cognition may remain unaltered while the material object, and so the truth-value, of the cognition changes.

Furthermore, Mastrius draws a distinction between a cognition whose formal object contains an explicit and determinate indication of time, such as ‘at the

16 For other applications of the distinction see Nuchelmans 1988 and Rosier 1992.
moment A' or 'during a whole hour', and cognitions of the type 'Peter is running'. In the latter the mind pays explicit attention only to the inherence of the predicate in the subject, without actually thinking of a definite time at which that state of affairs obtains. Since however a finite verb is supposed to consignify time, the hearer is given to understand, through the tense of the verb, that there is a time at which the predicate belongs to the subject, but that time is consignified only in an implicit, indistinct, vague, indeterminate, abstractive way (implicite, confuse, vage, indeterminate, abstractive). Illustrating the difference with respect to place, we may also say that a verb of action like 'burns' in 'The fire burns' implies that the fire burns at some place or other. Nevertheless, when the fire changes its place, that proposition, in contrast to the more explicit proposition 'The fire burns at this place' (Ignis in hoc loco comburit), would not undergo any change, because there is no explicit mention of a definite place in the formal object, although of course there is a definite place in the material object. Analogously, the proposition 'Peter is running' consignifies moments of time only as they successively coexist with the proposition that remains in the mind, coming up one after the other and independently of one another (partes temporis . . . solum consignificantur secundum coexistentiam illam successivam, quam dicunt ad propositionem in intellectu permanentem, et consequenter una post aliam consignificatur et independenter ab alia). Therefore, if Peter's running is the case at one point of time and not at another point, the proposition will be true at one moment and not at the other, yet remaining the same proposition, since the variation in time does not bring about any change in the formal object.

Plainly, on Mastrius' account the mental proposition expressed by 'Peter is running' is a generic sentence-meaning, containing an act of thinking of an indeterminate and vague part of time to which a specification is given whenever that identical proposition is confronted with a material object or situation involving a definite time as one of its constituents. On every particular occasion of use it is the situation in the outside world that confers various specifications on the identical vague content or formal object in which these possibilities are left open. The definite temporal elements in the concrete situations on which the truth or falsity of the proposition depends, come from outside and do not affect the intrinsic nature of the cognition and its formal object. Mastrius' tour de force consists precisely in bringing directly and head-on together a mental proposition that contains only a vague and indeterminate indication of time, and a situation in the world that fills in the corresponding definite time, without inserting a new mental proposition in the sense of an utterance-meaning that becomes the actual bearer of truth or falsity.

Against those philosophers who maintain that a proposition of the type 'Peter is running' has an unchanging truth-value once it has been found to be true or false for some time or for the duration of a whole period Mastrius contends that the conditions of truth which are usually considered to be characteristic of particular and universal propositions do not apply to that kind of proposition when it is taken in the sense he attaches to it. When I say 'Some man is running' or 'Every man is running', I have in mind a set of men of which each member can become a truth-maker in either a disjunctive or a conjunctive descent. By contrast, the vague and indeterminate time that is consignified by 'Peter is running' is not a whole of which all the parts are before the mind simultaneously, but rather a successive whole (totum successivum) of which the
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parts are given only as they present themselves to the mind one after the other and independently of one another. Therefore, with respect to the time indicated by ‘Peter is running’ no disjunctive descent to individual moments is possible in the same way as a descent from a general term to the specimens that fall under it is feasible and normal. In fact, the vague and indeterminate time consignified by a present-tense verb has the character of something that is conjoined rather than of something that is disjoined and divided (potius ut copulatum quoddam consignificatur, quam ut quoddam disgregatum et divisum). That does not mean, though, that a conjunctive descent, of the type that is applicable to ‘Every man is running’, would be appropriate. The conjunctive feature that is peculiar to ‘Peter is running’ might rather be elucidated by a multitude of categorical propositions each containing a definite indication of time, assembled without any conjunctive connective or, if they are connected by ‘and’, connected, not as all true at once, but as successively true (debet quasi explicari per plures categoricas absque aliqua coniunctione, vel si coniunguntur per copulam ‘et’, non coniunguntur ut simul omnes verae, sed successive). Consequently, neither the rule of disjunctive descent nor the rule of conjunctive descent applies to the time that is vaguely consignified by a present-tense verb.

4.2. Franciscus Bonae Spei, who in the main follows Mastrius, concedes that the proposition Ioannes scribit may be taken in such a way that it has an unchanging truth-value. Either it means that John is writing at a certain moment, in which case it will be constantly true if John is writing at that moment, even if he is not writing at other moments. Or it means that John is writing at the moment of utterance and at future moments during a certain period; if John is writing at all those moments, the proposition will likewise be unchangingly true. But Bonae Spei denies that these interpretations are the only ones possible. There is a third way of understanding Ioannes scribit, which he characterizes as follows.18 That proposition signifies that John is writing at this moment for now, or for this moment, and conjunctively at this moment for then, or for those moments which will successively come up in the future, when they will be present (supponit enim et significat Ioannem scribere . . . hoc instanti pro nunc, sive pro hoc instanti, et copulative hoc instanti pro tunc, sive pro instantibus successive futuris, quando erunt praesentia). Or, as he puts it in slightly different words: Ioannes scribit signifies a multitude of moments successively and in a conjunctive manner, namely, in such a way that at this moment it signifies nothing else for this moment than that John is writing at this moment; and that at this moment it signifies that John is writing for future moments, for the first future moment when that is there, and for the second future moment when that is there, and so on for the other future moments (significat successive plura instantia copulative, iūa scilicet, ut hoc instanti pro hoc instanti nihil aliud significet quam Ioannem scribere hoc instanti; hoc instanti vero pro instantibus futuris significet Ioannem scribere, et instanti primo futuro, quando est, et instanti secundo futuro, quando est, et sic de aliis). Now, if John is writing at this moment, the proposition Ioannes scribit is true at this moment for this moment, even though he may not be writing at one of the future moments when that has become present; for the proposition does not signify those future moments for now or for this moment.

18 Bonae Spei 1652, l.c., pp. 170—171.
and the proposition is therefore in agreement with the entire material object which at this moment it signifies for this moment. On the other hand, the proposition at this moment also signifies for then those moments which will successively appear in the future, so that it will be false if at one of those moments when it is there John is not writing, since for that moment it will be in disagreement with the entire material object which it then signifies.

Arriaga, who discusses Bonae Spei’s view rather extensively, creates the impression of being unable to make sense of it.19 Still, for a sympathetic interpreter it is not so difficult to see that Bonae Spei is offering a somewhat modified version of the position that had been defended by Mastrius a few years earlier. At any time the proposition *Ioannes scribit* signifies in a peculiar kind of conjunction all moments at which it is formed or may be formed successively. On every particular occasion of use, however, its claim has regard to precisely that specific moment of formation and its truth or falsity is decided by the agreement or disagreement with the material object to which it happens to be related at that moment. It should be noted that the members of the set of points of time do not figure in the formal object in so far as they exist as individual items in themselves; in that case there would be a different formal object and thus a different cognition for each specific moment. Rather, the points of time are taken in the quite general sense of moments that coexist with the formation of the proposition and are represented by it as successively corresponding to John’s writing. However, since in reality the moments that correspond to a formation of the proposition are not always moments at which John is writing, the same proposition with an unchanged formal object or content may be successively true and false, in consequence of a change in material object only.

4.3. Finally, it is interesting to look at some aspects of the positive answer that Johannes Caramuel Lobkowitz gave to the question whether a mental proposition can change its truth-value.20 He bases his view that such propositions as *Nunc Petrus currit* and *Hodie Petrus currit* (‘Peter is running today’) can be true at one time and false at another on a theory concerning those words which nowadays are called indexicals. According to Caramuel, the pronoun ‘I’ for instance does not signify Peter or Paul in particular; it signifies the first person in general. It has an indeterminate signification, which is understood in abstraction from all individual references and adds to any individual with which it happens to become associated the characteristic of being the first person. Similarly, ‘today’ does not refer to a determinate day but it signifies in general the present day that actually exists whenever the word is pronounced.

Now in order to prove his case, Caramuel starts from written propositions, which have the advantage of being less fugitive than spoken or mental ones. Suppose there is a written proposition ‘Today the sun enters the Ram’ (*Hodie ingreditur sol in Arietem*). Then the word ‘today’ signifies, not one particular day, but any day that happens to be coexistent with the proposition. In the whole year, however, there is only one day on which that proposition will be true. Another example makes it even more manifest how Caramuel conceives of the relationship between a constant generic sentence-meaning and a particular

19 Arriaga 1669, l.c., pp. 234—235.
situation contributing a specification of that meaning. Suppose that the Blessed Sacrament is in altar A and that a written sign is put on the altar, saying ‘Here is the bread that came down from heaven’ (*Hic est panis qui de coelo descendit*). If then the Sacrament is transferred to altar B while the sign remains on altar A, the sign will be false; but if the sign is subsequently put on altar B, it will again be true. In such a case it is rather natural to assume that the general and abstract signification of the written proposition remains unchanged and that the specification of that signification comes from outside, namely, from the particular place where the written proposition is situated.

From this kind of example concerning written propositions Caramuel goes on to argue that mental propositions can likewise change their truth-value. For the difference that consists in the fact that written propositions are conventional and mental propositions are not, is irrelevant here. What is decisive is the common feature that each kind of proposition can preserve its identity during a certain period.

5. Conclusion

Although I have occasionally availed myself of the terms ‘sentence-meaning’ and ‘utterance-meaning’, it should not be overlooked that the two conceptions of a mental proposition that played a crucial role in answering the question whether a mental proposition can change its truth-value are at best approximations to the notions that are current in modern linguistics. Nevertheless, these terms may serve to mark the different vantage points from which the participants in the dispute argued their case. Those philosophers who adhered to the view expressed by Aristotle in *Categories*, 5, meant by a mental proposition something like a thought-type, that is, a cognition and its content as they are understood in abstraction from the various situations to which they are capable of being applied. They assumed that such a vague and indeterminate thought can preserve its identity while being confronted with different situations in the outside world which on each occasion of use contribute a specification to the generic thought and thus make it sometimes true and sometimes false. Curiously enough, advocates of this view did not feel the need to posit a specific mental proposition as the result yielded by the application of the generic thought to the particular situation, but regarded the generic thought itself as the bearer of truth and falsity.

By contrast, philosophers who did not admit any change in truth-value meant by a mental proposition a thought that is specific in every respect, particularly in its indication of time, whether that is expressed by a fixed temporal description or by some indexical. This fully explicit thought is considered as the proper bearer of an unchangeable truth-value. If it is derived from a more general thought, this general thought is usually interpreted as a complex of hypothetical propositions which states the conditions of truth and, together with the affirmation of an antecedent, yields a more specific statement as conclusion: in the way in which the proposition ‘If A is the moment of formation, Peter is running at A; if B is the moment of formation, Peter is running at B; and so forth’, which is taken to be equivalent to ‘Peter is running’ in the abstract sense, may be combined with the affirmation that A is the moment of formation and then yields the specific conclusion that Peter is running at A. About both the hypothetical statement and the specific conclusion it may be maintained that
once true or false they are always true or false, while at the same time it is
undeniable that they are different propositions.

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A 17th-Century Debate on the
*Consequentia Mirabilis*

In modern times the so-called *consequentia mirabilis* (If (if not-P, then P), then P) was first enthusiastically applied and commented upon by Cardano (1570) and Clavius (1574). Of later passages where it occurs Saccheri’s use (1697) has drawn a good deal of attention. It is less known that about the middle of the 17th century this remarkable mode of arguing became the subject of an interesting debate, in which the Belgian mathematician Andreas Tacquet and Christiaan Huygens were the main representatives of opposite views concerning its probative force. In this article the several phases and moves of that debate are delineated.

1. Introduction

In *Principia mathematica* Whitehead and Russell proved, as theorem 2.18, a thesis of the form ‘If (if not-P, then P), then P’. According to them, this thesis states that a proposition which follows from the hypothesis of its own falsehood is true; it is the complement of the principle of the *reductio ad absurdum*, which states that, if P implies its own falsehood, then P is false. About 1929 Łukasiewicz chose the same thesis as one of three axioms for the ordinary propositional calculus. In honour of a 16th-century champion of the thesis he dubbed it ‘the law of Clavius’, mentioning that it had also been referred to as the *consequentia mirabilis*. As a matter of fact, in modern times this remarkable method of proof had been used first by Girolamo Cardano, in a treatise *De proportionibus* published in 1570. Cardano’s claim that nobody before him had had the same idea was criticised by Christopher Clavius, who in his Latin edition of Euclid’s *Elements* published in 1574 observed that in proving Theorem 12 of Book IX Euclid had already availed himself of the same mode of demonstration. Clavius also gave a similar proof of Theorem 11, Proposition 12 of Book I of the treatise *Sphaerica* composed by the Greek mathematician Theodosius about 100 B.C.

In this century the *consequentia mirabilis* has been discussed mainly in connection with a passage in Girolamo Saccheri’s *Logica demonstrativa* of 1697, where it is employed in an attempt to account for certain laws of syllogistic without invoking a special postulate about the ways in which terms may be related to one

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4 *Theodotii Tripotiarum Sphaericorum libri III*, a Christophoro Clavio Bambergensi S. J. perspicuis demonstrationibus ac scholis illustrati, 1586, 16–17. See also Nuchelmans 1991, ch. 9.
It is this passage, too, which occasioned a renewal of a critical attitude that had already been shown by Aristotle; some authors hold that the fact that the denial of a proposition leads to its reaffirmation by no means establishes its truth. It seems to be less known that a similar sceptisism about the claims made with regard to the consequentia mirabilis was voiced in the middle of the 17th century. In the ensuing debates six persons were involved. I shall first briefly introduce them.

