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Discussing Modalities in the Mid-Twelfth Century:

An Introductory Study of the *Introductiones Montane Maiores*, the *Summa Periermeneias* and the *Ars Meliduna* on the *de re/de dicto* Distinction[*]

1. INTRODUCTION

The central role that the notions of possibility, impossibility and necessity play in Abelard's logic and metaphysics has been remarked upon by many scholars. Among his numerous contributions to modal semantics, the distinction between the *de re* and *de dicto* readings of modes is usually acknowledged as one that had a considerable impact on the later history of logic. Recent studies have pointed out that Abelard's reflections on this topic were not developed in isolation, but emerged from a lively debate, that was carried on with other masters of the time and concerned the grammatical and logical properties of modal propositions. This debate is witnessed in several surviving texts dating from the first two decades of the twelfth century[1]. Rather than focusing on this debate, my aim here is to bring attention to the discussions on modalities that are found in some later commentaries and treatises, all written around the middle of the twelfth century. The texts that I take into consideration are the '*Introductiones Montane Maiores*', an anonymous tract on logic connected to the teaching of Alberic of Paris[2]; the unedited

[1] On early twelfth-century debates on modalities, see, in particular, C. J. MARTIN, *Modality without the Prior Analytics: Early Twelfth Century Accounts of Modal Propositions*, in M. CRESWELL, E. MARES, A. RINI eds., *Logical Modalities from Aristotle to Carnap*, Cambridge University Press, Cambridge 2016, pp. 113-132; and I. BININI, *The* de re-de dicto *Distinction: A Twelfth-Century Logical Discovery*, « Vivarium », forthcoming.

[2] The *Introductiones* are a collection of notes of logical content preserved in manuscript Paris, Bibliothèque Nationale de France, lat. 15141, ff. 47ra–104ra. A critical edition of the text was recently published in ANONYMOUS, *Introductiones Montane Maiores. An Edition of the Text with an Introduction, Notes and Indices*, edd. E. P. BOS, J. SPRUYT, Peeters Publishers, Leuven 2017

'*Summa Periermeneias*' included in MS Paris, Bibliothèque de l'Arsenal 910 and dated by de Rijk to mid-twelfth century[3]; and lastly, the more famous — though little studied — '*Ars Meliduna*', the logical masterpiece produced by the school of *Meludinenses*[4]. Each of these texts offers a valuable investigation into modal propositions, taking into account numerous elements that were discussed by Abelard and his contemporaries, but also introducing new ideas.

One evident novelty is the central role that modal syllogistics plays in these texts: the analysis of modal propositions that they offer revolves around the suitability of such propositions for use in syllogisms, and the main question that is put forward is how modes should be interpreted in order to preserve the validity of Aristotle's system of syllogisms in the *Prior Analytics.* Although this topic had already been discussed by earlier authors, and especially by Abelard in the *Logica Ingredientibus*, the proper interpretation of the so called '*syllogismi incisi*' — namely, syllogisms composed by both simple and modal propositions — becomes a predominant topic in the mid-twelfth century[5]. In particular, we will see that the discussion on the semantic ambiguity

(Philosophes Médiévaux, 63). According to the editors, the *Maiores* were produced by the school of the *Montani*, which was established on the Mont St. Geneviève from the 1130s (ANONYMOUS, *Introductiones Montane Maiores* cit., p. x; but see Y. IWAKUMA, *Alberic of Paris on Mont Ste Geneviève against Peter Abelard*, in J. LETH FINK, H. HANSEN, A. M. MORA-MARQUEZ eds., *Logic and Language in the Middle Ages. A Volume in Honour of Sten Ebbesen*, Brill, Leiden 2012, pp. 27-47, at p. 29, for a challenge to the identification of *Montani* with *Albricani*). The author of the *Maiores* is deeply indebted to the teaching of Alberic of Paris, even though other masters of the time are also quoted in the text, including Peter Abelard. References to Abelard in the past tense, along with other observations, led de Rijk to date the earlier parts of the *Maiores* between 1130 and 1140. However, the part of the tract that I will consider in this article — which contains an inquiry on modal propositions and on *syllogismi incisi* — was dated by de Rijk later, probably no earlier than 1150. On the discussion about the datation of the *Maiores* see L. M. DE RIJK, *Some New Evidence on Twelfth Century Logic: Alberic and the School of Mont Ste. Geneviève (Montani)*, « Vivarium », 4, 1966, pp. 1-57; ANONYMOUS, *Introductiones Montane Maiores* cit., p. XII-XIII.

[3] L.M. DE RIJK, *Logica Modernorum: A Contribution to the History of Early Terminist Logic*, vol. I, Van Gorcum, Assen 1962, p. 118.

[4] The date of the *Ars Meliduna* is still very uncertain. In one occasion, de Rijk dated it as early as the mid-twelfth century (L. M. DE RIJK, *The origin of the theory of the properties of terms*, in N. KRETZMANN, A. KENNY, J. PINBORG eds., *The Cambridge History of Later Medieval Philosophy*, Cambridge University Press, Cambridge 1982, p. 165) but, as Ebbesen noted, a more reasonable date seems to be around 1175. See on this S. EBBESEN, *Early Supposition Theory II*, « Vivarium », 51/1-4, 2013 (*Medieval Supposition Theory Revisited*, ed. E. P. BOS), pp. 60-78, at p. 70.

[5] The expression '*syllogismi incisi*' was employed by Abelard in the *Logica Ingredientibus*: see PETRUS ABAELARDUS, *Glossae super Peri Hermeneias*, in *Petri Abaelardi Glossae super Peri Hermeneias*, edd. K. JACOBI, C. STRUB, Brepols, Turnhout 2010 (Corpus Christianorum Continuatio Mediaevalis 206), p. 487, lin. 25-38. On the use of *syllogismi incisi* in twelfth-century logic, see L. MINIO PALUELLO, *Note sull'Aristotele Latino Medievale*, « Rivista di Filosofia Neo-Scolastica », 46, 1954, pp. 211-231.

of modal propositions and the distinction between their *de re* and *de dicto* exposition is often linked to the interpretation of Aristotle's syllogistics. This is interesting because, on the contrary, the first known commentaries on the *Prior Analytics* — namely, the '*Anonymous Aurelianensis III*'[6] (dated supposedly to 1160-1180 by Ebbesen) and the '*Dialectica Monacensis*'[7] (dated around 1190-1220[8]) — seem not to theorize about or make use of this distinction[9].

Another element of novelty is that the discussion on modalities included in the three texts seems to focus exclusively on syntactical and logical issues, while many of the questions related to the nature and epistemology of modalities that were raised by Abelard and his contemporaries — for example, the definitions of modal terms, the relation between modalities and time, the account of unrealized possibilities — are never, or seldom, investigated. A discussion of these topics may still be found in logical sources from the mid-twelfth century, but usually in connection with the ninth chapter of *De Interpretatione*, or with Boethius' *De Hypotheticis Syllogismis*.

Other significant elements that either connect or set apart our three texts from earlier debates on modalities will be highlighted within the discussion. Let me just point out that the present study is not meant to be an exhaustive and detailed analysis of the modal theories advanced in the *Introductiones Montane Maiores*, the *Summa Periermeneias* and the *Ars Meliduna*, but rather an introductory study of these theories, and particularly of how the *de re/de dicto* distinction is accounted for in them. However, the complexity of these theories certainly deserves to be brought to light by further studies.

2. The *Introductiones Montane Maiores*

The first text that I take into consideration is the logical treatise preserved in manuscript Paris, BN lat. 15141, ff. 47ra–104ra, edited as *Introductiones Mon-*

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[6] This title has been given by Sten Ebbesen, who discovered this text in the manuscript Orléans, Bibliothèque municipale, 283. On this commentary, see, in particular, S. EBBESEN, *Analyzing Syllogisms or Anonymous Aurelianensis III: The (Presumably) Earliest Extant Latin Commentary on the* Prior Analytics*, and Its Greek Model*, « Cahiers de l'Institut du Moyen-Âge Grec et Latin », 37, 1981, pp. 1-20 ; C. THOMSEN THÖRNQVIST, *The Anonymous Aurelianensis III and the Reception of Aristotle's Prior Analytics in the Latin West*, « Cahiers de l'Institut du Moyen-Âge Grec et Latin », 79, 2010, pp. 25-41.

[7] L. M. DE RIJK, *Logica Modernorum: A Contribution to the History of Early Terminist Logic*, vol. II-1, Van Gorcum, Assen 1967, pp. 408-414.

[8] See EBBESEN, *Early Supposition Theory II* cit., p. 71.

[9] H. LAGERLUND, *Medieval Theories of the Syllogism*, in E. N. ZALTA ed., *The Stanford Encyclopedia of Philosophy (Winter 2017 Edition)*, URL = https://plato.stanford.edu/archives/win2017/entries/medieval-syllogism/ (last access on 1st July 2020). On early commentaries on the *Prior Analytics*, see also H. LAGERLUND, *Modal Syllogistic in the Middle Ages*, Brill, Leiden 2000.

tane Maiores[10]. In fact, rather than a 'treatise', it would be better characterized as a collection of notes, which were probably taken from introductory lectures on logic, given the lack of systematicity with which the arguments are presented and the somewhat elementary treatment of some problems[11]. The author of the *Maiores* is deeply influenced by the teaching of Alberic of Paris, even though other masters are also referred to as authorities in the text, such as William of Champeaux and Peter Abelard. The *Maiores* are an interesting text to begin our survey, because they present a detailed discussion of mixed syllogisms, or '*syllogismi incisi*'. It is within this discussion that the author examines the semantic ambiguity of propositions including modes and offers a theory on their interpretation *de rebus* and *de dicto* (the latter also called « *de sensu enuntiationis* »).

Modal propositions are said in the *Maiores* to be of two kinds: hypothetical, such as 'if Socrates is a man, it is necessary for him to be an animal' (*si Socrates est homo, necesse est eum esse animal*); and categorical, for example, 'for Socrates to be a man is possible' (*Socratem esse hominem est possibile*). We will find this division again in the *Ars Meliduna*. The author then focuses on categorical modals, saying at first that in a proposition such as 'for Socrates to be a man is possible', the possibility is applied to a propositional content, so that the proposition is « *de dicto propositionis* ». This is affirmed on the basis of Aristotle's authority, who claims in *De Interpretatione* that in propositions of this sort modes function as predicates and are connected by the copula to the subject term, which he identifies with the verb included in the infinitive clause, so that in a proposition like '*Socratem esse hominem est possibile*', '*possibile*' is the predicate and the subject is the verb '*esse*' included in the infinitive phrase[12]. This Aristotelian analysis of nominal propositions was discussed in some early twelfth-century sources, such as *H9* and

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[10] ANONYMOUS, *Introductiones Montane Maiores* cit.

[11] ANONYMOUS, *Introductiones Montane Maiores* cit., p. XIV.