The Jesuit Andreas Tacquet (1612–1660) taught mathematics in colleges of his society at Louvain and Antwerp. Another Belgian Jesuit, the theologian Ignatius Der-Kennis (1598–1656), was a close friend of Tacquet’s. Like Tacquet and Der-Kennis, Arnold Geulincx (1624–1669) was born in Antwerp; he started his academic career at the University of Louvain, but went in 1658 to Leiden, where he taught philosophy until his death in 1669. In the northern part of the Low Countries, Frans van Schooten the Younger (1615–1660) was a professor of mathematics at the University of Leiden; he translated Descartes’s Géométrie into Latin and edited François Viète’s mathematical papers. Among Van Schooten’s pupils was Christian Huygens (1629–1695), who at the time of the debate was living at The Hague. Finally, Daniel Lipstorp(ius) (1631–1684) was a German from Lübeck, who had taken his degree of artium liberalium magister at Rostock. In the spring of 1652 he had come to Leiden in order to continue his studies, mainly under the supervision of Van Schooten. It is worthy of note that all these thinkers shared strong feelings of sympathy towards Cartesianism.

2. Huygens against Van Schooten

2.1 On 3 September 1652, Tacquet had presided, at the Jesuit college of Louvain, over the defence of a collection of theses concerning different subjects. Of the illustrated programme in which the theses were listed he had sent three copies to Christiana Huygens. In a letter of 29 October 1652 Huygens passed one of the copies on to Frans van Schooten the Younger and asked his opinion about one of the geometrical theses, to the effect that truths can be directly elicited from falsehoods. In a letter of 4 November 1652 Van Schooten suggested four fields from which corroborations of that thesis might be adduced.

First, if someone argues ‘Every stone is an animal; every man is a stone; therefore, every man is an animal’, he will directly draw a true conclusion from two premisses that are manifestly false, according to a form of reasoning that satisfies all required conditions. Van Schooten contrasts this case with the impossibility of correctly drawing a false conclusion from two true premisses. Next, he thinks that
the thesis in question will be even more intelligible if one looks at the so-called *regula falsi*, which contains instructions on how to find, on the basis of one or more false or arbitrarily assumed numbers, the sought or true number.\(^\text{14}\) Further, it might be held that the same applies to the whole of algebra, given that in that science from an assumed or fictitious quantity the true and sought quantity is always found by applying certain rules or directly. The only difference with respect to the *regula falsi* lies in the fact that in algebra the assumed quantity is merely suppositional, not necessarily altogether false or opposite to the quantity sought. Lastly, Van Schooten points out that astronomers, even though their hypotheses are quite different, yet agree in their calculations regarding, for instance, eclipses. Copernicus himself declares that initially he based his improved calculations on the assumptions of Ptolemy. The *astronomus calculator*, though perhaps not the *astronomus philosophus*, may therefore content himself with calculations that are built upon the false Ptolemaic hypotheses but are nonetheless in agreement with the calculations based on other and better hypotheses.

2.2 In a letter of 4 November 1652 Huygens thanks Tacquet for the copies of the programme, enclosing Van Schooten’s answer to him and adding a note in which he briefly describes Van Schooten’s suggestions. As Huygens is not at all satisfied by them, he asks Tacquet for an elucidation of the import of his thesis and for at least one geometrical example in which what it claims takes place. Huygens stresses that provisionally he is of a different opinion, since he has never come across such a way of proceeding.\(^\text{15}\)

In the mean time Huygens replied to Van Schooten in a letter of 7 November 1652.\(^\text{16}\) As far as algebra is concerned, he objects that a certain symbol for the number sought (as in ‘3x = 6’) is introduced simply for the sake of brevity; there is no falsity in it. Neither is the *regula falsi* a case in point. For there is no need to consider the initially assumed numbers as that which is eventually sought. Although the phrase *regula falsi* contains the element *falsum*, one should pay attention to what is actually done, rather than to what is said. As to the syllogism proposed by Van Schooten, Huygens is of the opinion that before it can be assessed one should determine what exactly is meant by the phrase *ex falsis verum directe elicere*. In Huygens’s eyes, it is hard to believe that Tacquet’s thesis has regard to any case whatever in which from false premises a conclusion is drawn that happens to be true. If that interpretation were intended, the thesis would be rather silly and could be corroborated by hundreds of examples. In all probability, then, what Tacquet wants to assert is the following thesis: a truth is elicited from falsehoods when after positing something false as if it were true something true is demonstrated in such a way that this demonstration convinces us of the truth of the conclusion, though all the time we realise that what was posited is false. Evidently, the syllogism

\(^{14}\) Christian Wolff, *Mathematisches Lexikon*, 1716 (reprinted Olms, Hildesheim, 1978), col. 1204, offers the following example of an application of the *regula falsi*. Three persons, A, B, and C, together buy a house for 6500 dollars. B pays twice as much as A, while C pays three times as much as B. In order to find out how much each of them contributes, one may begin by assuming that A pays one dollar, B two dollars, and C six dollars. On that assumption they would together pay nine dollars, obviously considerably less than the total sum required. But by carrying out certain arithmetical operations it is possible to reach the correct conclusion that A pays 722 2/9 dollars, B 1444 4/9 dollars, and C 4333 3/9 dollars.


adduced by Van Schooien does not meet this condition: no one who did not know
that before will be persuaded by it that man is an animal. The refutation of a possible
example found in Archimedes and of the reference to the diverse hypotheses of the
astronomers Huygens wants to postpone until Van Schooten comes to visit him.

It is interesting to note that this exchange of views makes it quite clear that two of
the best mathematicians of those days apparently had no idea of the real background
of Tacquet’s thesis, which, as we shall see, was the consequentia mirabilis as it had
been hailed, roughly seventy-five years ago, by Cardano and Clavius. It is unlikely,
therefore, that this peculiar mode of demonstration had been a conspicuous subject
of discussion during the intervening period.

3. Huygens against Tacquet

3.1 In a letter of 2 December 1652 Tacquet complies with Huygens’s request for
more information about the way in which a truth can be directly elicited from
falsehoods. To begin with, he calls attention to examples of that mode of arguing
which can be found in Euclid (Elements, IX, Proposition 12), in Theodosius
(Sphaerica, I, Proposition 12), and in Cardano (De proportionibus, V, Proposition
201). As the original Greek text of the passage in Theodosius does not contain a
specimen of the consequentia mirabilis, Tacquet is obviously referring to Clavius’s
edition of the Sphaerica, in which such a specimen does occur at that place. But in
addition to these examples in other mathematicians’ works he also offers a proof
constructed by himself, to the effect that in a certain case from the hypothesis that
the length of a straight line BG is not greater than the combined length of the
straight lines BC and CH it follows directly that the length of BG is greater than the
combined length of BC and CH. According to Tacquet, it is not difficult to account
for this mode of arguing, which fills most people with feelings of incredulous
wonder. It is a property of (some) false propositions that contradictories can be
deduced from them, which therefore must be somehow contained in them. Now
mostly those contradictories are each different from the proposition that entails
them. But sometimes it happens that one of them is the false proposition itself and
the other the negation of the false proposition. When that is the case, it is of course
possible to elicit from that very falsehood its negation, that is to say, a truth, for the
negation of a falsehood is a truth. This is in full accordance with the nature of (some
kind of) falsity; and that from a falsehood a truth can be elicited should no more
cause any wonder than that a falsehood contains contradictories of which one is the
falsehood itself and the other the negation of that falsehood. In other words, the
consequentia mirabilis has its appropriate place in contexts in which one is dealing
with a self-contradictory proposition that entails a necessary truth as its own
negation.

3.2 A few days later, in a letter of 10 December 1652, Huygens reacts to Tacquet’s
elucidation. He feels that now at last the import of the thesis is clear to him; but he

19 This explanation is repeated practically verbatim in the scholium added to Geometria practica, II,
Theorem 1, Proposition 2. The Geometria practica, written by Tacquet about 1659, was
posthumously published in the Opera mathematica of 1669. The scholium (p. 97 of that treatise)
begins with the words: Hic discursus exemplum rursus clarissimum praebet eius ratiocinationis, quae
ex contradictorio assertionis directa ac ostensiva demonstratione assertionem ipsam concluit.
adds at once that he cannot agree with Tacquet’s claim. As he sees it, the proof about the straight lines is not a direct one, but rather of the form of a reduction to absurdity;\(^{21}\) it remains incomplete, however, in that the absurdity is not made explicit. For after drawing the conclusion that the length of BG is greater than the length of BC and CH taken together one should add: but it was posited that the length of BG was not greater than the length of BC and CH; therefore, the length of BG will be simultaneously greater and not greater, which is absurd; consequently, that from which this absurdity follows is false, so that the length of BG is greater than the length of BC and CH. As to the other examples given by Tacquet, Huygens remarks that Euclid’s way of proceeding at \textit{Elements}, IX, Proposition 12, confirms his view; Cardano’s treatise he has never read, while the proof of Theodosius, \textit{Sphaerica}, I, Proposition 12, which he has seen is a direct demonstration, not one in which the theorem is deduced from its contradictory.

Further, Huygens suggests that perhaps Tacquet thinks it superfluous to continue his proof after he has reached the truth that BG is greater than BC and CH through a direct deduction. But in fact it is rather doubtful if it has been satisfactorily shown that this is so. The reason why Huygens does not feel convinced by Tacquet’s type of argument is his awareness that the premisses contain something that is false, or at least, as in the proof elaborated by Tacquet, something that is still questionable. But everything that follows from something questionable is itself equally questionable. In a genuine direct demonstration, however, all premisses from which the conclusion is drawn must be certain. If they are not certain, but either questionable or plainly false, then it may not be impossible to arrive at a conclusion that happens to be true, but whether it is true or false cannot be decided from that demonstration in so far as it remains direct. Suppose that Tacquet really did not know if BG was greater than BC and CH; then his own deduction would not convince him that it was greater, unless the supplement containing the reduction to absurdity were added at least in thought.

What Huygens means may also, I think, be paraphrased as follows. Suppose that we do not know whether P is the case or is not the case. Then we may begin by deducing P from not-P, according to a valid pattern of inference and directly, that is, without invoking a reduction to absurdity. By doing so, however, we have not yet proved convincingly that P is the case. For if P is uncertain, not-P is uncertain as well, and for the deduction to be a real proof that P is the case all premisses would have to be certain. Therefore, Tacquet may have carried out a correct direct deduction of P from not-P, but as such and by itself that deduction does not yet prove that P must be true. In order to obtain a full-blown proof, a second stage has to be added, in which it is stated that now we have both P, as the conclusion of the deduction, and not-P, as the hypothesis from which that conclusion follows, and that such an impossibility forces us to consider not-P as false and consequently P as true. In other words, by deriving P from not-P Tacquet may have offered a correct and direct deduction (which Huygens unfortunately also calls a \textit{directa demonstratio}), but if we want to expand that deduction into a proof, it has to be supplemented by a \textit{reductio ad absurdum}, so that the complete proof, as opposed to its first stage, which contains the direct deduction, is not direct. And on that interpretation Tacquet’s thesis would be false.

\(^{21}\) For the contrast between proofs that are conducted \textit{deiktikós} (ostensive, directe, affirmative) and proofs through a reduction to absurdity see Aristotle, \textit{Prior Analytics}, I, 29, 45 b 8–11, and II, 14, 62 b 29–42.
3.3 In a letter of 18 December 1652 Tacquet replies that similar thoughts had occurred to him too, but that the clever arguments propounded by Huygens do not refute his thesis, because that thesis has an altogether different meaning. It states only that from a falsehood a truth can be deduced by valid and direct inferences (posses ex falso verum per legitimas directasque illationes deduci); and for that thesis to be true it does not matter whether or not through that deduction absolute knowledge of that which is sought is obtained. Tacquet adds that this interpretation of his thesis can also be gathered from the philosophical explanation that he had given in his letter of 2 December. There he had pointed out that in the special case of self-contradictory propositions it is not at all surprising that a truth can be elicited from a falsehood. By referring to that explanation he perhaps intends to make it clear that two things ought to be kept separate: the fact that sometimes a truth is directly deduced from a falsehood and, on the other hand, the explanation of how that is possible. Apparently, he wants his thesis to be understood as having regard only to the bare fact, without extending the discussion to the way it is to be accounted for. However that may be—and we shall have occasion to return to this issue later—at this point of his dispute with Huygens Tacquet wishes his claim to be confined to the simple fact that sometimes a truth is directly deduced from a falsehood and, irrespective of whether that deduction yields scientific knowledge or not. After thus carefully separating the import of his thesis from the question about proof and scientific knowledge on which Huygens had focused, Tacquet observes that, even if the latter question is made the subject of a different investigation, it is quite possible to expand the deduction with which his thesis is exclusively concerned into a scientific proof without invoking, as Huygens does, a reduction to absurdity (citra deductionem ullam ad impossible). If someone wants to argue that A is equal to B, he can do so in the following manner. Either A is equal to B or A is not equal to B. If the adversary concedes that A is equal to B, it is all right (habetur proposition). If he says that A is not equal to B, then from that premiss it can presumably be deduced that A is equal to B. Consequently, A is equal to B. According to Tacquet, this argument as a whole yields genuine knowledge without any appeal to a reduction to absurdity, because it is known by the light of nature that what follows from each member of a contradiction is necessarily true.

3.4 From Huygens's reply, dispatched at the end of December 1652, it is clear that he feels somewhat disappointed by Tacquet's reaction. That he has misunderstood the import of Tacquet's thesis is due, he says, to his belief that the example offered by Tacquet was meant as a full-blown proof and also to his expectation that the thesis was of a more subtle and paradoxical nature. But now he must conclude from Tacquet's latest explication that the thesis is concerned only with something that may be assumed to be rather familiar and very well-known to dialecticians, namely, that it is possible to deduce a truth from falsehoods by a valid and direct inference, as in 'Every stone is an animal; every man is a stone; therefore, every man is an animal'. It must be admitted that by such examples, which also occur in geometry, Tacquet's thesis is shown to be true. But then it remains unclear to Huygens how it could have appeared so impossible and marvellous to learned men.

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23 This kind of dilemmalic argument and the rule on which it depends are already found in Sextus Empiricus, Outlines of Pyrrhonism, II, 186. See also Nuchelmans 1991, ch. 2.
At any rate, he proposes that for the time being they take their leave of this subject and concentrate rather on eliciting the truth from truths. As we shall see, seven years later he will return to this issue once again.

4. Lipstorp against Tacquet

4.1 During his first stay at Leiden, from the beginning of 1652 until the middle of 1653, Daniel Lipstorp was in close contact with Frans van Schooten, who undoubtedly discussed with him the theses propounded by Tacquet on September 3, 1652. In the spring of 1653 Lipstorp published a book, entitled *Specimina philosophiae Cartesianae* (Leiden, Elsevier), of which he sent copies to Tacquet, whom he may have known from a visit to Louvain, and to Huygens, with whom he corresponded but whom he does not seem to have met personally during this period. One of the reasons why he thought that Tacquet and Huygens would be interested in this book must have consisted in the fact that at the end he had added an appendix about the question of whether from falsehoods a truth can be directly elicited (pages 208–220). In that appendix he undertakes to defend the negation of Tacquet’s thesis—which he quotes as *ex falsis posse verum directe elici novis exemplis geometricis confirmabimus*—along lines which show that he was fairly well acquainted with the considerations put forward so far by Van Schooten, Huygens, and Tacquet.

As a preliminary to the general demonstration of his negative thesis (*quod ex falsis directe verum sequi nullo modo possit*) Lipstorp first determines how he is going to understand the word *directe* in this context. According to him, something follows directly if it follows in virtue of a *bona et formalis consequentia*. *Bona* or valid is an inference in which the contradictory of the consequent is incompatible with the antecedent. Formally valid is an inference if all conditions on which the conclusion necessarily follows from the premises are duly satisfied. Otherwise, nothing follows, except rarely and per accidens. This must mean that it is not impossible that occasionally from truths a truth is concluded according to an invalid pattern of inference, as in ‘A donkey is a quadruped; man is not a donkey; therefore, man is not a quadruped’. Now formal validity is guaranteed by two principles, the *dictum de omni* and the *dictum de nullo*, which hold because a valid form of argument is one in which a true conclusion is drawn from true premises in every matter and always, not merely sometimes and in some matter only. This is confirmed by the definition of the syllogism, in which the conclusion is said to follow by necessity and in virtue of the premises.

After this explication of the word *directe* Lipstorp goes on to prove his negative thesis by invoking a rule of logic on which all sound inferences are based: directly or in virtue of a formally valid inference from a truth nothing but a truth follows, and from a falsehood a falsehood follows. Very rarely it also happens that a truth follows from a falsehood, but only per accidens and in virtue of a *consequentia materialis* holding in this or that matter, not unrestrictedly. This proof is remarkable in that Lipstorp apparently refuses to subscribe simply to the rule that from a falsehood anything may follow, a truth as well as a falsehood. That means that he takes the *dictum de omni* (and the *dictum de nullo*) in the sense in which it is formulated in Aristotle’s *Posterior Analytics* (1, 4, 73 a 27–34), rather than in the sense in which it is

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25 This example of one kind of *consequentia materialis* is given by Christopher Scheibler, *Tractatus logicus de syllogismis et methodis*, 1619, 15 (Risse 1964, 475, n. 192).
formulated in Prior Analytics (I, 1, 24 b 28–30).26 In an apodictic syllogism both the premisses and the conclusion are true and the truth of the premisses is the ground of the truth of the conclusion.27 From that point of view cases in which the two premisses and the conclusion are all true, but the form of inference is invalid, and also cases in which the false premisses cannot be the ground of the truth of the correctly inferred conclusion are to be characterised as per accidens, as opposed to directe or per se.28 On this interpretation of directe, then, Tacquet’s thesis is false and Lipstorp’s negative thesis is true. That truth is corroborated further by the repudiation of four possible objections, of which the first three are practically identical to suggestions made by Van Schooten in his letter of 4 November 1652.

To begin with, Lipstorp deals with the syllogism ‘Every lion is a stone; every diamond is a lion; therefore, every diamond is a stone’, in which the premisses are false, yet the conclusion is true and the form of reasoning valid. If we look at it more closely, however, we see that the part ‘Every diamond is a stone’ is true as a proposition considered in itself, but not as a genuine conclusion; for it does not follow from the premisses by necessity and per se, but only per accidens. Lipstorp stresses this feature by saying that the premisses are not protáseis in a strictly logical sense and that therefore no sumpérasma can be elicited from them; apparently using the Greek terms in order to emphasise the authentic sense of the words ‘premise’ and ‘conclusion’ which he has in mind. That ‘Every lion is a stone’ cannot be a genuine premis, in the sense of being the ground of the truth of the conclusion, is clear when we realise that it cannot possibly be true. At this point Lipstorp introduces an additional consideration, which fully confirms the interpretation of the dictum de omni according to the passage in Aristotle’s Posterior Analytics. Everyone who has enjoyed elementary instruction in logic knows that in matters concerning predicates or universals only literal, natural, intrinsic and true predications are taken into account, while predications that are figurative, counternatural, preternatural, extrinsic or false are not admitted. The privileged predications are also the basis on which the categories or predicaments are distinguished.29 Further, it should be borne in mind that there was a trend in logic according to which the doctrine of the syllogism was restricted to subjects and predicates which occur in essential

26 For the difference between the dici de omni prioristicum and the dici de omni posterioristicum see, for instance, Ockham, Summa logicae, III, II, 6; Dominicus SOTO, In Porphyrii Isagogen, Aristotelis Categories librose de Demonstratone comenaria (1st ed. 1543), 1587 (reprinted Minerva, Frankfurt, 1967), 310–311.

27 For the truth of the premisses being the ground of the truth of the conclusion see Aristotle, Prior Analytics, II, 2, 53 b 8–10. See also, for instance, Thomas Aquinas, In Metaphysicam Aristotelis, II, Lectio II (non enim potest scrii verum per falsum, sed per aliud verum); and Collegii Complutensis disputaciones in Aristotelis dialecticam (1st ed. 1624), 1668 (reprinted Olms, Hildesheim, 1977), 27 and 291 (quamvis enim conclusio vera sequi posse ex antecedenti falso—tale antecedenti non influit veritatem in consequenti neque est causa eius; sed aliunde eam habet).

28 Cf. Cunradus Theodoricus (Dietericus), Institutiones dialecticae (1st ed. 1609), 1611, 293: Ex veris per se non nisi verum colligi potest, ex falsis nil nisi falsum—Ex falso interdum verum, sed ex accidenti (Risse 1964, 462, n. 114). It is also noteworthy that Joachim Jungius in Logica Hamburgensis (1st ed. 1638) (ed. R. W. Meyer: Hamburg, 1957), 139, defines the dictum de omni as follows: Quicquid vere dicitur de omni, hoc est de subjecto aliquo universiim sumpto, id etiam vere dicitur de quovis, quod sub eo subjecto continetur. He also describes a syllogismus directus sive ostensivus as a syllogism, qui veram conclusionem ex veris sumptionibus colligit (p. 143).

29 Lipstorp is referring here to the common doctrine that the constitution of the categories should not be founded on predications that are figurative (Prata rident), counternatural (Animal est homo), preternatural (Album est dulce), extrinsic (Animal est genus) or false (Leo est lapis). See, for instance, Stephanus Chauvin, Lexicon philosophicum (1st ed. 1692), 1713, 511–513.
predications, being eternally true. On that view, the *dictum de omni* was derived from the rule given by Aristotle in *Categories* (3, 1b 9–15): whenever one thing is predicated of another as of a subject, all things said of what is predicated will be said of the subject also. For example, man is predicated of the individual man, and animal of man; so animal will be predicated of the individual man also, for the individual man is both a man and an animal. What this version of the *dictum de omni* and the posterioristic one have in common is the requirement that the premisses be true and form the ground of the truth of the conclusion. Almost certainly, therefore, the *praedicatur* in Lipstorp’s formulation of the *dictum* (*Quicquid praedicatur de omni, hoc etiam dictur de cunctis quae sub illo continentur*) has to be taken in the pregnant sense of ‘is predicated truly’, just as the *vere dicitur* in Jungius’s *Logica Hamburgensis* (page 139). That explains also why he concludes his reply to the first objection by stating that the *dictum de omni* is not satisfied by the syllogism in question and that therefore it is not conclusive in the formal sense that he has defined for the term *directe*. The *dictum de omni* which he invokes is not the prioristic one, but an amalgam of the versions in Aristotle’s *Categories* and *Posterior Analytics*. According to that stricter sense, the true conclusion ‘Every diamond is a stone’ does not follow from the false premisses, so that the syllogism adduced does not refute Lipstorp’s negative thesis.

Next, Lipstorp considers the objection that astronomers have reached correct calculations of celestial movements on the basis of false hypotheses. He rejects that counterexample on grounds that may be summarised as follows. First, the hypotheses and figurative ways of speaking propounded by astronomers may be fictitious, but they are not therefore plainly and completely false; they do not really mislead but rather serve the purpose of facilitating insight and understanding. Even if they were downright false, however, it would be wrong to regard the relationship between those hypotheses and the observations made by astronomers as one of premisses to conclusion. In reality, the observations come first and the hypotheses are thought out afterwards in order to have a comprehensive theory by which the phenomena can be satisfactorily accounted for. It is far from being the case, then, that here a truth follows directly from falsehoods.

Equally unconvincing in Lipstorp’s eyes is the objection based on the *regula falsi*. The numbers or quantities which are chosen at the outset are not false, but only uncertain; though in such a way that they can be developed into the quantity sought.

Lastly, and most pertinently, Lipstorp comes to the geometrical examples found in Euclid, Cardano, and Theodosius. That Tacquet had adduced these examples in his letter of 2 December 1652 Lipstorp must have heard from Van Schooten. First, he quotes Clavius’s version of the proof of Proposition 12 of Book IX of Euclid’s *Elements*. He also reproduces the proof which Clavius had given of Proposition 12 of Book I of Theodosius’s *Sphaerica* but which in that form is not to be found in the original Greek text. Theodosius’s Proposition 12 states that circles on a sphere that cut one another in two equal parts are great circles, that is, circles having the same centre as the sphere. In order to prove this theorem, Clavius constructs the point G

30 A good example of that trend is Arnold Geulincx’s *Logica* of 1662. For details see Nuchelmans 1988.
as the common centre of the two circles. From G he erects the straight lines GH and GI at right angles to the plane of each of the two circles. Then he makes the crucial supposition that G is not the centre of the sphere and shows that from that negation it directly follows that G is the centre of the sphere (for that centre must lie at the intersection of GH and GI, which is G).

After thus setting forth two of the examples invoked by Tacquet, Lipstorp expresses his astonishment at the elation with which Clavius and Cardano hail this mode of arguing as a novel and marvellous kind of proof. According to him, it is quite familiar to logicians and based on two principles that are the most evident of all and known by nature, namely, that the same things cannot at once be and not be, and that everything either is or is not. Now in the case of Clavius's proof of Theodosius's Proposition 12 we have a genuine contradiction: that G is the centre of the sphere, and its negation. Let us suppose that G is not the centre of the sphere. That supposition leads to the conclusion that the proposition 'G is not the centre of the sphere' is false; which means that its contradictory is true. Indeed, the core of the proof may be considered as being of the form: 'G either is the centre of the sphere or is different from that centre; but it is not different from that centre; therefore, it is the centre of the sphere'. This is a valid pattern of inference, for one of two contradictory propositions is denied, so that the other can be affirmed (Consequentia legitima est: quia unum tollitur, ut alterum ponatur. Tolle igitur contradictoriarum unam, et legitime ponetur altera). Ironically Lipstorp observes that he is not so lynx-eyed as to see how here a truth follows directly from a falsehood. Though he does see that from the assumption that G is not the centre of the sphere its affirmative contradictory necessarily follows.

From all these considerations Lipstorp concludes that Tacquet's thesis cannot be accepted as true. This is just as well, given the danger that 'if one oddity is granted, others would follow'.

4.2 About a year later, in the spring of 1654, Tacquet published a reply to Lipstorp, in an appendix added to the *Elementa geometriae planae ac solidae* (Antwerp, J. Meursius). After a brief introduction he first indicates the way in which he undertakes to prove the thesis attacked by Lipstorp. That there exist assertions which are directly and affirmatively inferred from their contradictories is established by pointing to the examples from Euclid, Cardano, and Theodosius (in Clavius's version). Moreover, Tacquet calls attention to some such inferences in his own *Elementa geometriae* (Book V, Proposition 35, and Book XI, Proposition 4). Besides these geometrical cases, he also offers a cosmographical example: in connection with the proposition that the shape of the surface of the sea is spherical. Let us assume that the contradictory of that proposition is true. If the surface of the sea is not spherical, it will not be the case that all parts of the surface of the sea are at an equal distance from the centre; on the contrary, some parts will be higher than other parts. But it is known from experience that the nature of humid matter is such that the higher parts flow downwards to the parts that are lower. This process necessarily results in an equal distance of all parts from the centre. And that means that the shape of the surface of the sea is perfectly spherical.