[12] ANONYMOUS, *Introductiones Montane Maiores* cit., p. 300, lin. 8-12: « In categoricis modalibus praedicatur vel removetur modus, ut <in> "Socratem esse hominem est possibile" praedicatur "possibile" de dicto propositionis. Secundum hoc dicit Aristotiles <quod> in categoricis modalibus subiciuntur esse et non esse, praedicantur vero appositiones determinantes veritatem propositionum ». The author is referring to a discussion in *De Interpretatione* where Aristotle, taking into consideration the proper way of negating modal propositions, provides an analysis of their structure stating that in a claim like '*Socratem (non) esse hominem est possibile*', the modal term is the predicate, so that in order to obtain a proper contradiction we should say: '*Socratem (non) esse hominem* non *est possibile*'. He also suggests that the verb '(*non*) *esse*' included in the infinitive clause functions as subject. He maintains this in passage XII, 21b26-32, that reads (in Boethius' translation): « Fiunt enim quemadmodum in illis [that is, in simple categoricals] "esse" et "non esse" appositiones, subiectae uero res hoc quidem album illud uero homo, eodem quoque modo hoc loco "esse" quidem subiectum fit, "posse" uero et "contingere" ap-

Abelard's works[13]. Other texts, such as the commentary on *De Interpretatione* labelled *H4*, interpret Aristotle as saying that the subject of a nominal proposition is not only the verb '*esse*' of the infinitive clause but the entire phrase (*tota oratio*) of which the mode is predicated, so that in a proposition such as '*Socratem esse hominem est possibile*', the whole phrase '*Socratem esse hominem*' would be the subject[14]. Apart from *H4*, this same interpretation is offered in some texts later than Abelard's *Logica Ingredientibus*, such as the *Glossae Doctrine Sermonum*, the *Summa Dialectice Artis* and *H21*[15]. The *Maiores* also seem to adopt this second reading of Aristotle's text, according to which the subject of nominal modals would be the '*tota oratio*' of which the mode is predicated.

The author of the *Maiores*, however, does not seem to be satisfied with this analysis. He states that we should not interpret Aristotle's words — as some people do — as meaning that in the simple categorical (i) 'a man is white' the subject refers to a thing, whereas in the corresponding modal (ii) 'it is possible for a man to be white', the subject is the entire infinitive clause '*hominem esse album*'. On the contrary, he affirms that the two categoricals (i) and (ii) «have the same subject», and that what Aristotle intended in *De Interpretatione* was to provide an analysis of (ii) paying attention to «the order of words» included in it, that is, with respect to its grammatical structure. Aristotle, he continues, did not deny that modal propositions are about things,

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positiones determinantes, quemadmodum in illis "esse" et "non esse" ueritatem, similiter autem hae etiam in "esse possibile" et "esse non possibile" ». He then repeats this point concerning the subject of modal claims in XII, 22a8-10, where he states: « Et uniuersaliter uero, quemadmodum dictum est, "esse" quidem et "non esse" oportet ponere quemadmodum subiecta, negationem uero et affirmationem haec facientem ad unum apponere ».

[13] See *H9*: Ms Orléans, Bibliothèque Municipale, 266, p. 33b: «Cum enim dico "*hominem esse animal possibile est*" hec uox, scilicet "*possibile est*" predicatur et "*esse*" subiectum, "*homo*" et "*animal*" determinationes». See also the treatise on modalities *M1* for a similar position: Orléans, Bibliothèque Municipale, 266, p. 167a: « Principale subiectum istius propositionis [that is, "*Socratem esse hominem possibile est*"] est "*esse*", secundarium est "*Socratem*" ». The alphanumerical labels of these texts refer to Marenbon's catalogue of twelfth-century sources in J. MARENBON, *Working Catalogue of Commentaries on the Isagoge, Categories and De interpretatione from c. 875 to c. 1150*, in C. BURNETT ed., *Commentaries and Glosses on Aristotelian Logical Texts: the Syriac, Arabic and Medieval Latin Traditions*, The Warburg Institute, London 1993, pp. 77-127. Abelard discusses this issue in e.g. PETRUS ABAELARDUS, *Dialectica*, ed. L. M. DE RIJK, Van Gorcum, Assen 1970, p. 191, lin. 26-30; ID., *Glossae super Peri Hermeneias* cit., p. 396, lin. 124-142.

[14] *H4*: MS Paris, Bibliothèque Nationale de France, lat. 13368, f. 144va: « Ad faciendam affirmationem et negationem modus simpliciter praedicatur et tota oratio subicitur. »

[15] ANONYMOUS, *Glossae Doctrine Sermonum*, ed. P. KING, Brepols, Turnhout 2016 (Corpus Christianorum Continuatio Mediaevalis 206), p. 216, lin. 511-521; GUILLELMUS EPISCOPUS LUCANUS, *Summa dialectice artis*, ed. L. POZZI, Liviana Editrice, Padova 1975, p. 105, §7.07-08; 118, §7.43; *H21*: MS Paris, Bibliothèque de l'Arsenal, 910, f. 88va.

just like their counterparts *de puro inesse*[16]. The author seems then to reso-
lutely take a position in favor of the *de re* interpretation of modals, stating
that the two propositions (i) and (ii) both have *res* as their subject. He
strengthens this interpretation in another passage, analyzing the claim 'it is
possible for a man to read' as: 'a man reads possibly', having 'man' as its sub-
ject and 'reads possibly' as the predicate[17]. Although not explicitly referring
to him, here the author adopts Abelard's reading of modals, according to
which simple propositions and their modal counterparts are about the same
things and therefore have the same subject[18]. Abelard's views are also echoed
in the suggestion that the grammatical, 'surface' structure of modal propo-
sitions (that is, the analysis « *quantum ad verborum ordinem* ») does not neces-
sarily reflect their real, 'logical' form.

To defend his reading of modals — which is not explicitly denominated
'*de re*' here, although there is an insistence that the subject of modal propo-
sitions are *res* — the author of the *Maiores* uses an argument that is very pop-
ular in the mid-twelfth century. He says that only if interpreted in this way
modal propositions are suitable for construing valid syllogisms, because syl-
logisms require propositions to have quantified subjects. It would therefore
be contrary to the authority of Aristotle to interpret modal propositions oth-
erwise, for Aristotle admitted the use of modals in syllogistics[19]. We will see
in Sections 3 and 4 that the same objection to the *de dicto* interpretation is
repeated in both the *Summa Periermeneias* and the *Ars Meliduna*.

Indeed, in logical sources from the beginning of the twelfth century,
many authors agreed that, if we understand modal propositions as having

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[16] ANONYMOUS, *Introductiones Montane Maiores* cit., p. 300, lin. 18-24: « Et in hoc videtur tamen
esse contra Aristotilem qui dicunt <in> "homo est albus" subicitur res; in "possibile est
hominem esse album", "hominem esse album" subicitur, praedicatur "possibile"; et in hoc
assignat differentiam modalis et simplicis categorice. Et nos dicimus quod in utraque idem
subicitur. Sed cum Aristotiles assignavit esse et non esse subiecta, respexit ad verborum or-
dinem, scilicet esse hominem est possibile, non tamen negavit res subici ».

[17] ANONYMOUS, *Introductiones Montane Maiores* cit., p. 300, lin. 13-17: « Preter hoc quoque
dicimus quod subiciuntur in huiusmodi res universales vel singulares, et non simpliciter
praedicatur modus, sed quiddam ex modo et alio universali compactum, ut <in> "possibile est
hominem legere", id est "homo legit possibiliter", subicitur in ea "homo", et praedicatur "leg-
ere possibiliter" ». In agreement with Iwakuma's transcription, I understand here '*huiusmodi*'
instead of '*ypotheticis*', which is included in the edition.

[18] PETRUS ABAELARDUS, *Dialectica* cit., p. 191, lin. 26-30; ID., *Glossae super Peri Hermeneias* cit.,
p. 396, lin. 124-142.

[19] ANONYMOUS, *Introductiones Montane Maiores* cit., p. 300, lin. 24-28: « Sed ratione atque auc-
toritate cogimur <sequi> Aristotilem, qui facit syllogismos mixtos, quod dicamus in huiusmodi
propositionibus subici verba et propositiones universales. Aliter enim non essent syllogismi
quos Aristotiles ponit syllogismos ».

the mode as their predicate and an infinitive clause as their subject, as Aristotle wanted in *De Interpretatione*, then these propositions would have no quantity, being neither universal, particular or singular, and would therefore be unsuitable for syllogisms. The strategy usually adopted to reconcile what Aristotle said in *De Interpretatione* with his use of modal propositions in syllogisms was to say that two subjects and two predicates — one « principal », the other « secondary » — could be identified in propositions of this sort. In 'it is possible for every man to be white' (*possibile est omnem hominem esse album*), for instance, the term 'possible' would be the principal predicate and the verb included in the infinitive phrase the corresponding subject, while the secondary subject and predicate would be, respectively, 'white' and 'man'. Syllogisms should be construed with respect to this last pair of terms, in order to allow for variation in quantity. Abelard slightly changed this paradigm by introducing a distinction between the subject and predicate « according to the meaning » (*secundum sensum*) and those « according to the grammatical structure » (*quantum ad constructionis materiam*), a distinction that seems to lie in the background of the *Maiores*, albeit not explicitly acknowledged[20]. The following table represents the structure of modal propositions with respect to their terms, as analysed in some treatises from the first half of the twelfth century[21]:

	Possibile	*est*	*omnem hominem*	*esse*	*album*
PRINCIPAL TERMS (Abelard: terms *secundum constructionem*)	predicate	copula	determination of the subject	subject	determination of the subject
			(in later sources) subject		
SECONDARY TERMS (Abelard: terms *secundum sensum*)	qualifier of the predicate (or of the inherence)		quantified subject	copula	predicate

The *Maiores* then pass to the analysis of different kinds of mixed syllogisms, varied according to the different figures and moods, and including

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[20] This distinction between two orders of terms in nominal claims returns in many treatises from the early twelfth century, such as *H9* (MS Orléans, Bibliothèque Municipale, 266, p. 33a), *H4* (MS Paris, Bibliothèque Nationale de France, lat. 13368, f. 114va), *H5* (MS Munich, Bayerische Staatsbibliothek, Clm. 14779, f. 60r-v), *M1* (MS Orléans, Bibliothèque Municipale, 266, p. 167a), *M3* (Ms Orléans, Bibliothèque Municipale, 266, p. 253b) and *SH3* (Ms Orléans, Bibliothèque Municipale, 266, p. 119a). For Abelard's distinction between terms *secundum constructionem* e *secundum sensum*, see PETRUS ABAELARDUS, *Dialectica* cit., p. 191, lin. 26-30, and PETRUS ABAELARDUS, *Glossae super Peri Hermeneias* cit., p. 396, lin. 124-142.

[21] See BININI, *The de re-de dicto Distinction* cit., for a more detailed discussion of this topic.

propositions *de possibili*, *de necessario*, *de impossibili* and *de contingenti*. Throughout the discussion, the idea is repeated that modal propositions used in syllogisms must be understood « *de rebus* » (here, the expression is used explicitly), so that when we say :

> It is possible for every animal to be sick,
> every man is an animal,
> therefore, it is possible for every man to be sick ;

the same term 'possibly sick' (*possibiliter egrum*) is predicated universally of 'animal' in the first premise, and of 'man' in the conclusion. The author also states that the meaning (*sensus*) of the first premise should be expounded as 'every animal is sick possibly' (*omne animal est egrum possibiliter*)[22].

We understand that the validity of mixed syllogisms of this sort was the object of debate, for the opinion of others (*quidam*) is reported, who try to undermine it by stating that in arguments of this sort no middle term is shared in the two premises. They say that, because the syllogism is supposed to be in the first figure, the term that is the subject in the first premise should be used as the predicate in the second, in order for the conclusion to be drawn, but this is not the case here. The author of the *Maiores* replies that this objection can only be raised concerning modal propositions that are understood « as being about the content of a sentence » (« *de sensu enuntiationis* », or, as he later says, « *de dicto* »), that is, if they are expounded as having the modal term as their predicate and the entire infinitive phrase as the subject. If this is our interpretation of modals, no mixed syllogism could be construed, he accepts. However, if the syllogism's first premise is expounded *de rebus*, as a universal affirmation whose subject is 'every man', this problem does not arise[23].

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[22] ANONYMOUS, *Introductiones Montane Maiores* cit., p. 301, lin. 1-8 : « Et in prima incisione fit syllogismus in primo modo : "possibile est omne animal esse aegrum, sed omnis homo est animal, ergo possibile est omnem hominem esse aegrum." Locus est a genere. Regula : "si aliquid praedicatur de genere universaliter, et de specie". Quare, cum "possibiliter aegrum" praedicatur de "animali" universaliter, illud idem praedicatur de "homine" universaliter ».

[23] ANONYMOUS, *Introductiones Montane Maiores* cit., p. 301, lin. 9-24 : « Sed quidam nituntur huiusmodi calumniare syllogismos, dicentes quod non est terminus communis assumptionis et propositionis, quia, cum dicimus "omne animal possibile est esse aegrum", et assumitur "sed omnis homo est animal", id quod subicitur in prima, non praedicatur in secunda, quia, "animal" praedicatur in assumptione quod non est subiectum in propositione. Decipiuntur isti adtendentes nisi unum sensum propositionis. Ad hoc enim quod sit syllogismus, oportet quod <propositio> intelligatur universaliter, et subiciatur in ea "animal". Et fiat sensus talis "omne animal possibile est esse aegrum", id est "omne animal est aegrum possibiliter". Potest

Abelard briefly tackled the same issue of the middle term of *syllogismi incisi* in the *Logica Ingredientibus*, where he proposed a similar analysis:

> « because Aristotle maintained that also syllogisms of this sort are in different figures, and because he defined the first figure as the one in which the middle term is subject in one premise and predicate in the other [...] we must take into consideration the term that is subject with respect to meaning (*subiectum secundum sensum*), not the one that is subject with respect to the grammatical structure (*subiectum constructionis*), or otherwise there would be no figure »[24].

However, not all authors of the time were satisfied with Abelard's solution. In a treatise on modalities that is found in the same Ambrosian manuscript, which also contains Abelard's *Logica* (cod. Milan, Biblioteca Ambrosiana M. 63 sup., ff. 44ra-72rb), edited as '*De Propositionibus Modalibus*'[25], the anonymous author reports the position of « *quidam* » (presumably, Abelard himself) according to which modal propositions are said to have two subjects and two

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exponi de sensu enuntiationis, et tunc erit singularis, nec poterit ex categorica huiusmodi fieri syllogismus, ut dicatur "possibile est hoc quod ista propositio proponit 'omne animal est aegrum'", et in hac subicitur "omne animal esse aegrum" et praedicatur "possibile". Sed universaliter, ut dictum est, oportet ut intelligatur de rebus exposita ad hoc quod syllogismi illius fiat propositio ».

[24] PETRUS ABAELARDUS, *Glossae super Peri Hermeneias* cit., p. 399, lin. 198-203: « Cum itaque Aristoteles figuras in his quoque syllogismis seruet et ipse primam figuram diffiniat in qua medius terminus subicitur et praedicatur, secundam in qua tantum praedicatur, tertiam in qua tantum subicitur, oportet nos ad subiectum secundum sensum respicere, non constructionis, alioquin nulla esset figura. »

[25] ANONYMOUS, *De Propositionibus Modalibus*, edd. K. JACOBI, C. STRUB, Brepols, Turnhout 2010 (Corpus Christianorum Continuatio Medievalis 206), pp. 234, lin. 88 - 235, lin. 117: « Sunt tamen quidam qui eas alia praedicata et alia subiecta habere dicunt, scilicet secundaria, sicut istam "Socratem esse hominem est possibile" "esse" dicunt habere principale subiectum, "possibile" uero principale praedicatum et "Socratem" et "hominem" secundarium subiectum et secundarium praedicatum. [...] Dicunt ergo, cum uniuersales et particulares possint fieri, signum uniuersalitatis et particularitatis ad aliud subiectum oportere addi, cum ad esse poni non possit, et ita alia subiecta dicunt ibi esse. Aliunde etiam hoc confirmant, ex conuersionibus scilicet quae ab Aristotele fiunt, sicut "Possibile est hominem esse animal", "Possibile est animal esse hominem". Aristoteles etiam facit incisos syllogismos ita: "Possibile est omnem hominem esse animal et Socrates est homo, ergo possibile est Socratem esse animal", quos dicunt non posse esse alicuius figurae, nisi sint ibi alia subiecta et alia praedicata quam "esse" et "possibile", cum "possibile" et alii modi non possint subici. Nos autem dicimus quod non sunt ibi alia subiecta uel praedicata nisi uerba et modi. Quod autem dicit Boethius, quod possunt fieri uniuersales et particulares, sic intelligimus: uniuersales et particulares uocat non quod habeant signum uniuersalitatis et particularitatis additum ad subiecta, sed quod agunt de quantitate omnium uel nonnullorum. [...] De incisis syllogismis dicimus quod nullius figurae sunt et tamen firmae complexionis ».

predicates. This idea, he explains, was invoked to justify — among other things — the use of modals in syllogisms, for Aristotle's mixed syllogisms cannot be of any figure unless we understand their subject and predicate otherwise than the grammatical construction suggests. However, the author's position here is that no other predicate and subject should be identified in modal propositions other than, respectively, the mode and the verb of the infinitive clause. Propositions of this sort could still be used in syllogisms, he concludes, but these would be of no figure, and yet they would maintain their validity.

Note that the objection concerning the presence of a middle term in mixed syllogisms is different from the one considered earlier, according to which modal propositions are unsuitable for syllogisms because they have no quantity. As far as I know, whereas this latter objection was raised in many sources from the beginning of the century, the former is not to be found before the *Logica Ingredientibus*, although it becomes a common point in mid-twelfth century logic and is rehearsed in similar terms in the *Summa Periermeneias* and the *Ars Meliduna*.

Even though he denies that the latter could be used in syllogisms, the author of the *Maiores* seems to accept both the *de rebus* and the *de sensu* readings as correct and consistent interpretations of modals. Unlike Abelard, he also admits that there are some modal propositions, such as (i) 'it is possible for every animal to be a man', which are true interpreted *de sensu*, even though they are false *de rebus*[26]. We gather from this that his understanding of the *de sensu* reading does not coincide with the Abelardian *per compositionem* interpretation, according to which (i) would be expounded as saying 'every animal can be man while being an animal', and in which the universal quantifier would range over all and only those animals that exist in the actual situation. If interpreted *per compositionem*, (i) would be false, for in the actual situation there are animals that cannot be men. Rather, the *de sensu* exposition of (i) is explained in the *Maiores* as follows: 'what this proposition says is possible: every animal is a man' (*possibile est quod ista dicit* 'omne animal est homo'), where the domain of objects referred to by the term 'every animal' is possibly different from the actual one[27].

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[26] ANONYMOUS, *Introductiones Montane Maiores* cit., p. 301, lin. 25-31: « Si enim de sensu exponeretur, iam minime sequaeretur, quamvis vera sit ista propositio de sensu exposita "sed omne animal esse hominem est possibile", quia possibile est quod ista dicit "omne animal est homo", et cum ea vera sit assumptio haec "sed omnis asinus est animal". Non tamen sequitur "omnem asinum possibile est esse hominem". Si vero prima de rebus exposita vera esset, necessario sequaeretur; sed falsa est de rebus. Falsum enim est "omne animal possibiliter fit homo" ».

[27] In the *Glossae Doctrine Sermonum*, a commentary on *De Interpretatione*, which was presumably written in the 1130s and seems to be connected to the teaching of Alberic, a similar po-

The author of the *Maiores* returns to the distinction between the *de rebus* and *de sensu* interpretations when discussing modal propositions *de necessario*, where he acknowledges three different senses that propositions of this sort may have, depending on the scope of the modal term, of the quantifier and of the negative particle. If one says, for instance, that 'for no animal it is necessary to be a tree' (*nullum animal esse lignum est necesse*), this could be interpreted *de sensu enuntiationis*, stating that 'what this proposition says is necessary: no animal is a tree'. Or it could be interpreted according to two different *de rebus* expositions: one that « negates the necessity » (*negatio necessarii*) — that is, 'for no animal to be a tree is necessary' or 'no animal is necessarily a tree' (*nullum animal esse lignum est necesse, idest nullum animal necessario est lignum*); and the other that « necessitates the negation » (*necessaria negatio*) — that is, 'it is necessary that nothing that is animal is as tree' (*necesse est quod nec unum animal sit lignum*), which is said to be equivalent to 'every animal necessarily lacks being a tree' (*omne animal caret esse ligni necessario*). We may construe a syllogism with either of these *de rebus* readings, paying attention to the fact that the same interpretation is used in the conclusion and in the premises[28]. The distinction between the two *de rebus* expositions is then proposed for modal propositions *de contingenti*[29].

Summing up what the *Maiores* have to say about the *de re/de dicto* distinction, we may conclude that the author clearly acknowledges the semantic ambiguity of categorical modal claims and maintains that they can be read either *de re* (or « *de rebus* ») or *de dicto* (which is also referred to as « *de dicto propositionis* », « *de sensu* », or « *de sensu enuntiationis* »). The *de re* analysis, which is favored in the *Maiores*, is presented as the one in which modal propo-

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sition is advanced. More clearly than the *Maiores*, the *Glossae* state that if we interpret propositions such as (i) *de sensu*, the domain of objects referred to by the term 'every animal' is not the actual one, but is ampliated by the term 'possible'. Anonymous, *Glossae Doctrine Sermonum* cit., pp. 218, lin. 605 - 219, lin. 611 : « Sunt autem qui huiusmodi propositiones accipiant, scilicet "Possibile est omnem hominem esse album", id est "possibile est quod dicitur hac propositione : Omnis homo est albus", quia leuiter potest contingere quod soli homines albi erunt, nec tamen tunc significabit aliud. Et non exponunt secundum ea quae sunt in actu, sed dicunt totum debere sic exponi : "possibile est de omni eo quod est homo quod ipsum sit album" ». In the *Logica Ingredientibus*, Abelard's reflections were also considering the same issue when he advanced the example 'it is possible for every substance to be a spirit' (Petrus Abaelardus, *Glossae super Peri Hermeneias* cit., p. 417, lin. 634-638). This passage from the *Logica Ingredientibus* shows that Abelard too considered an analysis of *de sensu* propositions in which the quantifier is taken within the scope of the modal operator, but he denied that propositions of this sort were 'modal'.