32 This quotation (in Greek) is from Aristotle, *Physics*, 185 a 11–12, in connection with Melissus of Samos.
Now once it has been shown that there exist assertions which are directly inferred from their contradictionary, Tacquet takes the next step, which consists in the statement that such assertions are necessarily true. According to him, it is a self-evident axiom that whatever destroys its own contradictory is necessarily true; and that which directly follows from its own contradictory destroys its own contradictory. But if such an assertion is necessarily true, its contradictory, from which it is inferred, is false. Consequently, in the examples given a truth has been directly and affirmatively deduced from a falsehood, and that suffices to prove the thesis propounded by Tacquet.

The crucial step in this proof is the transition from 'P is directly inferred from its contradictory, not-P' to 'A truth is directly inferred from a falsehood'. This step is warranted by the self-evident axiom that, if P makes not-P false, P is necessarily true; and that P follows from not-P means that P makes not-P false (no doubt because then we have both P, as consequent, and not-P, as assumption). On the one hand, then, this axiom is an essential element of the proof of Tacquet's thesis. On the other hand, he invokes the same axiom in order to establish something that he apparently considers as only a corollary of the thesis, namely, that a demonstration in which an assertion is directly inferred from its false contradictory really yields scientific knowledge; and in such a way that we can be sure of the truth of the assertion without any further deduction to an impossibility (absque ulteriori ulla deductione ad impossibile). As in his letter of 18 December 1652, Tacquet evidently wants to separate the question of the truth of his thesis from the question as to whether the inferences concerned yield scientific knowledge. And as there he answers the different question of whether scientific knowledge results by appealing to the rule that what follows from each member of a contradiction is necessarily true, so here he invokes the self-evident axiom about P making not-P false for the same purpose. He also adds that, if a truth is inferred from some falsehood that is not its contradictory, such an inference will not yield any scientific knowledge. For in that case we cannot be sure of the truth of the assertion that is so deduced, because we know that in general a falsehood may entail something that is false.

Tacquet is confident that after these elucidations a detailed refutation of Lipstorp's arguments is superfluous. But as Lipstorp's book is perhaps not in everyone's hands, he is willing to touch briefly upon the four objections put forward by his opponent. Actually, he confines himself to merely mentioning that Lipstorp begins by offering some considerations about the meaning of consequentia directa and the dictum de omni et nullo, without in any way scrutinising their plausibility. Also, he makes very short work of the first three objections. About the syllogism 'Every lion is a stone; every diamond is a lion; therefore, every diamond is a stone' he says that he did not adduce such a syllogism in support of his thesis; in it a truth is deduced from a falsehood that is not its contradictory, so that it does not yield any scientific knowledge either. As for Lipstorp's expatiations on the hypotheses of the astronomers and the régula falsi, Tacquet declares himself in full agreement with the conclusion that in neither case it is from a falsehood that a truth is directly elicited. That is precisely the reason why in proving his thesis he did not appeal to such examples.

Finally, Tacquet comes to the passages from Euclid, Cardano, and Theodosius on which he did base his demonstration. In his opinion, Lipstorp has advanced nothing that could diminish the strength of that demonstration. Moreover, it is easy to point out what Clavius, Cardano, and Tacquet himself find so amazing about this
form of arguing. It is the fact that the assertion to be demonstrated—for instance, that \( G \) is the centre of the sphere—is directly, by means of valid and necessary inferences, deduced from its own contradictory. Whenever that happens, there surely is reason to marvel. It is far from being true that this mode of demonstrating is quite familiar to logicians; on the contrary, there are very learned men to whom it looks impossible. Further, Tacquet observes that Lipstorp does not succeed in refuting his thesis by simply offering a proof of Theodosius’s Theorem 12 that is plainly different from the demonstration given by Clavius and highlighted by Tacquet. In a last effort to make Lipstorp see his point even if he were not lynx-eyed, Tacquet draws the main lines of that demonstration once again.

1. If it is supposed that \( G \) is not the centre of the sphere, it follows by absolute and formal necessity that \( G \) is the centre.
2. Manifestly, then, that \( G \) is the centre directly follows from its contradictory, namely, that \( G \) is not the centre.
3. By the light of nature it is known that something that destroys its own contradictory—that is, follows directly from its contradictory—is necessarily true.
4. Therefore, the proposition \('G \) is the centre', which has been directly deduced from the contradictory proposition \('G \) is not the centre', is true.
5. Since \('G \) is the centre' is true, \('G \) is not the centre' is false.
6. Consequently, a truth has been directly deduced from a falsehood.

5. The last phase of the debate between Huygens and Tacquet

5.1 In 1651 Tacquet had published *Cylindricorum et annularium libri IV*. In 1659 he added a fifth book to that work and proved Proposition 4 of that book in a way which he describes thus: *Habes igitur, Lector, ex ipsa conclusionis negatione, conclusionem ipsam positive ac directe demonstratam*. He refers to other examples of this curious form of arguing that occur in his writings, and also to his reply to Lipstorp. In order to show that what happens in this type of demonstration is neither incredible nor alien to truth, he offers the following explanation. That from a falsehood which is supposed to be true its contradictory is directly deduced (and is therefore necessarily true) is nothing else than that the falsehood is overthrown and destroyed by itself, which is in full accordance with the nature of falsity (nam ex falso supposito tamquam vero directe deduci contradictorium eius, quod proinde necessarie verum est) nihil est aliud, quam falsum a se ipso everti ac destrui; quod naturae falsi maxime consentaneum est). Whereas in Tacquet’s reply to Lipstorp it is \( P \) that makes not-\( P \) false (by following from it) and is therefore necessarily true, here the perspective is slightly different: not-\( P \) makes itself false, apparently because it implies \( P \), so that we have both \( P \) and not-\( P \).

Tacquet sent Huygens a copy of the fifth book of the *Cylindrica et annularia*. In a letter of 1 January 1660 Huygens thanks him for his kindness and praises the perspicuity and accuracy of his proofs. He takes exception, however, to the demonstration of Proposition 4, which in his opinion exhibits the same deficiency as he formerly had indicated in other proofs of that type presented by Tacquet.

33 New is *Elementa arithmetica* (the first part of *Arithmeticae theoria et praxis* of 1656), III, Proposition 36.
showing that the contradictory of the proposition that is assumed follows from that very proposition, Tacquet ought to add *quod est absurdum* and hence conclude that the theorem is true, just as Euclid did in proving *Elements*, IX, Proposition 12, and for good reasons. Huygens sees the difficulty of convincing Tacquet that he should give up the thesis he once propounded and defended as lying in a difference of opinion about the principles of the matter. Tacquet contends that it is perfectly evident by the light of nature that something whose contradictory destroys itself is true. According to Huygens, however, what Tacquet regards as an axiom can easily be demonstrated if we avail ourselves of the reduction to absurdity.

5.2 Looking back upon the diverse positions which we have surveyed, it is evident that Huygens most explicitly emphasises the necessity of supplementing the inference of P from not-P by a reduction to absurdity. The inference 'If not-P, then P' effectively yields the truth of P only if it is made part of the pattern 'If not-P, then P; if not-P, then not-P; if not-P, then P and not-P; not(P and not-P); therefore, not not-P, and thus P'. Tacquet, on the other hand, champions a thesis in which the word *direcete* is stressed, so that for him it is of the utmost importance to avoid making any use of a reduction to absurdity. Once, in his letter of 18 December 1652, he proposes a completion of the inference of P from not-P which does not contain any reduction to absurdity, but is nonetheless convincing. There the inference 'If not-P, then P' is made part of the pattern 'P or not-P; if P, then P; if not-P, then P; therefore, P', and the probative force of that pattern is based upon the natural insight that something that follows from each member of a contradiction is necessarily true. At other places, however, he attempts to prove his thesis by justifying the transition from 'Not-P implies P' to 'A falsehood directly implies a truth' through the axiom or immediate insight that P, by following from not-P, makes not-P false, and thus itself true; or that not-P, by implying P, makes itself false and thus P true.

Now Huygens seems to be perfectly right when he observes that this axiom is nothing but a reduction to absurdity in disguise: that not-P is false, and thus P true, is due to the fact that it implies and somehow contains both P and not-P. It is the more strange that Tacquet persisted in presenting his axiom as not involving a reduction to absurdity because he also explained the possibility of P being directly elicited from not-P by pointing to the existence of a type of falsehood that implies and contains both itself and its negation. Another feature that makes it difficult to gain a clear insight into Tacquet's position is the confusion caused by, on the one hand, his explicit denial that his thesis has anything to do with the question of whether or not the inference of P from not-P yields scientific knowledge, and, on the other hand, the unmistakable suggestion that it does: for in the *Appendix* Tacquet uses the natural insight that whatever destroys its own contradictory is necessarily true both for the purpose of proving his thesis and in support of the corollary that the direct inference of an assertion from its contradictory yields scientific knowledge. Finally, Lipstorp's proof that G is the centre of the sphere may have the form of a *modus tollendo ponens*, namely 'P or not-P; not not-P; therefore, P', but it is not hard to see that in demonstrating the falsity of not-P it is most natural to make use of a reduction to absurdity.

6. Two followers of Tacquet

6.1 Practically all the examples that played a decisive role in the debate concerning the *consequentia mirabilis* as it was outlined above belong to mathematics. That until
the middle of the 17th century this mode of arguing remained unemployed outside that special field is confirmed by the Jesuit theologian Ignatius Der-Kennis, in the treatise *De deo uno trino creatore* which he published in 1655 (Brussels, F. Foppens). In the part that deals with proofs for the existence of God, Der-Kennis declares (pages 10–11) that he will also use a mode of arguing that until then had been the exclusive tool of a few mathematicians. He refers to the familiar places in Euclid, Theodosius, and Cardano, and also mentions his fellow-Jesuit and friend Tacquet, who had probably kept him abreast of the latest developments. After showing that from the hypothesis that there is no supreme being it follows that there is a supreme being and that from the hypothesis that there is no eternal being it follows that there is an eternal being, Der-Kennis remarks that it is the peculiar privilege of the first and highest truth, on which all other truths must rest, that even its negation positively implies its necessity. If all this is right, Der-Kennis continues, it means that those logicians are mistaken who maintain that a truth can follow from falsehoods only *per accidens*, not because of that which is false, but because of something true that as its contradictory is necessarily connected with that falsehood; just as there are as many ways in which from false premisses a truth can follow as there are ways in which normally a truth follows from true premisses, when namely in any valid syllogism instead of true premisses false premisses are taken and the same true consequent is inferred as follows from true and genuine premisses. Evidently, Der-Kennis is reacting here to the kind of position that had been advocated by Lipstorp in the appendix to his *Specimina philosophiae Cartesianae*. Against this view Der-Kennis holds that his proofs have effectively shown that a truth may follow from a falsehood *per se, directe, ac ostensice*, in the same way as a truth follows from a truth, combined with other true assumptions; and that the truth that follows is sometimes the contradictory of the falsehood from which it follows.

After giving another, rather opaque, example of *mirabilis ille modus ratiocinandi* in the part about the intellect of angels (pages 413–414), Der-Kennis undertakes to lend some plausibility to this form of reasoning which to very learned men has appeared not only paradoxical but even impossible. Actually, what he has to say is identical to the account provided by Tacquet in his letter of 2 December 1652. A most common manner of bringing falsity to light consists in showing that from A both B and not-B follow; since what follows is impossible, A cannot be true. As a special case of such necessary falsity a self-contradictory proposition implies and contains both itself and its negation. It is from such a proposition, which is a falsehood, that its contradictory, which is a truth, directly follows. Der-Kennis concludes this elucidation with the cosmographical example about the spherical shape of the surface of the sea that Tacquet had presented in the appendix to his *Elementa geometriae*.

6.2 Finally, a few words may be added about Arnold Geulincx’s attitude towards the *consequentia mirabilis*. As is clear from several passages, he was a great admirer of that mode of arguing. Compared with other types of apodictic proof—a
priori demonstration, a posteriori demonstration, and reduction to absurdity—this kind has the highest degree of force and necessity. Mathematicians occasionally use such proofs, but even in mathematics they are exceptional. Geulincx calls this perfect form of proof dilemma, because of the expanded pattern in which it is sometimes set forth: 'If not-P, then P' is then supplemented by the truisms 'If P, then P' and 'P or not-P'. Together these premises lead to the conclusion that P is certain to the highest degree, since if it is true, it is true, and if it is false, it is likewise true. In contrast with the reduction to absurdity, which is an indirect negative demonstration, it is also called a direct negative demonstration: negative because it starts by supposing that the demonstrandum is false, and direct because the demonstrandum is inferred from its contradictory without any appeal to a reduction to absurdity. A peculiar feature of such a direct negative demonstration consists in the remarkable fact that everything that is adduced to corroborate the contradictory of a proposition which we want to prove may be turned into evidence for that proposition itself.

One example that Geulincx gives of this amazing mode of arguing is rather straightforward. The thesis that contradictory propositions cannot be simultaneously true is directly derivable from its negation because the supposition that contradictory propositions are simultaneously true is self-contradictory and contains both itself and the demonstrandum. Another example is of a somewhat different kind. If I say 'Some proposition is true', it does not matter whether an opponent concedes that my statement is true or contends that it is false, since I shall in any case be able to prove that it is true. For if it is true that some proposition is true, it is true. But if it is false, then it is true that no proposition is true, which means that at least one proposition, namely 'No proposition is true', is true. Obviously, what forces the adversary to admit that some proposition is true is not the mere state of affairs that no proposition is true, but rather the fact that he claims, by actually uttering the corresponding declarative sentence-token, that no proposition is true. It is what he does about a propositional content, not that propositional content itself, which makes his objection self-refuting. The act of presenting his denial that there are true propositions as true pragmatically annuls the very point he wants to make. It is along the lines of this second example that Geulincx elaborates an interesting interpretation of the argument behind Descartes's Cogito, ergo sum. Roughly speaking, the act of supposing that something is false pragmatically refutes that falsehood if it is logically incompatible with the notion of supposing, and thus proves the truth of the contradictory of the supposition. According to Geulincx, the primary truth of the Cartesian system ought to be established by means of the most incontrovertible kind of proof.