[28] Anonymous, *Introductiones Montane Maiores* cit., pp. 304-305.

[29] Anonymous, *Introductiones Montane Maiores* cit., pp. 306-308.

sitions are about the same things as their non-modal counterparts, and have their same subject and predicate. According to this reading, the meaning of nominal propositions such as 'it is possible for a man to read' (*possibile est hominem legere*) is expounded by rephrasing them into the adverbial form 'a man reads possibly' (*homo legit possibiliter*), in which the mode functions as a qualifier of the predicate. This analysis of modals implies that there is a discrepancy between the grammatical and the 'logical' structure of modal claims. These elements can be traced back to Abelard's views on modals, even though Abelard is never explicitly acknowledged as authority on this topic.

To those that interpret modals *de dicto*, the author objects that this interpretation would make modal propositions unsuitable for syllogisms. This is shown with two arguments: the first stating that *de dicto* propositions are invariable in quantity; the second that, if *de dicto* propositions were included in mixed syllogisms, there would be no middle term shared by the premises. As was said, the first argument was already in use in logical sources from the beginning of the twelfth century, whereas the second can only be found in texts later than Abelard's *Logica Ingredientibus*. The *de dicto* reading is analyzed as the one in which the mode functions as predicate and is attached to an entire *oratio*, that is taken as subject. Interpreted *de dicto*, modal propositions such as 'it is possible for every animal to be a man' are read as saying: '[what this proposition says "every animal is a man"] is possible'. Propositions such as the one just mentioned, the author claims, are true *de dicto* but false *de rebus*. This seems to be because the domain of objects referred to by the subject of the simple categorical 'every animal is a man', of which the mode is predicated, may be different from the actual one. With respect to this point, the *de dicto* analysis proposed in the *Maiores* differs from Abelard's *per compositionem* reading in the *Logica Ingredientibus*.

3. The Summa Periermeneias in MS Paris, Bibliothèque de l'Arsenal, 910

The least known of the three sources considered for this survey is probably the commentary on *De Interpretatione* — or '*Summa Periermeneias*', as its author labels it — that is found in MS Paris, Bibliothèque de l'Arsenal, 910, ff. 83ra-91rb. This text, listed as *H21* in Marenbon's catalogue[30], contains comments on the second part of *De Interpretatione* (Chapters 10-14) and includes an extensive discussion on modalities. Like many other commentaries of the time, the text is anonymous, but there are references to the names of two masters, namely Peter Abelard (referred to as 'm. P.') and an 'm. R. parisien-

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[30] MARENBON, *Working Catalogue* cit., p. 121.

sis', very likely Robert of Melun[31]. Even though its existence has been ac-
knowledged for some years, no analysis of its content has been provided,
with the exception of some important observations made by Yukio
Iwakuma[32]. And yet, the text deserves attention, both because of the signif-
icance of the manuscript in which it is included and because it is a notable
testimony of the central issues in modal logic in the mid-twelfth century.

The manuscript including the *Summa* is one of the most important for the
study of twelfth-century logic, comparable in this respect to the MS Orléans,
Bibliothèque Municipale, 266, with which it shares part of its content[33]. It
comes from the library of the abbey of St Victor in Paris, which was founded
by William of Champeaux, an abbey that evidently had a big interest in logic
during the mid-twelfth century[34]. The manuscript collects several commen-
taries on the *logica vetus*, among which are four commentaries on *De Interpre-
tatione* (apart from our *H21*, also *H10*, *H22* and *H25*) and a treatise on modalities,
as well as other texts of grammatical and philosophical content. As Iwakuma
has noted[35], many of the logical texts found in the manuscript report the
teaching of Alberic of Paris (for instance, all the commentaries on the *Cate-
gories*), while others seem connected to the teaching of Robert of Melun and
of Peter Abelard. In the *Summa Periermeneias*, many doctrinal elements are
associable to Abelard and particularly to the modal theories put forward in
the *Logica Ingredientibus*, although there are also new aspects that cannot be
traced back to any of the known Abelardian sources on modalities.

The *Summa* begins its comments on *De Interpretatione* 12-13 by presenting
the traditional distinction between adverbial and nominal modes. The brief
analysis of adverbial modes that follows retraces the usual problems con-
nected to them. First, are said to be modes « all qualitative adverbs », namely,
those that « determine the quality and the mode of the action » signified by
the verb with which they are construed, such as 'well', 'wisely' or 'poten-
tially'. This echoes the conventional definition of adverbial modes that was
used in the early twelfth century, according to which modes 'qualify' (*deter-
minant*, *moderant*, *modificant*) a predication *de puro inesse*. This was meant ei-
ther in the sense that they modify the inherence between predicate and

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[31] The name 'm. P.' is reported three times, in ff. 83rb ; 87rb and 91vb ; 'm. R.' is mentioned
only once in f. 84vb.

[32] See, in particular, Y. IWAKUMA, *Alberic of Paris on Mont Ste Geneviève against Peter Abelard*,
in LETH FINK, HANSEN, MORA-MARQUEZ eds., *Logic and Language in the Middle Ages* cit., pp. 27-47.

[33] See DE RIJK, *Logica Modernorum* cit., vol. I, p. 116, and C. TARLAZZI, *La Glosa Victorina super
partem Prisciani De Constructione*, « Rivista di Storia della Filosofia », 3, 2014, pp. 533-538.

[34] IWAKUMA, *Alberic of Paris* cit.

[35] IWAKUMA, *Alberic of Paris* cit.

subject, stating in which way (*quomodo*) what is signified by the former in-heres in what is signified by the latter; or in the sense that they modify the meaning of the verb to which they are attached, in the same way as adjectives qualify the signification of nouns (in this sense, adverbial modes were at times referred to as *adiectiva verborum*)[36]. Nevertheless, we should notice that the *Summa* only speaks of modes as qualifiers of the action (*modus* or *qualitas actionis*) expressed by the predicate term, without mentioning their use as inherence-qualifiers[37]. This is worth pointing out because other authors in the second half of the twelfth century (such as that of the *Ars Meliduna*, as we will see in the next section) disagree with this characterization, distinguish-ing between adverbs that determine the quality of an action (*qualitas agendi*), such as 'well' or 'rapidly', and those that determine the mode of inhering (*modus cohaerendi*), such as 'possibly', 'truly' or 'necessarily', and state that only the second should be considered modes. This distinction was never ad-vanced in earlier sources, while it might have been the object of discussion in the second half of the century.

Concerning adverbial modals, the author of the *Summa* also reports Boethius' idea that modally qualified verbs are 'part' of the corresponding unqualified predicates, and he states — in agreement with Abelard — that whereas this is true for some modes (such as 'wisely' or 'truly'), it is not the case for others (such as 'possibly' or 'potentially')[38]. He also claims that whether or not a modally qualified verb is part of the same verb taken *sim-pliciter* may depend on the linguistic context in which the mode is used[39].

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[36] For the first characterization, see, for example, Petrus Abaelardus, *Dialectica* cit., p. 191, lin. 5-9; p. 195, lin. 12-15; Id., *Glossae super Peri Hermeneias* cit., p. 392, lin. 22-27. This charac-terization may also be found in the unedited commentary *H9* (MS Orléans, Bibliothèque Mu-nicipale, 266, p. 33a-b) and in Garlandus Compotista, *Dialectica*, ed. L. M. de Rijk, Van Gorcum, Assen 1959, p. 81, lin. 14. Some authors of this time explicitly state that what makes a propo-sition *modal* is not simply the fact that a modal term is included in it: in order for it to be prop-erly modal, this term must perform the role of inherence-qualifier. For the second characterization, see *M3* (MS Orléans, Bibliothèque Municipale, 266, p. 253a); Petrus Abaelar-dus, *Dialectica* cit., p. 191, lin. 12-15, and Petrus Abaelardus, *Glossae super Peri Hermeneias* cit., p. 310, lin. 73-76. See also later sources such as the commentary *H20* (MS Orléans, Bibliothèque Municipale, 266, p. 262b) and the Anonymous, *De Propositionibus Modalibus* cit., p. 231, lin. 1-6.

[37] A similar terminology may be found in sources of the same time, such as the *Glossae Doc-trinae Sermonum*, which says that modes qualify the *modus agendi vel patiendi* (Anonymous, *Glossae Doctrine Sermonum* cit., p. 187).

[38] See Petrus Abaelardus, *Dialectica* cit., p. 194, lin. 15-20; Id., *Glossae super Peri Hermeneias* cit., p. 392, lin. 39-46.

[39] A very similar point is made in the *Glossae Doctrine Sermonum* (Anonymous, *Glossae Doctrine Sermonum* cit., p. 215, lin. 490-500).

Adverbial modes are quickly cast aside to focus on their nominal counterparts, whose nature is said to present more difficulties. The discussion is limited to what we would now call *alethic modalities*, that is, to the terms 'possible', 'impossible', 'necessary', 'contingent'[40]. These are only improperly called 'modes', the author says, again rehearsing Abelard, by virtue of their similitude with their adverbial correspondents. Similarly, propositions including modes of this sort are called 'modal' because they may be rephrased or « resolved » into propositions that have an adverbial structure, so that claims such as 'it is possible (necessary) for Socrates to dispute' could be transformed into 'Socrates disputes possibly (necessarily)'[41].

The *Summa* then introduces another conventional issue related to the syntactic structure of nominal modals, asking which terms are the subject and which the predicate in propositions of this sort. Closely following the Abelardian terminology, the author maintains that there are two different ways of considering the structure of these propositions. One is « according to the proposition's terms » (*secundum terminos*), that is, as the context suggests, according to their grammatical construction; and the other is « according to the thing that the proposition is about » (*secundum rem de qua agitur*), or « according to its meaning » (*secundum sensum*). In the first sense, he says that in a proposition such as 'it is impossible for Socrates to read' (*impossibile est Socratem legere*), the mode '*impossibile*' is the predicate and the subject term is the infinitive phrase '*Socratem legere*'[42].

It is notable that the author of the *Summa*, who seems to closely follow Abelard in his exposition of modals, departs here from his teaching, saying that, according to the grammatical structure, the proposition's subject is the entire phrase (*oratio*) to which the mode is applied, rather than the infinitive

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[40] Nominal propositions including the modes '*verus*' and '*falsus*', which were listed by Aristotle in addition to these other four modes, are here excluded from the discussion, for they are said to have the same meaning as the correspondent propositions *de puro inesse*.

[41] The possibility to 'resolve' nominal modals into an adverbial form was admitted by Abelard and other logicians of his time, such as Garland and the author of the *Glossae Doctrine Sermonum*, but not by others, for example, the authors of *M1* and *M3*. On the discussion on whether such a rephrasal was, or was not, possible see MARTIN, *Modality without the Prior Analytics* cit. and BININI, *The* de re-de dicto *Distinction* cit.

[42] See MS Paris, Bibliothèque de l'Arsenal, 910, f. 88rb-va: « Quod vero in his modalibus subiectus terminus et praedicatus sit dupliciter considerandum videtur, quoniam subiectus terminus et praedicatus duobus modis sumitur hic, tum scilicet secundum terminos in quibus proponitur affirmatio vel negatio, tum secundum rem de qua agitur et secundum quam demonstratur in affirmatione vel negatione. Nam secundum terminos oratio constans ex verbo infinitivi modi et ex obliquo subiectus terminus dicitur, et modus praedicatus secundum terminos, ut apparet in ista "Socratem legere est impossibile", in quibus proposita est haec affirmatio. Hic enim oratio "Socratem legere" subiectus terminus est, et "possibile" praedicatus ».

verb '*legere*', as was claimed by Abelard in the *Logica* on the basis of Aristotle's *De Interpretatione*. As was said in the previous section, the relevant Aristotelian passages were generally interpreted in the first two decades of the twelfth century as saying that the proper analysis of nominal modals is the one in which the predicate is the modal term, the subject is the verb of the infinitive clause, and the subject and predicate (in accusative) of the infinitive clause are determinations of the subject. Abelard agreed that this was a correct analysis of the proposition's syntactical structure (although not of its meaning, as was said)[43]. In *H21* the author instead claims that the subject *secundum terminos* is the entire *oratio* of which the mode is predicated. And indeed, as was said earlier, the idea that *orationes* are the grammatical subjects of nominal modals seems to become a common one from the 1130s onwards, even among those who are indebted to Abelard's teaching, such as the *Glossae Doctrine Sermonum*[44] or the *Summa Dialectice Artis*[45].

Against this analysis of modals *secundum terminos*, the *Summa* raises the usual objection, saying that such an analysis would make modal propositions invariable with respect to quantity. The author argues that the proper analysis of nominal modals is then the one that is made « with respect to its meaning » (*quantum ad sensum*), so that in a proposition such as 'it is possible for Socrates to be white', 'Socrates' is the subject and the predicate is the modally qualified verb 'possible to be white' or 'can be white' (« *possibile — sive posse — esse album* »)[46]. Besides allowing the variation in quantity, this analysis has the merit of making propositions suitable for use in *syllogismi incisi*, because it allows for there to be a middle term connecting the two premises. This argument retraces the one that was raised in the *Maiores*. The author of the *Summa* therefore seems to be in favour of the *de rebus* reading of modal propositions, taking the mode as having a narrow scope that modifies the predicate but does not include the subject. This is confirmed by what he says at the end of the passage on mixed syllogisms, where he states that propositions such as 'it is possible for every animal to be white' (*possibile est omne an-*

[43] See PETRUS ABAELARDUS, *Glossae super Peri Hermeneias* cit., p. 396, lin. 133-136. For other early twelfth-century sources, see, in particular, *H9*: MS Orléans, Bibliothèque Municipale, 266, p. 33a-b; *M1*: MS Orléans, Bibliothèque Municipale, 266, p. 167a; *M3*: MS Orléans, Bibliothèque Municipale, 266, p. 253b; GARLANDUS COMPOTISTA, *Dialectica* cit., p. 80, lin. 25-31.

[44] ANONYMOUS, *Glossae Doctrine Sermonum* cit., p. 216, lin. 511-521.

[45] GUILLELMUS EPISCOPUS LUCANUS, *Summa dialectice artis* cit., p. 105, §7.07-08; 118, §7.43. See also C. J. MARTIN, *Abaelard on Modality: Some Possibilities and Some Puzzles*, in T. BUCHHEIM, C. KNEEPKENS, K. LORENZ eds., *Potentialität, und Possibilität. Modalaussagen in der Geschichte der Metaphysik*, Frommann - Holzboog, Stuttgart - Bad Cannstatt 2001, pp. 97-124.

[46] See MS Paris, Bibliothèque de l'Arsenal, 910, f. 88va.

imal esse album) should be interpreted as meaning 'every animal is able to be white' or 'can be white' (*omne animal est potens — vel potest — esse album*).

Later on in the *Summa*, the author again returns on the semantic ambiguity of modal propositions. After considering the rules of equipollence for modal propositions, he warns the reader that some of these propositions — namely, those in which opposite terms are predicated, such as 'it is possible for what is white to be black' or 'it is possible for some men to be dead' — can be interpreted either *per compositionem* or *per divisionem*[47]. The *per compositionem* reading is resolved into a *potest*-phrase in which there is a simultaneous predication of the two opposite terms, as in 'what is white, while remaining white, can be black' (*album, manens album, potest esse nigrum*) and 'some man, while being man, can be dead' (*aliquis homo, manens homo, potest esse mortuus*). Interpreted in this way, the two propositions are obviously false. The reading *per divisionem* is resolved into a *potest*-phrase in which the predication of the opposite terms refers to two different times, as in 'the thing that is now white can be black at another time' and 'the thing that is now a man can be dead' (*id quod est modo album potest esse nigrum in aliquo tempore*; *qui modo est homo potest esse mortuus*), which are both said to be true. As Knuuttila has shown, this interpretation of modal propositions *in sensu diviso* was usual in commentaries on *Sophisticis Elenchis* and on *De Interpretatione* in the mid-twelfth century[48]. A similar exposition was also advanced by Abelard in the *Logica Ingredientibus*[49], even though Abelard did not explicitly differentiate the *per divisionem/per compositionem* distinction and the *de rebus/de sensu* one.

According to the *Summa*, the distinction between propositions *de sensu composito* and *diviso* is only applicable to those propositions in which opposite terms are predicated[50]. Nevertheless, he acknowledges that other modal

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[47] See MS Paris, Bibliothèque de l'Arsenal, 910, f. 89rb-va: «Et attende quia supradictae propositiones in his terminis propositae unum tantum sensum habent, propositae vero in contrariis sive in terminis oppositis multiplices sunt, sicut apparet in istis "possibile est album esse nigrum" vel "possibile est quendam hominem esse mortuum". Hae namque unum sensum habent per compositionem et ille falsus est, et alium per divisionem et ille verus est. Et quod per compositionem est, talis est scilicet quia: "album, manens album, potest esse nigrum"; et "aliquis homo, manens homo, potest esse mortuus". Quod vero per divisionem huiusmodi est quod "id quod est modo album potest esse nigrum in aliquo tempore"; et "qui modo est homo potest esse mortuus"».

[48] S. KNUUTTILA, *Time and Modality in Scholasticism*, in ID. ed., *Reforging the Great Chain of Being: Studies of the History of Modal Theories*, Reidel, Dordrecht 1981 (Synthese Historical Library 20), pp. 187 ff.

[49] See PETRUS ABAELARDUS, *Glossae super Peri Hermeneias* cit., pp. 417-418.

[50] On this point, the views advanced in the *Summa* strictly resemble those that are put forward in the *Glossae Doctrinae Sermonum* (ANONYMOUS, *Glossae Doctrine Sermonum* cit., pp. 216-217),

propositions also have more than one meaning, for instance, those in which the scope of the modal term is intertwined with that of the negative particle and the quantifier[51]. Here are some examples:

(1) For no animal it is impossible to be white (*nullum animal impossibile est esse album*):
    (1.a) no animal is unable to be white (*nullum animal est impotens esse album*);
    (1.b) this is impossible (or, this cannot be true): that an animal is white (*impossibile est quod animal sit album, id est non potest esse verum*)[52].
(2) For no man it is necessary not to be white:
    (2.a) no man necessarily lacks whiteness (*nullum animal necessitate caret albedine*);
    (2.b) it is necessary that no animal exists who is not white (*necesse est nullum animal non esse album, id est [necesse est] quod nullum animal careat albedine, hoc est quod nullum sit quod non sit album*).
(3) for no animal it is impossible not to be white (*nullum animal est impossibile non esse album*):
    (3.a) no animal is unable not to be white (*nullum animal est impotens carere albedine*);
    (3.b) this is impossible: that no animal exists who lacks whiteness (*impossibile est nullum animal esse quod careat albedine*).
(4) for no animal it is necessary to be white (*nullum animal necesse est esse album*):
    (4.a) no animal is necessarily white (*nullum animal necessario est album*);
    (4.b) it is necessary that no animal is white (*necesse est quod nullum animal sit album*).

Despite the intricacy arising from the interaction between mode, quantifier and negation, we may recognize that the distinction between the two senses is always solved in the same way. Propositions are interpreted by rephrasing them using either adverbial modes or expressions such as '(*im*)*potens esse*', or by means of a 'that-' (*quod-*) phrase. Although rarely em-

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whose author offers a division between the *per compositionem* and *per divisionem* reading of modals but claims that this distinction is not really useful apart from those cases in which opposite terms are predicated on the same thing: «Dicimus quod in paucis oportet fieri huiusmodi expositiones nisi opposita insint, ut "sedere" et "stare", "album" et "nigrum". Nam cum dicimus "possibile est stantem sedere", oportet exponi. Vel cum dicimus "Possibile est album esse nigrum"; nam quod est nigrum potest esse album, sed nil potest esse simul album et nigrum».

[51] This discussion echoes the one that was advanced in the *Maiores* to distinguish the «*negatio necessaria*» from the «*negatio necessarii*», considered in Section 2.

[52] This is false, the author says, because «it can happen that no animal is white» (*potest contingere quod nullum animal sit album*).

ployed by Abelard, the use of *quod* to disambiguate the structure of nominal claims was already in use in some early twelfth-century sources, such as the treatise on modalities *M3*[53]. This use becomes very common in later sources, for instance, in the commentary *H20*[54], the *De Propositionibus Modalibus*[55] and, as we will see, the *Ars Meliduna.*

As was mentioned, the author of the *Summa* applies the distinction between two possible interpretations of modes only to some modal propositions, stating that others, such as:

> (5) for every animal it is possible to be white (*omne animal possibile est esse album*),

present no ambiguity with respect to their meaning. Nevertheless, he reports the opinion of some who identify a semantic ambiguity in every modal proposition, saying that each one has a *sensus propositionis* and a *sensus rei*. According to them, (5) could be read as saying that:

> (5.a) it is possible that it happens as is said in this proposition: 'every animal is white' (*possibile est ita evenire ut dicitur hac propositione 'omne animal est album'*), or as:
> (5.b) each animal existing now can be white (*unumquodque animal modo existens potest esse album*).