Although Geulincx nowhere refers to any specific items from which he obtained his knowledge of the mode of arguing he values so highly, it can hardly be doubted that Tacquet was an important source of inspiration for him. At the time when Tacquet propounded and defended his thesis at Louvain, Geulincx was living there, as an eager and ambitious teacher of philosophy in the College of the Lily. As he also showed intense interest in mathematics, it is not at all unlikely that he was among Tacquet's audience. Or, if he was not, his attention must surely have been drawn to this controversial issue by what others had to say about it, and, most probably, by the appendix which Tacquet added to his widely used textbook of geometry in 1654. At any rate, it is quite clear that both Der-Kennis and Geulincx fully share Tacquet's

36 For details see Nuchelmans 1991, ch. 9.
enthusiasm about this most perfect form of proof; moreover, they probably were the first in modern times to give it an application outside the field of mathematics.

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I. Introduction

As is well-known, the third book of John Locke's Essay concerning Human Understanding of 1690 contains his theory of language and meaning. Most typical of that theory is the often repeated thesis that words or names signify nothing immediately but the ideas in the mind of the speaker. Among Locke's commentators, some consider this thesis as being completely general and unrestricted. The most recent, and perhaps the most explicit, defender of this universal scope is Berman (1984); but a similar view has been expressed by Bennett (1971, p. 20), Henze (1971), Kelemen (1976, p. 20), and by philosophers of language who regard Locke as the champion of an ideational theory of meaning: for instance, Alston (1964, pp. 22-25), Harrison (1979, pp. 26-37). Others, however, are of the opinion that Locke acknowledged at least two exceptions to his main thesis, namely, particles (Essay, III, 7) and negative or privative words (Essay, III, 1, 4). That Berkeley already must have understood Locke as denying that particles stand for ideas is testified by two entries in his Philosophical Commentaries (1948, 661, 667). Many recent interpreters have followed his lead; to those mentioned by Berman (1984) one might add Kretzmann (1968, par. III), Land (1974, p. 8), Landesman (1976, p. 24, 34), Woozley (1976, p. 429), and Ashworth (1984, pp. 51-52).

I am firmly convinced that the latter view, according to which Locke admits two exceptions to his principal thesis, is the right one. This conviction is based partly upon evidence that, to my knowledge, has been neglected so far. It consists of some very fundamental distinctions that were widely known and commonly accepted in the scholastic tradition. My strategy will be as follows. Beginning with
particles, I shall first expound some relevant scholastic doctrines. Next, it will be shown that these doctrines were still quite familiar to Locke's contemporaries. Finally, and most importantly, I shall try to make it plausible that the pertinent text in Locke's Essay yields the most satisfactory sense if it is read in the light of the traditional views of the matter. After that, the passage about negative and privative words – which Berman (1984) adduces in support of his judgment that there are no exceptions – will be dealt with along the same lines.

II. Some traditional distinctions concerning particles

1. Pinborg (1967, p. 50) has drawn attention to a conception of the signification of the eight parts of speech that is found in an unpublished commentary Super Priscianum maiorem, written by Robert Kilwardby about 1250, and in many other manuscripts from the middle of the thirteenth century. According to that conception, a part of speech signifies either a mentis affectas or a mentis conceptus. Interjections are of the first type: they express an affective state or an emotion actually felt by the speaker. Incidentally it may be remarked that ancient grammarians ascribed the same feature to the moods of the verb, which in their opinion have regard to stances or inclinations that belong to the emotional and volitional aspects of the soul. But as a mood of the verb is not a part of speech, this category is not mentioned in Kilwardby's schema.

Of the second type are all other parts of speech; they are associated with the cognitive aspect of the soul, that is, with the faculty that conceives of things by an act of simple apprehension. There are, however, two fundamentally different kinds of parts of speech that have a connection with the mind's power of thinking of things. Nouns and verbs, and also pronouns and participles, signify a thing (res) – in a broad sense – straightforwardly; they signify per modum rei in that they represent their significate in the form of a thing that is put before the mind. By contrast, prepositions, adverbs, and conjunctions signify per modum circumstantiae rei, which means that they perform their semantic function, not in direct relation to a thing, but rather by adding some modification to an act of thinking directly of a thing as it is expressed by a noun or a verb. Such parts of speech operate as it
were in the neighbourhood of those which signify a thing. As it is
evident that the difference between the two groups of parts of speech
that signify a *mentis conceptus* corresponds to the distinction between
categorematic and syncategorematic signs, it is worth-while to have a
brief look at that latter distinction.

2. What came to be indicated by the pair ‘categorematic/syncatego-
rematic’ had its origin in Aristotle’s use of the verb *pros-semainein* in
connection with the copula ‘is’ and the quantifiers ‘every’ and ‘no’ in
*De interpretatione*, 16 b 20, and 20 a 13. As we learn from Priscian
(1855-1859, I, p. 54), subsequently all words that signify only in
combination with another expression were called *syn-katêgorêmata*,
translated in Latin as *con-significantia*. In contrast with such acces-
sory parts of speech, nouns and verbs, which have a relatively
independent meaning, came then to be characterized by the name
*categorema* or *categorematicus*. As it was gradually realized that
syncategorematic signs are of crucial importance for exhibiting the
exact logical form of the sentences in which they occur, from about
1200 onwards several treatises appeared which were dedicated to a
thorough examination of their logical behaviour. It is the merit of
Braakhuis (1979) to have made this valuable material more readily
accessible.

In general, categorematic terms were seen as those words – nouns
substantive and adjective, verbs, and also pronouns and participles –
which on their own can occupy the place of the subject or the
predicate in a categorical proposition. The mental counterparts which
such words signify immediately, or to which they are subordinate,
were said to belong to the first operation of the mind, that is, to that
type of apprehending by which the intellect simply conceives or thinks
of a thing, or – in the case of such collective signs as ‘army’ – of a
plurality of things. The ultimate significates of both mental and
spoken or written categorematic signs were held to be those items in
the world which, as substances or accidents, fall under one of the
categories distinguished by Aristotle.

Syncategorematic words, on the other hand, can perform their
semantic function only when they are adjoined to one or more
categorematic words. While a categorematic word acquires its mea-
ning by being accompanied by a mental act of conceiving of a thing
and thus signifies the thing thought of, the adjoined syncategorematic word expresses a mode or manner in which the thing concerned is apprehended by the mind. The syncategorematic act of the mind that makes the conventional syncategorematic sign meaningful modifies the relationship between the categorematic conception of a thing and its correlate in the world; it determines how a thing is conceived of. Correspondently, the spoken or written syncategorematic sign determines how the categorematic word to which it is adjoined stands for things in the world. Consequently, a syncategorematic sign has no significate of its own, in the sense of a thing signified by it; the thing signified is provided exclusively by the categorematic word with which it is combined. At the same time, it is evident that the syncategorematic sign, as a typical modifier, needs supplementation by something else on which the act of modifying can be brought to bear. Especially from the middle of the fourteenth century onwards the difference between the signification of a categorematic sign and the signification of a syncategorematic sign was usually brought out through the distinction between significare aliquid and significare aliqualiter. The signification of a categorematic sign regards an object of thought; in that case it always makes sense to ask 'What does it signify?'. The signification of a syncategorematic sign is purely adverbial in that it signifies a manner or form of thinking of a thing. It never makes sense to ask 'What does it signify?', but one can ask only 'How does it signify?' or 'How does it modify the signification of a categorematic sign?'.

Let us look at some examples. If someone meaningfully says 'Socrates is a Greek', he thinks of two things, of Socrates in particular and of Greeks in general, in such a way that the latter concept is predicatively and affirmatively tied to the former concept. The things conceived of are Socrates and Greeks, denoted by categorematic signs. The manner in which these objects are thought of is indicated by the syncategorematic copula. The whole sentence, therefore, signifies how things are. In saying 'Socrates is not a Greek' the speaker is thinking of exactly the same things, but in a different way: predicatively and negatively. The sentence 'Every man is an animal' is made meaningful by the complex thought which consists of a conception of men in general, a conception of animals in general, and a mode of thinking of these two kinds of thing which is such that the
latter concept is predicatively, affirmatively, and universally tied to the former concept. In principle, the same considerations apply to such overt connectives as 'and', 'or', 'if-then', and to such prepositions and adverbs as 'except' and 'only', which may figure in covertly compounded propositions. In the case of both categorical and molecular propositions it is always possible to ask two kinds of question: what are the things the speaker is thinking of, and how does he think of them. Together, the answers determine the way things are thought of and thus the truth-conditions for the various types of proposition. It may even happen that speakers who think of exactly one and the same thing frame quite different propositions about it by varying the mode in which they think of it. The propositions 'God is God', 'God is not God', 'Every God is God', 'No God is God', 'God is God or God is not God' are all about the same object of thought: the thing that may also be conceived of without any complexity, in an act of simple apprehension. The differences are entirely due to the divergent manners in which that one object is thought of; and those modes of thinking are contributed by the syncategorematic elements.

3. So far attention has been called to two divisions in the notion of signification: parts of speech signify either a *mentis affectus* or a *mentis conceptus*, and within the cognitive sphere some signify *per modum rei* or *aliquid* and others-*per modum circumstantiae rei* or *aliqualiter*. A third distinction contrasts both interjections and syncategorematic signs with categorematic signs. There are of course differences between interjections and syncategorematic signs. Interjections have a fairly independent meaning; in many cases they are as complete as whole sentences. Syncategorematic signs lack precisely that independence and completeness; by their very nature they stand in need of supplementation. But such differences do not prevent them from sharing a peculiar feature that is absent in categorematic signs. Interjections and syncategorematic signs resemble each other in that both express a certain state in which the speaker's soul - either its irrational or its rational part - actually is, whereas categorematic signs represent a thing which is in the mind only in so far as it is thought of and so becomes the object of a conception.

Some examples will make this clearer. When someone seriously and sincerely utters the interjection *euax* ('hurrah'), he gives expres-
sion to a feeling of exultation that actually and simultaneously affects him and of which euax is the commonly recognized mark (nota). The same kind of feeling may be signified also by the categorematic word gaudium ('joy'). But then it is put before the mind only as a thing conceived of and talked about; it is not necessarily—and perhaps usually not—an affective state in which the speaker himself at the moment of utterance actually is. Similarly, in uttering utinam ('o, if only') the speaker expresses a desire which at that moment really affects his soul, while in using the categorematic word desiderium he signifies that feeling merely as something conceived of, without necessarily experiencing it in his own soul. In a treatise De proprieta-tibus sermonum, dating from about 1200, the difference between the two cases is stressed by describing the feeling of exultation that is expressed by an interjection as a forma exercita, a kind of feeling actually instantiated by the speaker's soul, and the same feeling as it is signified by the word gaudium as merely something apprehensum et cogitatum in anima (De Rijk, 1967, pp. 708-709).

Now, in treatises concerning syncategorematic signs which appeared in the course of the thirteenth century and have been made accessible by Braakhuis (1979) there is a clear tendency to apply the above-mentioned distinction to syncategorematic signs as well. Without going into the rather complicated details of that development (Cf. Nuchelmans, forthcoming), we may summarize the outcome as follows. In the case of the particle non, for instance, it was held that a speaker who seriously utters it thereby expresses an inner state or attitude that he actually has and so performs an effective act of denying or negating. Such an actus exercitus can subsequently become the object of a second-order act of reflecting in which it is conceived of as a thing and then signified by such nouns and verbs as negatio and negare. As an object of reflection, the original act of negating was called actus conceptus or significatus (per modum conceptus). Considering things from the side of the speaker, it may be said that in using the particle non in order to negate he expresses a mode of thinking negatively which he actually performs, as an actus exercitus; therefore, he signifies negation in actu exercito or per modum affectus, that is, in that specific way in which an inner state or attitude really exemplified by the speaker's mind is conveyed to the
hearer by means of the special mark *non*. If, however, he reflects upon his act of negating and conceives of it as a thing or an action, he has to signify that same act in a different way, called *in actu significato* or *per modum conceptus*, by means of the categorematic words *negatio* or *negare*. Viewed from the angle of the linguistic expressions which the speaker employes as tools, the same difference of signification was also brought out by saying that *non* exercises or performs negation, but does not signify it as something conceived of, whereas *negatio* signifies negation as a thing conceived of, but does not actually negate. A striking example is the sentence *Negatio negat*, which is affirmative in spite of the fact that both the subject-term and the predicate-term signify negation. They signify negation only *per modum conceptus* and therefore cannot exercise any negative power.

The distinction *significare per modum affectus*/*per modum conceptus* or *significare in actu exercito*/*in actu significato* was elaborated for other syncategorematic signs in analogous ways. Just as ‘not’ may be contrasted with ‘negation’, so ‘is’ may be contrasted with ‘predication’ or ‘affirmation’, ‘every’ with ‘distribution’, ‘and’ with ‘copulation’, ‘or’ with ‘disjunction’, ‘except’ with ‘exception’, and ‘only’ with ‘exclusion’ or ‘limitation’. Two examples must suffice. As regards predication, such a sentence as ‘Man is an animal’ was commonly opposed to ‘A genus is predicated of a species’. The former sentence is an instance of *praedicatio exercita*, since the copula is actually used to perform an operation of combining affirmatively the concept of man and the concept of animal. In the second sentence, which is an example of *praedicatio significata*, the act effectively performed in the first sentence is only conceived of and accordingly signified by the categorematic word ‘predicated’. Further, the whole sentence ‘Socrates is running’, which as such was held to be a syncategorematic sign, exercises the function of affirming, but does not signify affirmation in the way it would be signified in, for instance, the sentence ‘Peter affirms that Socrates is running’ (Braakhuis, 1979, I, p. 205).
III. Reminiscences of the traditional distinctions in Locke's contemporaries

That the foregoing distinctions with respect to the many-sided notion of signification were still alive in the second half of the seventeenth century is proved by the fact that they reappear under a somewhat modified but clearly recognizable guise in some of Locke's contemporaries. In the widely-read *Grammaire générale et raisonnée* that was published by the Port-Royal authors Arnauld and Lancelot in 1660 the most fundamental division concerning that which goes on in the mind is said to be the distinction between objects of thought and forms or manners of thinking (1660, II, 1). To the latter category belong, first of all, predications or judgments, but also such operations as conjoining and disjoining, and all other movements of the soul, such as desires, commands, and interrogations. It is upon this crucial distinction that the authors base their main division of the parts of speech. A few years later John Wilkins, in *An Essay towards a Real Character and a Philosophical Language* of 1668, divided words into integrals, that is, the more principal, such as signify some entire thing or notion, and particles, the less principal, such as consignify and serve to circumstantiate other words with which they are joined (1668, II, 1-2).

Moreover – and that is a point of particular importance – in both treatises interjections and such syncategorematic signs as the copula and connectives are jointly contrasted with words that signify an object of thought or a thing conceived of. That this division is rooted in the old distinction between *significare per modum affectus* and *significare per modum conceptus* is made abundantly clear by the much more explicit treatment of this matter in Arnold Geulincx' *Logica* of 1662, and in his *Dictata ad logicam*. There Geulincx carefully explains what is meant by the word *nota*. It is a mark of an act as performed (*signum actus ut exerciti*), that is, a sign by which we signify some act or state of ourselves – such as affirmation, negation, love, hate – not in abstraction, as when its name is introduced into discourse, but rather as it is here and now performed or felt by us (*signum quo significamus actum aliquem nostrum (ut affirmationem, negationem, amorem, odium etc.) non simpliciter (qualiter etiam est cum nomen suum importatur), sed prout hic et nunc a nobis exece-
There are two kinds of such marks: marks of the intellectual part of the soul and marks of the emotional or voluntative part. To the latter group belong also gestures, facial expressions, and modulations of the voice. For the purposes of logic only the marks of the intellectual acts are important; they indicate that the speaker is actually performing an act of affirming, denying, inferring, supposing, assuming, conjoining, disjoining, prescinding, distributing etc. (Geulincx, 1891-1893, I, p. 176, 403-405, 462-463, II, p. 148). Although, as a logician, Geulincx stresses the difference between the two types of mark, yet he leaves no doubt as to the peculiar mode of signifying that is common to them and justifies their being gathered into a separate class of marks of manners of thinking, as opposed to categorematic signs of objects of thought.

That Locke's contemporaries were fully aware of this difference between signification in actu exercito and signification in actu significato is further confirmed by two remarkable passages in the chapter on the verb (II, 2) that was added to Arnauld and Nicole's La logique ou l'art de penser (1662) in the fifth edition of 1683. The authors, who regard the copula as the only genuine verb, characterize its principal function as consisting in being a mark of affirmation. The finite verb indicates that the discourse in which it occurs is the discourse of someone who does not only conceive of things, but passes judgment on them as well. It is precisely in this respect that the copula-element in the finite verb differs from such names as affirmans and affirmatio. The latter words also signify affirmation, but only in so far as an actual operation of affirming has become, by a mental act of reflecting, an object of thought. Consequently, they do not signal that the speaker performs an act of affirming; what they signify is the act as a thing conceived of. In the sentence Petrus affirmat, which is equivalent to Petrus est affirmans, there are therefore two affirmations: a performed or produced affirmation, of which the copula is the proper mark, and a conceived affirmation, which is signified by affirmans and attributed to Peter. Analogously, the sentence Nego, which is equivalent to Ego sum negans, contains a performed affirmation and a conceived negation.
IV. Locke on particles

In the light of the distinctions outlined above, which were a widely-known and generally accepted component of traditional philosophy of language and were still quite familiar to those who had occasion to discuss the same subject in the second half of the seventeenth century, the answer to the question as to how Locke's chapter 'Of Particles' is to be interpreted becomes almost unmistakable. Far from being ambiguous, the first two sentences state clearly that there are two different kinds of words: words which are names of ideas in the mind, that is, categorematic signs of objects of thought, and other words, which indicate the forms of thinking by which ideas and propositions are connected. Especially the second sentence – 'The mind, in communicating its thought to others, does not only need signs of the ideas it has then before it, but others also, to shew or intimate some particular action of its own, at that time, relating to those ideas' – contains a description of non-categorematic words that is remarkably similar to Geulincx' characterization of notae: Nota est signum actus ut exerciti, i.e. signum quo significamus actum aliquem nostrum --- prout hic et nunc a nobis exercetur. The two features that make those words which signify in actu exercito or per modum affectus different from categorematic signs of things thought of are precisely that they intimate to the audience that the speaker himself is, at the very moment of utterance, performing a mental act or experiencing a certain feeling with respect to things he has before the mind as objects of thought.

The peculiar mode of signifying that is typical of non-categorematic words has as subject the speaker, the speaker's mind, or the particular word employed. For the relation itself Locke sometimes uses the general verb 'to signify', but also, and strikingly often, 'to show' and 'to intimate'. These latter verbs seem to be exactly right for indicating the way in which the speaker – and thus the word he uses – reveals a mental act or state of his own which he currently performs or experiences. By uttering the appropriate mark the speaker discloses to the hearer what he is effectively doing and how he is feeling. As is to be expected by now, the complements of those verbs belong to two broad categories. First, most of the examples given by Locke concern the performance of those actions of the mind of which syncategore-
matic words are the conventional marks: such familiar items as affirming, denying, limiting, excepting, restricting, opposing, and supposing. But in addition to this rather loosely circumscribed group of actions by which the mind connects ideas and propositions, Locke also mentions the several views, postures, stands, and turns of the mind. These expressions suggest that he was also thinking of such affective states as are commonly revealed by interjections and certain words that accompany wishes, questions, threats, exclamations, and the like. This suggestion is fully confirmed by a passage in Essay, II, 1, 4, where Locke explains that he uses the term 'operations' in a large sense, as comprehending not barely the actions of the mind about its ideas, but some sort of passions arising sometimes from them, such as the satisfaction or uneasiness arising from any thought. Moreover, it is not impossible that by the particles which in the last sentence of the chapter are described as constantly having the sense of a whole sentence contained in them Locke means – perhaps inter alia – interjections. John Wilkins (1668, III, 2, 2; cf. Michael, 1970, p. 464) had characterized interjections as substitutive particles, because they supply the room of some sentence or complex part of it. However that may be, there is already sufficient evidence that Locke, in his own, rather informal way, adhered to the established doctrine that both syncategorematic words and marks of affective states of the soul signify in a way that is entirely different from the way in which categorematic words signify things conceived of, that is, ideas in the mind or objects of thought.

Some commentators (Kretzmann, 1968, par. III; Land, 1974, p. 8) have brought up the question whether or not Locke considers verbs as belonging to the class of signs for ideas, without apparently feeling able to offer a definite answer to it. It seems to me that the fact that Locke does not discuss verbs as such in the third book of the Essay is explained most satisfactorily by the assumption that he follows, among others, the authors of the Port-Royal Grammar and Logic in regarding the copula as the only genuine verb; and, being a syncategorematic mark of the performance of an act of affirming, the copula is not a sign of an idea. According to Wilkins too, a verb ought to have no distinct place amongst integrals in a philosophical grammar, because it is really no other than an adjective and the copula sum affixed to it or contained in it (1668, III, 1, 8).
Particles, then, in so far as they are actually used, are marks of some action, posture, or feeling exemplified by the speaker's mind at the moment of utterance. But this group of words, together with the significance and force they have, may also become an object of study and research, as indeed is the case in the modest chapter devoted to them by Locke. Someone who wants to describe, classify and explain their use and force in language must enter into his own thoughts and observe nicely the several actions and postures of his mind in discoursing. From the second-order vantage-point taken by philosophers and grammarians, the performed acts and felt states of which particles are marks when actually used, are contemplated and examined through acts of reflecting and thus become objects of thought and ideas of reflection. As such, of course, they can no longer be expressed by particles; the appropriate linguistic tools by which they are then mentioned and denoted as things conceived of are those words which are names of ideas in the mind. Accordingly, when Locke calls the operations of our own minds within ideas, as elsewhere he very often does, he is practically always careful to add the restriction that they are ideas only as the objects of reflection. In all probability, he would have deemed it simply preposterous to hold that a speaker could, at the same time and in the very same stance, reveal what is going on in his mind by means of some particle and refer to it, as something conceived of and reflected upon, by the appropriate name; let alone that those two significations are identical. Those commentators who are reluctant to admit that particles are an exception to the principal thesis of Locke's semantics may have been misled by the fact that in Essay, III, 7, the author, while also using particles all the time, is primarily concerned with speaking about them and in doing so is forced to employ a terminology that is fit for mentioning and naming that which particles, at the object-level, actually express and bring about. But from the circumstance that the observer of linguistic usage is naturally led to avail himself of a vocabulary that has a signification in actu significato and per modum conceptus and thus consists of names of ideas of reflection it does not at all follow that the words described have the same signification. For Locke, we may conclude, the signification of 'only' was as different from the signification of 'limitation' as the signification of 'hurrah' differs from that of 'joy'. 
V. Locke on negative names

Berman (1984) supports his contention that there are no exceptions to the main thesis of Locke's theory of meaning by referring to Essay, III, 1, 4, where some remarks are made about such negative or privative names as nihil, 'ignorance', and 'barrenness'. It is therefore necessary to have a closer look at that passage, and also at Essay, II, 8, 5, where the same subject is touched upon, with as additional examples 'insipid' and 'silence'. But before trying to settle the issue concerning the right interpretation of those passages, it may again be helpful to glance at the way in which such words were handled in the scholastic tradition.

Let us take as an influential representative of that line of thought John Buridan (Cf. Buridanus, 1983, I, q.2, pp. 7-14; Buridanus, 1977, I, p. 25 ff.; Buridanus, 1518, VI, q.6, fol. 37 V b). In accordance with Aristotle, De anima, III, 6, 430 a 26, Buridan regards a categorematic concept as simple – in one sense of that word – if it conforms to the following criteria. First, it is, as such, always a concept of something. It cannot be empty or unsatisfied or false in a large sense; there is, has been, will be, or possibly is something corresponding to it in the world of things. Moreover, as far as supposition is concerned, a simple concept stands in a mental proposition for everything conceived of by it. Finally, since it is one likeness of a thing or of more than one thing, the corresponding vocal term does not have a nominal definition. Concepts that do not meet these requirements are complex. But, like many other authors, Buridan goes on to draw a distinction between complexio distans and complexio indistans. The former type of combination is found in predication and assertion, where a predicate-concept is tied to a subject-concept through the syncategorematic act expressed by the copula, as in ‘Man is an animal’. Such propositional complexes are true or false in a strict sense. A complexio indistans, on the other hand, is a way of combining concepts into one complex concept without an intervenient copula. Examples are the complex concepts signified by such phrases as homo albus and homo non albus: the concept of man and the concept of white are either compounded, not predicatively but as determinable and determinant, in an affirmative way, or divided, in a negative way. The speaker who meaningfully and seriously utters those phrases thinks of men in
general and of white in general in such a manner that the two thoughts are non-predicatively and either positively or negatively joined together and come to form a complex conception of all men that are white or of all men that are not white. Two objects of thought coalesce by being apprehended in a certain mode of thinking; and the resulting complex conception differs from a simple concept in that it may either have a correlate in the world or prove to be empty, that is, may be either true or false in a large sense. That means that through such complex conceptions as are signified by *mons aureus* and *homo non risibilis* a person is actually thinking of the objects denoted by the categorematic words for mountains and golden things and for men and beings that are capable of laughing, but that he is doing so in such a manner that the whole construction cannot stand for any thing in the world. While there are mountains and golden things and men and beings that are capable of laughing, there is nothing that would be both a mountain and made of gold and nothing that would be both a man and not capable of laughing. In such cases signification and supposition fall apart: although the complex concept is a natural sign of all things signified by the compounding parts, in the context of a proposition it does not stand for anything.

Now sometimes a complex concept is conventionally signified by a single word. Buridan considers the word *vacuum* as synonymous with the phrase * locus non repletus corpore*. In thinking the complex concept that is made explicit in the corresponding phrase, a speaker is therefore thinking of all places and of all things that are filled and of all bodies (*Significat enim omnia loca et omnia repleta et omnia corpora propter illos terminos ‘locus’ et ‘repletus’ et ‘corpore’*). But since he conceives of those objects both *modo complexivo* (indistinctly) and *modo negativo*, the resulting complex concept is empty and therefore the word *vacuum* cannot stand for any thing in the world (*pro nullo supponit*). As William of Ockham puts it (1974, II, 14), by such an empty term as *vacuum* nothing is signified except what is signified by the several categorematic terms that figure in its nominal definition. The difference between the significations of the separate terms and the import of *vacuum* lies in the peculiar mode of signifying that is included in the meaning of *vacuum*. Whereas the separate terms occurring in the nominal definition signify things for which they can stand in the context of a proposition, in the complex conception that is
associated with \textit{vacuum} the same objects of thought are brought together in such a manner that the word \textit{vacuum} cannot stand for anything. This difference is not caused by any change in the set of objects that are before the mind, but is entirely due to the manner in which those objects are thought of in the complex conception that lends meaning to the word \textit{vacuum}.