To show that the two are different semantically, defenders of this idea provide another example: (6) 'it is possible for every animal to be a horse', saying that the proposition is true *de sensu propositionis*, for what the proposition 'every animal is a horse' says might happen, while it is false *de sensu rei*, for some of the animals that now exist cannot be horses[56]. Examples of

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[53] See MARTIN, *Modality without the Prior Analytics* cit.

[54] See *H20*: MS Orléans, Bibliothèque Municipale, 266, pp. 262b-263a.

[55] See ANONYMOUS, *De Propositionibus Modalibus* cit., p. 233, lin. 76-82.

[56] See MS Paris, Bibliothèque de l'Arsenal, 910, f. 90ra: « Sunt tamen qui dicunt istam "omne animal possibile est esse album" duos sensus [et] habere, unum videlicet propositionis et alium rei. Et propositionis quidem est huiusmodi quod "possibile est ita evenire ut dicitur hac propositione 'omne animal est album'". Sensus vero rei talis est quod "unumquodque animal modo existens potest esse album". Et quod ita sit hic, conantur ostendere huius similitudine "possibile est omne animal [est] esse equum", quia ista, quae similiter est universalis affirmativa de possibili et de esse, duos tales sensus habet. Namque unus sensus eius est "posse contingere ut haec propositio dicit 'omne animal est equus'". Sed secundum hunc vera est, quia si contingeret ut omnia animalia ad solos equos reducerentur, quod possibile est, tunc ita contingeret ut dicit haec propositio "omne animal est equus". Alius vero talis est quod "possibile est omne animal quod modo est esse equum". Quod falsum est, quia hoc nullo modo tempore contingere potest ».

this sort were considered by Abelard in the *Logica*[57], and they were also taken into account in the *Maiores* and the *Glossae Doctrine Sermonum*, similar to the ones used in the *Summa*[58].

The author of the *Summa* denies that the interpretation *de sensu propositionis* is a valid reading of modal claims such as (5) or (6). He says, in fact, that this would render the two modal propositions 'unsyllogistical', which would go against the authority of Aristotle and the system he provides in the *Analytics*[59]. He insists that the only proper understanding of modal propositions such as (5) or (6) is *de re*, or *de sensu rei*, although he admits that, understood *de re*, the meaning of some propositions such as (6) could still be disambiguated by means of a *per divisionem* or *per compositionem* interpretation[60]. Of propositions such as (6), the *Summa* then identifies three different readings: the « *de sensu propositionis* », which is thought to be an improper reading, the « *de sensu rei per divisionem* » and the « *de sensu rei per compositionem* ». These last two readings are both proper, but false. Although the passage in which the *Summa* develops this argument is concise, we find in it what was not yet explicitly theorized in Abelard's *Logica Ingredientibus*, namely, the differentiation between the *de re/de dicto* distinction on the one hand and the *per divisionem/per compositionem* distinction on the other.

To sum up, we may say that the author of the *Summa*, just as the one of the *Maiores*, is inclined to interpret modal propositions *de re*, or « *de sensu*

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[57] Petrus Abaelardus, *Glossae super Peri Hermeneias* cit., p. 417, lin. 634-639, where Abelard considers the proposition '*possibile est omnem substantiam esse spiritum*'.

[58] See footnote 27 on this.

[59] See MS Paris, Bibliothèque de l'Arsenal, 910, fol. 90 ra: « Sed talis sententia non est imitanda, quoniam nusquam ille sensus, quem dicunt esse propositionis, reperitur, quia neque Aristoteles qui (?) docuit facere syllogismos incisos ["incisos" *above the line after correction*], nec alius auctor eum intellexit, quia secundum ipsum ex tali propositione "omne animal possibile est esse album" et ex ista "omnis homo est animal" vel alia, nihil potest intelligi in syllogismo inciso, et si non <in> inciso certum est quia nec in alio. Unde secundum eundem propositio "omne animal possibile est esse album" non erit syllogi[sti]stica. Item secundum eundem non valet syllogismus iste quem docet facere Aristoteles, scilicet "omne animal possibile est esse equum, sed omnis homo est animal, igitur possibile est omnem hominem esse album". Ex quo apparet supradictam sententiam falsam esse dicimus ».

[60] See MS Paris, Bibliothèque de l'Arsenal, 910, fol. 90 ra: « Ergo quia neutra istarum propositionum "omne animal possibile est (*I have corrected from* posset) esse album" et "omne animal possibile est esse equum" habet sensum quem dicunt esse propositionis, sed eum iterum quem dicunt esse rei. Et ita volumus istam "omne animal possibile est esse album" unum solum sensum habere, sed de ista "omne animal possibile est equum esse" potest dici quod duos sensus habeat, unum videlicet per divisionem et alium per compositionem. Per compositionem talis est quod dicitur "animal manens id quod modo est animal totum potest esse equus". Per divisionem vero talis quod "omne animal non manens in toto esse quod modo habet, potest equus esse". Quarum uterque falsus est ».

rei». According to his reading, modal terms function as qualifiers of the verb to which they are attached, so that a claim such as 'it is possible for Socrates to dispute' is analysed by rephrasing it into the adverbial form 'Socrates disputes possibly', where 'disputes possibly' is the predicate. According to this reading, modal propositions have the same subject as their counterparts *de puro inesse*. This analysis requires him to admit a distinction between the grammatical structure of modal propositions and their 'deep', logical structure, which the author indeed admits, following Abelard, by talking about an analysis « *secundum terminos* » and an analysis « *secundum sensum* » or « *secundum rem de qua [propositio] agitur* ». The opinion of some is reported, who wrongly interpret modal propositions *de dicto*, or « *de sensu propositionis* », claiming that, in the proposition 'it is possible for every animal to be white', the mode functions as the predicate, and the subject is the *oratio* that follows it. They interpret the meaning of this propositions as: 'it is possible that it happens as this proposition says: "every animal is white"'. This interpretation is discarded because it would render modal propositions 'unsyllogistical', since they would have no quantity and there would be no middle term shared in the premises of *syllogismi incisi*. Even though he rejects the *de dicto* reading, the author still admits that some modal propositions (those in which opposite terms are predicated of the same thing) can be properly expounded in different ways, namely *per divisionem* and *per compositionem*. He also admits that other modal propositions are semantically ambiguous, namely those in which the scope of the modal operator is intertwined with that of the negative particle and the quantifier.

In support of his preference for the *de re* reading of modals, the only argument used by the author of the *Summa* is that this exposition alone renders modal propositions suitable for use in syllogisms, in accordance with the *Analytics*. Other arguments against the *de dicto* exposition, such as those advanced by Abelard in the *Dialectica*, are not mentioned. We will see in the next section that the author of the *Ars Meliduna*, albeit a supporter of the *de dicto* interpretation, nonetheless discusses a wide variety of arguments that may be raised against it, arguments that have to do with the use of modes in syllogistics but also with other logical and grammatical aspects of modal propositions.

4. THE *ARS MELIDUNA* ON MODAL PROPOSITIONS

The third and last text that I shall consider is the treatise that is called by de Rijk *Ars Meliduna*, preserved in MS Oxford, Bodleian Library, Digby 174, ff.

211-241[61]. The text is the product of the school of *Meludinenses*, connected to the teaching of Robert of Melun. Its dating is still very uncertain, although it is maintained by some scholars to be ca. 1175[62]. In this treatise, a discussion on modalities may be found as part of a wider discussion on propositions, and it begins by posing two questions: the first asks which propositions are said to be modal, and why; the second, what modal propositions are about (*de quo aguntur modales propositiones*), namely, whether these propositions assert something about things (and are therefore *de rebus*) or about a propositional content (*de dicto*). Interestingly, the issue of the proper interpretation of modal propositions is posed at the very beginning of the discussion, showing that the *de re-de dicto* distinction was a central issue at the time. In line with the other twelfth-century discussions on the same topic, the author states that the question about the proper interpretation of modals amounts to the problem of identifying the modal propositions' terms, that is, their subject and predicate: depending on which term we identify as the subject, we understand the proposition to be either about things or about *dicta*.

In answer to the first question, the author states that a modal is a proposition in which the 'coherence' of the predicate in the subject (*cohaerentia praedicati ad subiectum*) is qualified (*modificatur*) by one of the following terms: 'true', 'false', 'possible', 'impossible', 'necessary', 'contingent'. To these traditional six, the author adds the modes 'certain' (*certum*) and 'dubious' (*dubium*), perhaps envisaging — alone among his contemporaries — a possible use of modal logic to treat epistemic themes, a use that nevertheless he leaves unexplored. The author then remarks that other propositions had also traditionally been called 'modal' on the basis of the authority of Boethius, namely those in which adverbs such as 'well' or 'rapidly' are added as qualifications of the predicate. However, he points out that there is a distinction between terms that modify the *quality of the action* (*qualitas agendi*) expressed

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[61] Excerpts of this work were published by de Rijk in the *Logica Modernorum*, but I rely here mainly on Iwakuma's transcription of the entire work, which he generously shared with me.

[62] On the *Ars Meliduna*, see, in particular: G. NUCHELMANS, *Theories of the Proposition, Ancient and Medieval Conceptions of the Bearers of Truth and Falsity*, North-Holland, Amsterdam 1973, pp. 165-176; Y. IWAKUMA, *Enuntiabilia in XIIth Century Logic and Theology*, in C. MARMO ed., *Vestigia, Imagines, Verba Semiotics and Logic in Medieval Theological Texts (XIIth-XIVth Century)*, Brepols, Turnhout 1997, pp. 19-35; J. BIARD, *Le Langage et l'incorporel. Quelques réflexions à partir de l'Ars Meliduna*, in ID. ed., *Langage, sciences, philosophie au XIIe siècle*, Vrin, Paris 1999, pp. 217-234; A. DE LIBERA, *La Querelle des universaux*, Éditions du Seuil, Paris 1996, pp. 158-167; A. DE LIBERA, *L'Art des généralités: Théories de l'abstraction,* Aubier, Paris 1999, pp. 132; 148; C. J. MARTIN, *Propositionality and Logic in the Ars Meliduna*, in A. MAIERÙ, L. VALENTE eds., *Medieval Theories on Assertive and Non-assertive Language*, Olschki, Firenze 2004, pp. 111-128. On the question of dating, see footnote 4 above.

by the predicate and terms that modify the *way of inherence* (*modus cohaerendi*) of the predicate in the subject, and he recognizes only the latter as modes[63].

After these preliminary observations, the *Ars* focuses on the semantic ambiguity of modal claims and on the two readings *de re* and *de dicto*, which he reports are applied by some people to every modal proposition. They say that a modal proposition such as 'for Socrates to be a man is possible' (*Socratem esse hominem est possibile*) is *de re* if we expound it as having the same subject and predicate as the corresponding claim *de puro inesse* — respectively, 'Socrates' and 'man' — and if the mode is taken as a determination of the predicate. The same proposition is instead *de dicto* if we take the mode 'possible' to function as a predicate, and if as subject we take the entire infinitive phrase (*oratio*) that names or denotes the *dictum* '*Socratem esse hominem*'[64]. The words '*oratio*' and '*dictum*' are used in a technical sense here: in the *Ars Meliduna*, a *dictum* — a term that is used synonymously with *enuntiabile* — is what is signified by a proposition. *Dicta* are denoted by linguistic sentences (*orationes*) that have an accusative infinitive structure, such as '*Socratem esse hominem*'[65]. If we read the modal proposition *de dicto*, then, the subject of this proposition is the name of a *dictum*, or an *appellatio enuntiabilis*, as will be said later in the *Ars* (f. 228vb).