Analogously, Ockham holds that such negative and privative words as ‘immaterial’, ‘non-man’, and ‘blind’ signify nothing except what is signified by the positive terms ‘material’, ‘man’, and ‘able to see’. But although exactly the same things are signified by the positive and the negative term, in the first case they are signified and thought of affirmatively, or positively and constructively, whereas in the second case they are signified and thought of negatively and destructively. In comparison with the group of complex concepts discussed above the only difference lies in the fact that here the complexity is due, not to a \textit{complexio indistans} of two categorematic concepts that are combined as determinable and determinant, but rather to a combination of a categorematic concept and a syncategorematic act (of negating). In the same vein, Buridan states that the word \textit{nihil} includes both the element \textit{non} – a syncategorematic sign – and the element \textit{aliquid}. Someone who uses the word \textit{nihil} thinks of all the things signified by the categorematic sign \textit{aliquid}, but his act of thinking of those things is modified by a simultaneously performed act of negating of which \textit{non} is the proper mark. We might also say that the answer to the question ‘What does \textit{nihil} signify?’ is ‘All entities, past, actual, future, and possible’, while the answer to the question ‘How does \textit{nihil} signify those things?’ is ‘In a negative manner’.

It should be noted that in this context simple concepts are contrasted with concepts that are made complex either by a \textit{complexio indistans} or by a \textit{complexio distans} and may therefore be, in a broad sense, false as well as true. From a different angle, both simple and complex concepts that can be subject or predicate of a proposition, at the subpropositional level of simple apprehension, were contrasted with propositional complexes that are true or false in a strict sense.

That the approach favoured by Ockham and Buridan remained attractive to later generations is proved, for instance, by the Spanish logician Ferdinandus Enzinas, who about 1520 wrote a commentary on Peter of Spain’s \textit{Summulae}, in which he dwells at considerable
length upon the question as to whether infinite or negative terms are subordinate to incomplex concepts (1520, fol. 3). According to Enzinas, there were two views of the matter: an affirmative answer was given by some antiqui, whereas the common opinion defended a negative answer. Adherents of the first view held that such an infinite term as 'non-man' is subordinate to a simple concept that naturally signifies something, while connoting that it is not a man (dicunt ly 'non homo' subordinari conceptui simplici significanti aliquid connotando illud non esse hominem). This view seems to be a special case of the doctrine according to which such a word as album connotes the abstract property of whiteness and denotes some substance by which that property is exemplified. One of its awkward consequences, however, is that both the notion of being a man and the notion of not being a man are simple concepts on this interpretation; and it is rather unclear how a simple concept of not being a man could be abstracted from the world of concrete things. After discussing such objections and possible replies, Enzinas sets out the common opinion, according to which infinite terms are subordinate to a categorematic concept and a syncategorematic act, and are therefore complex. In the case of 'non-man', for instance, the ingredient 'man' signifies men and the element 'non' signifies negatively. The whole complex signifies men negatively, that is, all things that are not men (ly 'homo' significat homines et negatio significat abnegative; totum complexum significat homines abnegative, id est, ea quae non sunt homines). This opinion, defended by Enzinas himself, is in all essential respects identical with the view upheld by Ockham and Buridan. For us, its most important component is the claim that as far as objects of thought are concerned there is no difference between a positive and a negative term. Since the categorematic signs remain the same, there simply cannot be any things conceived of that are signified by the negative term but not by the positive term. The obvious difference between the two kinds of term is entirely accounted for by the syncategorematic act of negating that comes to modify the natural signification of the concept associated with the positive term. And a syncategorematic sign never signifies aliquid, but only aliqualiter, in this case abnegative or negatively.

In the light of the foregoing outline of the predominant traditional elucidation of the meaning of negative names the passages Essay, II,
8, 5, and III, 1, 4, lose, I submit, much of the curiousness and peculiarity that is attributed to them even by such able commentators as Kretzmann (1968, par. III) and Ashworth (1984, p. 51). When Locke declares that negative or privative names do not stand directly for positive ideas and that they are not used by men to signify any idea, he actually means, I suggest, that they do not stand for an idea in the same way as the corresponding positive name stands for an idea, and that they are not used by men to signify an idea in the same way as positive names are used to signify an idea. At the same time, Locke is aware that such words cannot be said properly to belong to, or signify no ideas at all; for then they would be perfectly insignificant sounds. The correct explanation of their meaning is that they denote, or relate to, the ideas which are signified by the corresponding positive names, but that additionally they signify their absence. That is to say, negative names are associated with a complex conception that includes, first, a categorematic sign of things, namely the idea that is also signified by the corresponding positive name, and, secondly, a simultaneously performed syncategorematic act of negating that modifies the relationship between the positive idea and things in the world in such a way that the whole conception applies only to those things which do not satisfy the idea associated with the positive name. What Locke wishes to counter is the view that there is, in addition to the ideas signified by positive names, a class of extra ideas that correspond to negative names as such. According to him, the meaningfulness of negative names should rather be accounted for by the circumstance that they are linked to a complex conception that consists in an act of thinking negatively the very same idea as would be the content of the thought that would accompany the positive component of the negative name if that positive part were to stand by itself.

This interpretation is concordant with what Hobbes had observed on negative names, in section 7 of the second chapter of his Computatio sive logica of 1655. He describes negative names as those names which are made by adding the negative particle non to a positive name. By such negative names we take notice ourselves, and signify to others what we have not thought of (quid non cogitavimus); or, as he might have put it less ambiguously, what we have thought of negatively. Furthermore, the brief remarks that Leibniz makes about
our two passages in his *Nouveaux essais sur l’entendement humain* prove that he read Locke as denying that there are any privative ideas.

It may, then, be concluded that the two passages about negative names are far from corroborating the claim that there are no exceptions to the main thesis of Locke’s semantics. In point of fact, those passages make sense only if they are interpreted as dealing with a special case of that peculiar mode of signifying of particles which is opposed to the signification of names in *Essay*, III, 7. At bottom, what Locke says about negative names is simply an application of his general view of the signification of particles.

REFERENCES

ON THE FOURFOLD ROOT
OF THE ARGUMENTUM AD HOMINEM

The June 1991 issue of the Dutch journal Tijdschrift voor taalbeheersing was devoted to the argumentum ad hominem. From the contents of the several articles it appears that recent research in this field is concentrated mainly on the systematic question of how to assign to this phrase a meaning that would earn it a proper place within the terminology of the theory of argumentation or informal logic. Though the history of the expression is made the subject of an introductory article by Van Eemeren and Grootendorst', these authors do not endeavour to bridge the considerable gap between Aristotle's De sophisticis elenchis, 22, 178 b 17 (pros ton anthrōpon), and either Galileo, to whom Finocchiaro has drawn attention,² or Locke, whose importance has been emphasized by Hamblin.³ In the following contribution I attempt to show that in order to make sense of the phrase argumentum ad hominem we have to take into account at least four different passages in Aristotle’s œuvre and at least four strands in the developments that have their origin in those passages.

1. Arguing from Views Held by the Respondent

At De sophisticis elenchis, 2, 165 a 37 ff., Aristotle distinguishes four kinds of arguments used in discussion: doctrinal or demonstrative, dialectical, eristic, and what he calls peirastikoi logoi, arguments that are fitted to test someone’s alleged knowledge and are based on views held by the respondent. The same type of argument is no doubt meant when he says, at Topics, 1, 2, 101 a 25 ff., that the subject he is going to treat is useful with respect to social intercourse, since having summed up the opinions of ordinary people we shall be able to converse with them setting out, not from views that others hold, but from their own views, and thus to correct them where to us they seem to be wrong.

From Boethius onwards this 'peirastic' way of arguing was called in Latin *disputatio temptativa*. As is clear from texts edited by De Rijk, 4 this phrase regularly appears in the commentaries on the *De sophisticis elenchis* which began to be composed in the course of the twelfth century. From there it also found its way into such textbooks of logic as were written by Peter of Spain and William of Sherwood towards the middle of the thirteenth century. Concerning this tradition, which can easily be traced until the end of the seventeenth century, two points are worthy of note. First, it is highly probable that the name *ex concessis*, which became one of the usual designations of arguments that are based on propositions which have been conceded by the adversary, had its origin in elucidations of the *disputatio temptativa*. Someone who argues in that manner is said to infer a conclusion from the proposition initially put forward and other propositions conceded by the adversary (*ex illa atque aliis sibi concessis*), and to use a tentative syllogism, which proceeds from statements admitted by the adversary (*ex datis*) and is composed of elements that appear to be true to the adversary and are conceded by him (*fit ex his, quae videntur et conceduntur a respondente*). 5

Further, a distinction is drawn between arguments that proceed from propositions which are generally considered to be acceptable and arguments proceeding from propositions that are considered to be acceptable only by the respondent. The first type is said to proceed *ex communi probabili* or from a statement that is *probabile simpliciter*, whereas the second type is characterized as proceeding *ex particulari probabili* or from a statement that is merely *probabile secundum quid*. 6 In other words, a tentative disputation involves inferences from premisses that are acceptable, not in a general or absolute sense, but only in the restricted sense of being conceded by the particular respondent with whom one happens to be arguing. Consequently, such reasonings have only a limited and relative probative force.

### 2. Demonstrating First Truths

What seems to be a special case of the *peirastikos logos* is to be found in two passages of Aristotle's *Metaphysics* where he discusses the principle according to which the same thing cannot at one and the same time be and not be. At IV, 4, 1005 b 35 ff., he draws a distinction between proving as

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such (apodeikṣai) and proving by way of refutation (apodeikṣai elengktikōs). Although common principles or first truths cannot be demonstrated in an unqualified sense, it is possible to demonstrate them to the extent that one succeeds in eliciting from a respondent an admission which is in fact identical with, for instance, the principle that the same thing cannot be and not be at one and the same time, but does not directly seem to be identical with it. Now this distinction between apodeikṣai and apodeikṣai elengktikōs is expressed in a slightly different way at Metaphysics, XI, 5, 1062 a 2 ff., where Aristotle again considers the law of non-contradiction. About such principles, he says, there is no proof in any absolute sense (haplōs), but only relatively to this particular person here and now (pros tōnde). Here the adverb haplōs, which is the negation of any relativity, is contrasted with a phrase consisting of the preposition pros as a sign of relatedness and either the demonstrative pronoun tōnde or such expressions as ton legonta, ton phaskonta, ton tauta tiθhemenon, which stand for the respondent who initially denies the principle. What Aristotle wants to stress, then, is the relative nature of the sole way of proving first truths. Such proofs have some force only in relation to an adversary who can be brought to admit something that is a latent version of the principle in question or presupposes it.

One of the early Latin commentaries on Aristotle's Metaphysics was written by Thomas Aquinas, about 1265. In connection with Metaphysics, IV, 4, he draws attention to the difference between demonstrare simpliciter and demonstrare elenchice, argumentative or redarguītive, which are the translations of apodeikṣai haplōs and apodeikṣai elengktikōs. A proof by way of refutation is said to proceed from something that has been conceded by the adversary (concessum ab adversario), in order to prove the principle in question at least in so far as he is concerned (ad praedictum principium ostendendum quantum ad ipsum). With respect to Metaphysics, V, 5, 1015 b 8, where the clause quod demonstratum est simpliciter occurs, Aquinas refers to the elucidation already given, opposing a demonstration in an absolute sense to a demonstration that is relative to someone (ad aliquem) or relative to a person who is taking part in the discussion (ad hominem argumentem). Finally, in connection with Metaphysics, XI, 5, Aquinas characterizes a proof by way of refutation as a demonstratio ad hominem, that is, as a proof directed at a person who denies a principle but concedes something else that is

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8. Compare also Categories, 7, 6 a 36 ff.; De sophisticis elenchis, 5, 166 b 37 ff.; Posterior Analytics, I, 10, 76 b 29-30.
necessarily connected with it. There we also find the phrase *disputare ad hominem*.\(^9\)

In the same vein, Aquinas contrasts a genuine demonstration (*vera demonstratio*) with an *ostensio ad hominem* in his commentary on the *Posterior Analytics*.\(^10\) Further, a reference to *Metaphysics*, IV, 4, is made in an annotation on the first book of Aristotle's *Physics*, where Aquinas has occasion to explain that against people who deny a principle one cannot conduct a proof in an absolute sense, but that they can be confuted through a demonstration that proceeds from that which the adversary assumes (*ex iis quae supponuntur ab adversario*).\(^11\)

As we shall see later, Boethius had translated the phrase *pros ton anthrōpon* which occurs at *De sophisticis elenchis*, 22, 178 b 17, by *ad hominem*, an expression which also frequently appears in Latin commentaries on that treatise. Aquinas was no doubt familiar with that usage, so that he may have been influenced by it in forming the phrase *demonstratio ad hominem*. On the other hand, the formation of such a phrase was a very natural step to take in discussing the peculiarities of the *disputatio temptativa*. However that may be, it is practically certain that the combination *demonstratio ad hominem* in the sense of an argument *ex concessis* started its long career from Aquinas' influential commentary on Aristotle's *Metaphysics*.