Identifying the *de re-de dicto* distinction with that of *per divisionem-per compositionem*, the *Ars* continues by saying that, according to some, this distinction could be used to disambiguate propositions in which two opposite terms are predicated, such as the usual 'it is possible for what is white to be black', which would be true *de re* and false *de dicto*. In opposition to the idea that every modal proposition may be expounded as having two senses, the author of the *Ars Meliduna* claims that only the *de dicto* one is a proper reading of modals, and he supports this idea with two arguments, one based on logical and the other on grammatical reasons. The first states that if modal propositions were understood *de re* — that is, as having *the same terms* as the corre-

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[63] As was seen in Section 3, the *Summa Periermeneias* endorses a different position on this matter.

[64] MS Oxford, Bodleian Library, Digby 174, f. 228va: «Potest autem omnis modalis, ut volunt quidam, dupliciter exponi: tum de re, tum de dicto. Et de re exposita, eosdem habet terminos cum illa de inesse a qua descendit, ut "Socratem esse hominem est possibile", si de re exponatur, subiectum terminum habet hoc nomen "Socrates", praedicatum "homo", modus vero nec subiectus est nec praedicatus neque pars alterutrius eorum, sed determinatio praedicati. Exposita autem de dicto, subiectum habet orationem dicti nominatam, praedicatum vero modum».

[65] Because the grammatical structure of these expressions is relevant for the analysis put forward in the *Ars Meliduna*, I will leave Latin constructions of this sort untranslated in this section.

sponding *de puro inesse* propositions — then we should be able to put them in logical relation with propositions *de puro inesse* according to the usual inference rules established in the square of oppositions. So, for instance, a universal affirmative proposition such as 'for every man it is possible to be white' would entail the corresponding particular affirmative proposition 'some man is white' and be contradictory to the negative particular 'some man is not white'. Moreover, two propositions such as 'for some man it is possible to be white' and 'some white thing is a man' would be equivalent by virtue of simple conversion. However, these logical inferences are evidently invalid, and therefore the *de re* reading cannot be admitted[66].

This first argument is puzzling, for it seems not to acknowledge that even if the subject and the predicate of simple and modal propositions are the same, a modally qualified inherence between these terms does not behave logically as the corresponding inherence *de puro inesse*, and this is why the usual logical relations do not hold between propositions of the two kinds. Nonetheless, this seems too obvious a point to be missed by a refined logician such as the author of the *Ars Meliduna*. To appreciate the force of his argument we should consider that in the first half of the twelfth century the usual characterization of *de re* modal propositions was given by rephrasing them into an adverbial form, so that the proposition 'for every man it is possible to be white', interpreted *de re*, would be equivalent to 'every man is possibly white'. Adverbial propositions of this sort were further analysed by reducing them to propositions *de puro inesse* such as 'every man is white', saying that the two have the same terms and the same syntactical structure. However, whereas in the latter the predicate is said to inhere *simpliciter* in the subject, in the former this inherence is qualified by the mode, which specifies 'in which way' (*quomodo*) the inherence holds[67]. This reading of modes was widely accepted because it allowed logicians to account for the fact that modal propositions are variable in quality and quantity, just like their simple categorical counterparts, and to maintain a consistent and unitary theory of propositions. Nevertheless, several problems arise from this analysis of *de re* understanding of modal propositions, one being precisely the logical relation between *de re* modal propositions and propositions *de puro inesse*. The reading

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[66] MS Oxford, Bodleian Library, Digby 174, f. 228va : « Adhuc autem "omnem hominem esse album est possibile" "quidam homo est albus" utroque termino participant, et sunt eiusdem qualitatis, una est universalis et altera particularis, ergo sunt subalternae. Similiter probabis quod "omnem hominem esse album est possibile" "quidam homo non est albus" sunt contradictoriae, et "quendam hominem esse <album> est possibile" "quoddam album est homo" simpliciter conversae ».

[67] See footnote 36 above.

of modes as inherence-qualifiers suggests that every modal inherence of the form 'S is P in a certain way (*cum modo*)' entails the corresponding simple inherence 'S is P', which is evidently false in many cases, for example, with modes such as 'possibly' or 'falsely'. This problem was raised, for instance, in the treatises *M1* and *M3* as an argument against the idea that nominal modals could be rephrased in an adverbial form[68]. This objection also seems to lie in the background of the argument used in the *Ars Meliduna* against the *de re* interpretation. If modal propositions were interpreted *de re*, with the mode performing the function of a qualifier of the inherence of the predicate in the subject, then the proposition 'for every man it is possible to be white' would entail that 'every man is white', and therefore 'some man is white' would be its sub-contrary and 'some man is not white' its contradictory. But this is false. The first argument raised in the *Ars* would therefore be a stronger argument than it seems at first sight, if we read it as addressed not to the *de re* interpretation in general, but to how this interpretation was analysed in the twelfth century.

To understand the second argument, '*ex ratione grammaticorum*', we must consider the proposition 'for a white thing it is possible to be black' and its Latin structure : '*album esse nigrum est possibile*'. This proposition, the author claims, expresses either a personal or an impersonal predication. Because the copula '*est*' is connected to a term in the nominative case, namely '*possibile*', we infer that it is a personal predication. Since '*est*' is used personally, it must relate the nominative term '*possibile*' to some other term in the nominative case or to something that is posed in its place. The term to which '*possibile*' is predicated, he concludes, cannot be but the entire *oratio* '*album esse nigrum*'. It is the referent of this *oratio* — that is, its *dictum* or propositional content — that the modal proposition talks about. After positing the two arguments, the author concludes that the *de dicto* reading is the only proper interpretation of every modal proposition (*qualibet modali tantum de dicto agitur*)[69].

However, the author acknowledges that there are a number of problems connected to the *de dicto* reading, which he then lists and answers. Although

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[68] See on this Martin, *Modality without the Prior Analytics* cit. and Binini, *The* de re-de dicto *Distinction* cit.

[69] MS Oxford, Bodleian Library, Digby 174, f. 228va-b : « Ex ratione quoque grammaticorum potest illud improbari. Nam in hac locutione "album esse nigrum est possibile" ponitur "est" personaliter vel impersonaliter ; nec potest dici quod impersonaliter, cum copulat nominativum ; quare personaliter, et copulat post se nominativum, scilicet hunc nominativum "possibile" ; ergo copulat ipsum nominativo vel alicui posito loco nominativi ; at vero nulli nisi huic orationi "album esse nigrum" ; ergo illa supponit verbo, ergo de re illius agitur. Ideo dicimus qualibet modali tantum de dicto agi ».

not always easy to follow, this list of arguments is extremely interesting, for it is the most detailed discussion on the *de re-de dicto* distinction that is offered in logical sources of this time. Moreover, the variety of arguments — concerning not only logical but also grammatical and linguistic aspects of modals — goes well beyond earlier discussions on the same topic. I should remark, however, that not all arguments seem to have the same level of sophistication. Furthermore, many passages are extremely succinct and difficult to comprehend. In what follows, I consider only some of the many argumentations provided.

The first problem that is considered is one that we have already encountered in the previous texts, namely, the suitability of *de dicto* propositions for syllogistics. Like his contemporaries, the author of the *Ars Meliduna* maintains that, considered *de dicto*, each modal proposition is invariable with respect to its quantity, and, as such, cannot be used to construe syllogisms. Nevertheless, he suggests, we may solve this problem by saying that — only with respect to their use in syllogisms — modal propositions can be taken as having the same terms as the simple categorical propositions from which they are construed. A more convincing answer however, he continues, is to say that the phrases (*orationes*) put forward by Aristotle in his modal syllogistic are not real syllogisms (otherwise they would be false), but arguments that are called in this way because of their apparent syllogistic form. Another viable option, which would not conflict with Aristotle's authority, would be to interpret Aristotle's system as involving only adverbial modal propositions, which are indeed '*syllogisticae*', and not nominal ones[70]. Like many other logicians of this century, the author of the *Ars* therefore assumes that within his theory of mixed syllogisms Aristotle interpreted modal propositions *de re*.

Another — more unusual — objection to the *de dicto* interpretation has to do with modal terms that are predicated of ill-formed *orationes*, such as those that are self-contradictory[71]. As example, the author of the *Ars* takes the

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[70] MS Oxford, Bodleian Library, Digby 174, f. 228vb: « Nam modales, licet non sint nisi singulares, tamen aequipollent universalibus vel particularibus in syllogizando, et assignantur tunc aliter termini propositionum, aliter syllogismorum qui ex eis fiunt; etenim syllogismus eosdem habet terminos cum eo qui ex eis de inesse contexitur. Vel, quod verius, potest dici quod orationes illae non sunt syllogismi, immo argumentationes falsae, sed propter formam syllogisticam quam habere videntur vocat eos syllogismos. Aut ne auctori in aliquo contrarii videamur, dicemus eum id intellexisse de illis quae modos habent adverbiales a nominibus inflexos; illae enim syllogisticae sunt ut "omnis homo necessario est animal", sed "omne risibile necessario est homo", ergo "omne risibile necessario est animal" ».

[71] On the issue of ill-formedness (*incongruitas*) in mid-twelfth century logical and grammatical texts, see S. EBBESEN, *The Present King of France Wears Hypothetical Shoes with Categorical Laces: Twelfth-Century Writers on Well-Formedness*, « Medioevo » 7, 1981, pp. 91-113.

modal proposition (i) 'for something to be a man who is not animal is impossible' (*aliquid esse hominem quin ipsum sit animal impossibile est*). If we interpreted (i) *de dicto*, we would be predicating the impossibility of the *dictum* denoted by the *oratio* '*aliquid esse hominem quin ipsum sit animal*'. However, the author continues, this *oratio* does not denote any *dictum* (« *non est appellatio alicuius enuntiabilis* »), because if it did refer to a *dictum*, this should be either true or false, while the phrase '*aliquid esse hominem quin ipsum sit animal*' is neither. The author does not elaborate on the reason why this is the case, but it seems that the objection is based on the fact that this phrase is incongruous, either because it attributes two incompatible properties ('man' and 'non-animal') to the same subject, or because the *oratio*'s subject term fails to denote[72]. Because there is not *dictum* corresponding to the *oratio*, the modal proposition (i) cannot be interpreted *de dicto*[73]. The author then states that the same objection might be raised when considering propositions such as (ii) '*possibile est Socratem legere cras*'. Although he does not explain the analogy between (i) and (ii), what he intends is probably that also in the case of (ii) the *oratio* following the mode is ill-formed, because it includes a verb in the present tense (the infinitive '*legere*') and a temporal index referring to the future (*cras*). In answer to these arguments against the *de dicto* reading, the author suggests that perhaps sentences such as these are not said in Latin, or that they should not be considered modal propositions but rather impersonal constructions *de inesse* in which the verb '*est*' is posited impersonally[74].

Other arguments are then considered against the *de dicto* reading, for example, the fact that this reading would render true propositions such as: 'for you to know more things than you know is impossible' (*te scire plus quam scias*

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[72] As Ebbesen notes, both these justifications for the ill-formedness of propositions were advanced in the *Ars Meliduna* and in other texts of the second half of the twelfth century. He states that, indeed, « there seems to be a common ground for the ill-formedness of nonsensical sentences in which one term attributes perennially incompatible properties to the same bearer and the ill-formedness of sentences in which temporarily bearerless properties are specified for the argument of a predicate ». A sentence like 'A man who is capable of braying is running' might be considered ill-formed and non-sensical for either of these two reasons. See EBBESEN, *The Present King of France* cit., p. 103.

[73] MS Oxford, Bodleian Library, Digby 174, f. 228vb: « Amplius, sunt quaedam modales in quibus non videtur posse agi de dicto vel modus praedicari, ut "*aliquid esse hominem quin ipsum sit animal, est impossibile*". Etenim haec oratio "*aliquid esse hominem quin ipse sit animal*" non est appellatio alicuius enuntiabilis, quia tunc illud esset verum vel falsum, et ita verum vel falsum esset aliquid esse hominem quin ipse sit animal, quod inconvenienter dicitur ».

[74] MS Oxford, Bodleian Library, Digby 174, f. 228vb: « Et erit solutio vel quod non est Latine dictum, aut quod verbum impersonaliter ibi ponitur, nec sunt propositiones modales, immo per accusativum fit suppositio locutioni ».

est impossibile) ; 'for no one but Socrates is it possible to be white' (*nullum praeter Socratem esse album est possibile*) ; or 'for everything that is an animal to be man is possible' (*omne id quod est animal esse hominem est possibile*). The author of the *Ars* seems to admit that these are true. Notice that examples similar to this last one were considered in the *Summa Periermeneias* to show the unsuitability of *de dicto* modals for syllogisms.

Finally, a further objection raised against the *de dicto* reading concerns propositions including the mode 'necessary' that have the form : (iii) 'for God to exist is necessary' (*deum esse est necesse*). There may be some doubt about whether these are modal, the author says, for if we interpret them *de dicto*, we would be predicating the necessity of a *dictum*, and so we would be saying that 'this *dictum* is necessary', which according to the author is incongruous[75]. The *Ars Meliduna* reports that two different solutions have been advanced in answer to this objection. According to some, these propositions are indeed modal and should be read *de dicto*, but they should be rephrased as follows : '*deum esse est necessarium*' instead of '*deum esse est necesse*'[76]. According to others, propositions such as (iii) are not modal but rather propositions *de puro inesse* in which the verb '*est*' is posited impersonally. If this is the case, propositions such as these must be interpreted not as being about a *dictum* (*de dicto*), but rather as being about the things that are signified by the term in the accusative case that in the construction '*deum esse est necesse*' is placed at the beginning of the predication (*de re accusativi antecedentis*). It is notable what the author says next, namely, that if we are inclined to this *de re* understanding, it would be better to construe syntactically the sentence by changing the order of the words, saying '*deum necesse est esse*'[77]. This con-

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[75] MS Oxford, Bodleian Library, Digby 174, f. 228vb : « Praeterea quaeritur de illis quae habent hunc modum "necesse", utrum ipsae sint modales, ut "deum esse est necesse". Quodsi est, ergo ea, ut diximus, de dicto agitur ; et ita de dicto dicitur quod sit necesse ; ita hoc dictum est necesse, quod incongrue dicitur ».

[76] MS Oxford, Bodleian Library, Digby 174, ff. 228vb -229ra : « Ad hoc duplex secundum diversos est solutio. Recipiunt enim quidam huiusmodi propositiones esse modales, et in eis agi de dicto ; sed non potest loco appellationis dictio vel oratio alia sumi, quia modus iste "necesse" talis naturae est quod semper exigit suppositionem fieri per appellationem enuntiabilis, velut adiectiva secundae impositionis suppositionem sibi volunt fieri per consimilia substantiva. Itaque licet deum esse dicatur tali voce "est necesse", tamen non similiter dici poterit quod hoc dictum <est necesse>, sed necessarium ; sic hac propositione "hic homo est albus" dicitur hic homo esse albus, non tamen hoc risibile albus sed album. Oportet enim generis facere commutationem, et ibi similiter modi ».

[77] MS Oxford, Bodleian Library, Digby 174, f. 229ra : « Alii dicunt eas non esse modales, sed potius de inesse ; et verbum habere impersonaliter positum ; unde in eis non agitur de dicto, sed de re accusativi antecedentis ; unde sic melius ordinarentur dictiones in locutione 'deum

struction seems more suitable because it more clearly shows that the scope of the modal term is narrow, and that it does not include the term '*deum*', which is taken to function as a subject. This is worth mentioning because it explicitly states what was also implicitly suggested by the authors of the *Maiores* and of the *Summa*, namely, that the grammatical order in which nominal modals are construed is significant for their interpretation *de re* or *de dicto*, for the syntactical position of the mode reveals its semantic scope. As far as I know, this was never expressed clearly by Abelard.

There are several additional arguments against the *de dicto* reading that the author of the *Ars Meliduna* considers, attributing them to other, unnamed, thinkers. Although it is not possible to consider them all in detail here, it is evident from this list that the *de dicto* reading had many fierce opponents, and that a lively debate was going on at this time about the proper interpretation of modals. A more careful study of the *Ars* would be highly important for assessing the various positions on this matter, but I will leave this for a different study and try to draw some conclusions from what has been said so far.

5. Conclusion

The *Introductiones Montane Maiores*, the *Summa Periermeneias* and the *Ars Meliduna* all offer valuable discussions of modalities, which are partly inspired by Abelard's *glossae* and other early twelfth century debates, but also offer original elements and raise new doubts concerning the analysis of modal propositions. Central to these mid-twelfth century discussions are the distinction between the *de re* and *de dicto* readings of modals and the suitability of modal propositions for use in *syllogismi incisi.* On this point, the three authors advance a different position. According to the *Maiores*, propositions including modes can be expounded both *de re* and *de dicto.* The author of the *Summa Periermeneias* instead claims that only the *de rebus* interpretation is a proper reading of modes, although he admits that *de re* propositions can be further expounded *per compositionem* or *per divisionem.* Finally, the author of the *Ars Meliduna* supports the *de dicto* interpretation of modalities, but acknowledges and tries to overcome a number of problems related to this interpretation. In spite of their divergence, all the authors agree that Aristotle's modal syllogistics is only valid if we take modal propositions *de rebus*, and they defend this view with two main arguments. The first argument states

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necesse est esse'; et ita nullum hominem esse album est necesse, non tamen necessarium, quia hic de re, ibi de dicto ».

that if we read modal propositions *de dicto*, they would be invariable with respect to quantity — an argument that was also common in earlier sources on modalities. The second argues that if *de dicto* propositions were included in mixed syllogisms, there would be no middle term shared by the two premises. This argument seems peculiar to sources dating after Abelard's *Logica Ingredientibus*. Some authors — such as that of the *Ars Meliduna*, but also that of the anonymous *De propositionibus modalibus* — think that, if we take modal propositions *de dicto*, Aristotle's arguments in the *Prior Analytics* would still be valid, but only apparently syllogisms.

As in Abelard's texts, the distinction between the *de re* and *de dicto* readings is formulated by distinguishing two possible ways to identify the terms — the predicate and subject — of a proposition such as 'it is possible for every man to be animal'. If we read it as having the same terms as the corresponding simple categorical proposition 'every man is an animal', the proposition would be *de re* or *de rebus*, that is, it would assert something about *things* (*res*). If we instead take the mode to function as the predicate, the modal proposition asserts something about the simple claim from which it descends, and about what this proposition says (its *dictum* or *sensus propositionis*). In sources from the mid-twelfth century, unlike in Abelard's and earlier texts, authors say that, according to this last interpretation, the subject of the modal proposition is the entire *oratio* that is attached to the mode.

In order to defend the *de re* analysis, one should admit that there is a discrepancy between the grammatical structure of modal propositions and their meaning — or, as we would say, their 'logical form'. Abelard allowed for this discrepancy, saying that we should distinguish between the analysis *secundum constructionem* and the analysis *secundum sensum* of modal propositions. The same distinction is echoed in the *Maiores* and the *Summa.* However, authors of the mid-twelfth century also applied another strategy to indicate syntactically whether a proposition should be read *de rebus* or *de dicto*, that is, by changing the order of the words and by placing the mode at either the beginning or the end of a sentence, or in the middle of the infinitive clause, as in 'for every animal it is possible to be a man' (*omne animal possibile est esse hominem*). This last construction indicates that the mode has a narrow scope, which does not include '*omne animal*'. It is not clear whether Abelard also made use of this strategy, but, if he did, he certainly never expressed it clearly. This syntactical device is not used consistently in later sources either, but some passages suggest that it was admitted, and the *Ars Meliduna* refers to it explicitly.

There are several other elements that show how the discussion of modalities in mid-twelfth century texts goes beyond Abelard's analysis. One of

these is for instance the use of 'that-' ('*quod-*') clauses to express *de dicto* modal propositions. Another is the separation made by the author of the *Summa Periermeneias* between the *de re/de dicto* distinction and the *per divisionem/per compositionem* one. Differently from the reading *in sensu composito*, the *de dicto* interpretation was used in sources of this time to consider situations in which the domain of objects is different from the actual one. Another minor but significant novelty is the discussion on whether modes should be characterized as qualifiers of a verb and of the action expressed by it (*modus actionis*) or rather as qualifiers of the inherence of the subject in the predicate (*modus inhaerentiae*).

Certainly, other important elements that constitute mid-twelfth-century modal theories are left out of the survey conducted here, and are yet to be identified. A more detailed study of these texts, and of the context in which they were produced, would allow for these theories to be more carefully reconstructed.

ABSTRACT

Discussing Modalities in the Mid-Twelfth Century: An Introductory Study of the Introductiones Montane Maiores, *the* Summa Periermeneias *and the* Ars Meliduna *on the* de re/de dicto *Distinction*

In this article, I bring attention to three interesting — though still unexplored — discussions on modalities that are found in some logical sources datable in the middle and the second half of the twelfth century. Through the examination of the '*Introductiones Montane Maiores*', the unedited '*Summa Periermeneias*' and the '*Ars Meliduna*', I retrace the different positions that masters of the time had on the syntactic structure of modal propositions and their use in modal syllogistic. My reconstruction particularly focuses on the distinction between *de re* and *de dicto* modalities, a distinction that authors in the second half of the century inherited from Abelard and his contemporaries, and further developed to support their grammatical and logical analysis of modals.

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