3. **One Meaning of argumentum ad hominem**

On the one hand, the *argumentum ad hominem* remained connected with common principles or first truths as they are treated in metaphysics. Towards the end of the sixteenth century, for instance, Peter Fonseca remarks, in connection with *Metaphysics*, IV, 4, that according to Aristotle a first principle can be demonstrated only *ad hominem*, namely, by way of confuting the person who has denied it by making use of his own words (*ex dictis illius*).\(^12\) About a century later Leibniz even declares that in a certain sense every demonstration is *ad hominem*, since the principles on which proofs are

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ultimately based can be vindicated by invoking propositions that have been conceded or assumed by the adversary.\textsuperscript{13}

But especially in the seventeenth century the name \textit{argumentum ad hominem} was used for arguing in the peculiar way described about any subject matter whatever. In that sense the phrase occurs at three places in Galileo's works, as Finocchiaro has shown, and in Locke's \textit{Essay Concerning Human Understanding} of 1690, at IV, 17, 21. There are, however, many other places where the argument is either simply employed or explained. In 1623, the year in which Galileo published \textit{Il saggiatore}, the notorious French Jesuit François Garasse said of the free-thinkers who based their doctrines on certain passages in the Bible that they argue \textit{ad hominem}, 'as they say in the schools'.\textsuperscript{14} At that time, then, the expression was felt to be already firmly established in the past. Joachim Jungius, in the \textit{Logica Hamburgensis} of 1638, states that dialectical argumentation taken in a broad sense comprises also the type of argument that is called \textit{e concessis}, when namely we draw a conclusion from assumptions that are perhaps not very probable but are conceded and accepted by the adversary. That kind of arguing, he adds, is also called \textit{argumentatio ad hominem}.\textsuperscript{15} In connection with the thesis that from premisses which are false but are held or assumed to be true a true as well as a false conclusion can be drawn, Pierre Gassendi observes that the kind of arguing which Aristotle calls hypothetical and which is commonly called \textit{argumentum ad hominem}, is a case in point. For if the person with whom we are arguing has admitted something, whether true or false, we may take it to be true according to his lights and draw a conclusion that is opposite to the opinion which he defends.\textsuperscript{16} In his \textit{Logica} of 1662 Arnold Geulincx explains that in the so-called \textit{argumentum ad hominem} we assume someone's opinion as antecedent and draw an absurd conclusion from it in order to refute that opinion, according to the rule that a falsehood follows only from a falsehood.\textsuperscript{17} Finally, Girolamo Saccheri, in the \textit{Logica demonstrativa} of 1697, paraphrases Aristotle's \textit{Topics}, I, 2, 101 a 25 ff., by saying that when we know the beliefs of some sect we shall be able to argue against the adherents in a way called \textit{ad hominem}, confuting them on the basis of their own beliefs and principles. And in connection with \textit{De sophisticis elenchis}, 2, 165 a 37 ff., he remarks that the \textit{disputatio temptativa}

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\item F. Garasse, \textit{La doctrine curieuse des beaux-esprits de ce temps}, Paris, 1623, p. 186.
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is a type of argument that by his time was usually designated by the name
\textit{ad hominem} (\textit{quae argumentatio iam nunc usitato vocabulo dicitur ad
hominem}).

In the passage from Isaac Watts’ \textit{Logic} of 1725 which is quoted by
Hamblin, \textit{Fallacies}, pp. 163-164, the \textit{argumentum ad hominem}, though being grouped
together with several other \textit{ad}-arguments, still preserves its original character
of being an argument built upon the professed principles or opinions of the
person with whom we are arguing, whether these opinions be true or false.
In that sense it continued to be used and mentioned in the eighteenth
century, for example by David Hartley, Thomas Reid, and Jeremy Bentham.

It is interesting to note that in the treatise on logic composed by Samuel Christian
Hollmann in 1767 the demonstration \textit{kat’anthrōpon} is contrasted with the
demonstration \textit{kat’alitheian}. While in the latter case the proof is based on
principles that the proponent himself holds to be true, in the former case
the demonstration proceeds from views admitted by the respondent and adopted
solely for the purpose of drawing certain conclusions from them. The same
contrast is discussed by Bernhard Bolzano in his \textit{Wissenschaftslehre}, of 1837,
where the demonstration \textit{kat’anthrōpon} is also called \textit{ex concessis} and \textit{ad
hominem}.

Similarly, Schopenhauer, in his notes on eristic dialectic, draws
a distinction between arguments \textit{ad rem} and arguments \textit{ad hominem} or \textit{ex
concessis}. Moreover, he is careful to distinguish the latter sort from the artifice
of attacking the adversary personally, which, he wisely suggests, it would
be better to call \textit{argumentum ad personam}.

Lastly, in order to close the
circle, we may mention that the neo-scholastic author Tilmann Pesch, in
his \textit{Institutiones logicales} of 1888, still describes the \textit{argumentum ad hominem}
exclusively as an argument \textit{ex datis}, that is, as an argument that proceeds
from principles which as such may be false or dubious but are held to be
true by the adversary. At the same time, he rightly observes that such an
argument does not definitively establish the truth of the thesis concerned
but serves only to force the adversary to concede its truth from his point
of view.

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p. 222, p. 240.
20. S. Chr. Hollmann, \textit{Philosophia rationalis}, Göttingen, 1767, Par. 493, p. 650; B. Bolzano,
\textit{Wissenschaftslehre}, Sulzbach, 1837, IV, Par. 534; cf. also Par. 456.
21. A. Schopenhauer, \textit{Eristische Dialektik in Der handschriftliche Nachlass}, ed. A. Hübscher,
Argumentum ad hominem

Drawing the threads together, we may conclude that the *argumentum ad hominem* in this narrow sense is a kind of demonstration that is perfectly respectable but is nonetheless inferior to an apodictic proof in that its probative force is merely relative and limited, inasmuch as it depends upon premisses that in spite of being admitted by a particular respondent may in reality be false.

4. A Second-Best Way of Dealing with Sophisms

The passage in Aristotle’s writings that is usually thought to be especially relevant in connection with the history of the expression *ad hominem* is *De sophisticis elenchis*, 22, 178 b 17. There (and at other places, for instance, 177 b 33-34, 183 a 21-26) Aristotle contrasts what he regards to be the proper way of handling sophisms, namely, by directing a refutation at the argument (*luein pros ton logon*), with methods which invoke factors that are less pertinent from a logical point of view, such as the person of the questioner (*pros ton anthrôpon*). Through Boethius’ translation this contrast became known in Latin as a *solutio ad hominem* versus a *solutio ad orationem*. In a twelfth-century commentary this pair is also indicated as the difference between a false and a true solution. The first type is said to be *ad hominem* because it does not attack the fault in the argument but tries to prevent the questioning person from achieving his aim by answering in a twisted or inappropriate manner (*distomc aut male respondendo*).23 Another commentator of the same period explains that by using the phrase *solutio ad hominem* Aristotle intends to point out how to a cunning way of questioning one should give an even more cunning answer, in order to unsettle the questioner (*ta scilicet sic interrogantem disturbet si potest*).24 In the thirteenth century Albert the Great characterizes the *solutio ad hominem* as a pseudo-solution (*apparen solutio*) and discusses it fairly extensively.25

5. The Distinction res/persona in Rhetoric

Teachers of rhetoric commonly drew attention to the difference between the substantive issue or the matter of the case and, on the other hand, the various personal aspects that may be involved in debates. Right at the beginning of his *Rhetoric* (I, 1) Aristotle criticizes conceptions of the subject that one-sidedly concentrate on features which lie outside the actual case (*eksô tou pragmatos*). One of the factors that came to be opposed to the actual case (*to pragma*) was the person of the disputant (*to prosôpon*). Hermogenes, in the treatise

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on invention composed in the second half of the second century, clarifies by many examples the difference between proofs or refutations that are based on the matter of the case and proofs or refutations that highlight the person concerned (apo tou prosōpou). About half a century later Apsines observes that in general a counter-objection (antiparastasis) focuses either on the person or on the matter of the case.

Latin authors expressed the same distinction either by contrasting the persona with the negotium, the causa or by contrasting the homo with the res or the causa. Two points are worthy of note. In general, for rhetoricians appeals to personal features are quite respectable in so far as they are effective from the viewpoint of persuasive force. Only in one case they consider such an appeal as incorrect (vitosum, vitium), namely, when an art or science is reviled by pointing to imperfections of individual persons who practise it; for instance, when rhetoric is reviled on the ground that some orator leads a reprehensible life. Further, one of the parts of rhetoric where the distinction is regularly applied is the refutation, often called lusis in Greek and refutatio, confutatio or solutio in Latin.

6. A Second Meaning of argumentum ad hominem

It is in Rudolph Agricola's De inventione dialectica of 1479 that the traditions described in the last two sections became intertwined. In chapter 21 of Book II he discusses the ways in which an argument is refuted (Quam multis modis argumentatio solvatur). A genuine refutation proceeds by attacking a premiss or by denying that the conclusion follows from the premisses or by directing attention to an ambiguity; it is commonly called a solutio ad rem. But there are other ways of refuting, or escaping, which are generally called solutiones ad hominem and in which we take refuge when little help is expected from the matter of the case. Roughly, there are three ways of escaping. We may repel an adversary by a rebuttal that consists in an equally serious countercharge or in the claim that for some reason it does not behove the adversary to utter the accusation in question. Or we may attempt to trivialize

28. Cicero, De inventione, I, 24, 34; 42, 78; 53, 100; II, 9, 28; 13, 42; Boethius, De differentiis topicis, Patrologia Latina, ed. Migne, 64, col. 1212 a ff.
29. Cicero, De inventione, I, 16, 22; II, 5, 16; Quintilian, Institutio oratoria, IV, 1, 6.
30. Rhetorica ad Herennium, I, 4, 8; III, 6, 11; Quintilian, Institutio oratoria, V, 8-10.
31. Cicero, De inventione, I, 17, 24; 50, 94; 53, 100; Quintilian, Institutio oratoria, V, 10, 17.
32. Quintilian, Institutio oratoria, V, 13, 35; cf. also Rhetorica ad Herennium, II, 2, 3 ff.
33. Rhetorica ad Herennium, II, 27, 44; Cicero, De inventione, I, 50, 94.
the offence with which we are charged. Or we may try to turn the audience’s attention away from the actual case by inserting a digression.

It is interesting to note that in connection with this passage Alardus of Amsterdam, in the edition of 1539, adds the following comment. Dialecticians commonly call a response *ad hominem* when a man is abundantly given his due inasmuch as he himself is repelled and silenced, but it is not made clear from what kind of defect or difficulty the actual case suffers. Especially sophistic reasoners deserve such a reply. Since they do not argue *ad rem*, they do not get an answer *ad rem*, according to the sayings that towards foxes one should behave like a fox and towards Cretans like a Cretan.  

Neither Agricola nor Alardus outright condemns the use of a *solution ad hominem*. As in general they favour a variety of logic that incorporates many elements from rhetoric, they are rather tolerant towards methods of persuading that lie beyond the sphere of pure logic. Others, however, were less hospitable. In *The Rule of Reason* of 1551 Thomas Wilson clearly follows Agricola and Alardus in distinguishing two manners of confutation. Either we answer fully to the matter or else we seek some other means to satisfy the man, and that in three ways, either by making the charge seem less than it is, or by bringing some other example against it, or else by seeking some means to digress from the matter. The first way consists in receiving the opponent’s argument laughingly and declaring by words that it is nothing to the purpose and so abashing the opponent. After elaborating on the other ways as well, Wilson adds that in all these manners of refutation, when we purpose to put a man to silence, great moderation should be used and that as little advantage should be taken by such means as may be possible. For although it be a poor help, as indeed it is none other, yet many a man loses estimation by much using of such fashions.

Even more radical is Thomas Blundeville in his *Logic* of 1599. At the beginning of VI, 1, he says that some dialecticians distinguish two kinds of confutation, the one belonging to person, the other to matter. Confutation of person is done either by taunting, railing, rendering check for check, or by scoring, and that either by words or else by countenance, gesture and action. Because that kind of confutation belongs rather to scoffing than to true order of reasoning, he will abstain from speaking thereof and deal only with the confutation that belongs to matter.

This tendency to banish Agricola’s *solution ad hominem* from the positive treatment of logic proper was strengthened by the article on *solution* in the

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Lexicon philosophicum published by Rudolph Goclenius in 1613. There it is pointed out that the word is used by logicians in the sense of refutation. Primarily, a refutation is ad rem; as such it is either general, when it is directed at the form or the matter or both, or special, when one of the traditional fallacies is brought to light. Secondarily, a refutation may be ad opponentem personam, and then it proceeds in one of Agricola’s three ways. After giving some details about the refutation ad rem, Goclenius repeats that sometimes a reply is aimed, not at the matter of the case, but at the man or the person (Interdum non rei, sed homini seu personae respondetur). Such a reply, however, is not a genuine refutation, but only a quasi-refutation, an attempt to escape rather than a truly logical move. Hence Goclenius concludes his exposition by declaring that he approves least of all of this quasi-refutation, considering it as sophistical (Hanc quasi solutionem, ut sophisticam, minime omnium approbo). It should be noted that, although this author does not group the quasi-refutation together with the traditional fallacies as they had been listed by Aristotle, he nevertheless is quite explicit in downgrading that debating device. As Isaac Watts put it about a century later: fair disputants should not indulge ridicule, nor should sarcasm and reproach or insolent language ever be used among them; in brief, they should not turn off from things to speak of persons.36

7. Conclusion

As may have become clear from the foregoing considerations, for a very long time there were two separate lines of development associated with the phrase argumentum ad hominem, each having a double root in Aristotle’s writings. Eventually, however, the argumentum ad hominem in the sense of an argumentum ex concessis and the more rhetorically oriented argumentum ad hominem tended to coalesce. Naturally, this process was much facilitated by the fact that both types of arguing were frequently referred to by very similar or even identical expressions. Further, it is obvious that the two types share the common feature of being somehow second-rate in comparison to the proper standard, which in the one case is an absolute or apodictic proof and in the other a refutation that is directed at the logical core of the argument or at the matter of the case. Moreover, once Locke had classified the argumentum ad hominem in the sense of an argument ex concessis with the typical rhetorical devices ad verecundiam and ad ignorantiam as arguments that men, in their reasonings with others, do ordinarily make use of to prevail on their assent, or at least so to awe them as to silence their opposition, it

was even more tempting to treat the two varieties of *ad hominem* argument as being instances of one and the same species.

Modern attempts to account for the nature of a single *argumentum ad hominem* are like efforts to construct one semantic spectrum for two homonymous words. Perhaps it would be wiser to follow Schopenhauer's advice by splitting the treatment into separate lemmata and choosing different names, such as *argumentum ad hominem* and *argumentum ad personam*, for phenomena that certainly had very different origins.
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