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## The *Casus obligationis* Attributed to William Heytesbury\*

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### Abstract

*Casus obligationis* is a short fourteenth-century collection of five epistemic sophisms, preserved in four fourteenth- and fifteenth-century manuscripts. The text has attracted scholars' attention due to its attribution to William Heytesbury. The treatise follows the second chapter of Heytesbury's *Regule solvendi sophismata* in discussing issues of epistemic logic, but diverges from this source in several interesting ways. The present study presents a critical edition of the text, discusses its

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relation to *Regule solvendi sophismata*, and analyses some of its basic features, namely the endorsement of the framework of *obligationes*, the distinction between two basic forms of modal statements (the so-called *sensus compositus* and *sensus divisus*), the problem of logical omniscience, and the Bradwardinian theory of sentential meaning as closed under entailment.

### Introduction

William Heytesbury (ca. 1313–1373), called *doctor Anglicus* and *rex sophistarum*, belonged to the second generation of Oxford Calculators.<sup>1</sup> His extant writings, dated conjecturally to the 1330s are predominately concerned with sophisms of different kinds. His most influential work, entitled *Regule solvendi sophismata*, is preserved in ca. forty hitherto identified manuscripts (with possibly others to be identified), and is a collection of six treatises addressing self-referential paradoxes, epistemic and doxastic logic, relative terms, beginning and ceasing, maxima and

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<sup>1</sup> The two honorifics were attributed to Heytesbury in a Venetian manuscript of his *Sophismata*, see William Heytesbury, *Sophismata asinina: une introduction aux disputes médiévales*, ed. Fabienne Pironet (Paris: Librairie Philosophique J. Vrin, 1994), 622. For general biographical and bibliographical overview of William Heytesbury, see Miroslav Hanke and Elżbieta Jung, “William Heytesbury,” in *The Stanford Encyclopedia of Philosophy* (Spring 2018 Edition), ed. Edward N. Zalta, URL = <https://plato.stanford.edu/archives/spr2018/entries/heytesbury/> (the text includes an overview of Heytesbury’s logic, which can be consulted throughout the paper); John Longeway, “William Heytesbury,” in *Encyclopedia of Medieval Philosophy: Philosophy between 500 and 1500*, ed. Henrik Lagerlund (Dordrecht: Springer, 2011), 1397–1399; Benoît Patat, *Dictionnaire des philosophes médiévaux* (Saint Laurent: FIDES, 2006), 180–182; Paul Vincent Spade, “The Manuscripts of William Heytesbury’s ‘Regulae Solvendi Sophismata’: Conclusions, Notes and Descriptions,” *Medioevo* 15 (1989): 271–314, Olga Weijers, *Le travail intellectuel à la Faculté des arts de Paris: textes et maîtres (ca. 1200–1500). Répertoire des noms commençant par G* (Turnhout: Brepols, 1998), 212–217; James A. Weisheipl, “Ockham and Some Mertonians,” *Medieval Studies* 30 (1968): 163–213 and “Repertorium Mertonense,” *Medieval Studies* 31 (1969): 174–224, Curtis Wilson, *William Heytesbury: Medieval Logic and the Rise of Mathematical Physics* (Madison, WI: The University of Wisconsin Press, 1960) and “Heytesbury, William,” *Dictionary of Scientific Biography*, vol. VI (New York: Scribner, 1972), 376–380.

minima, and elementary kinematics.<sup>1</sup> Another work, *Casus obligationis*, called also *Casus obligatorii*, or *Quinque casus*, attributed to Heytesbury is a collection of five epistemic sophisms preserved in (at least) four manuscripts. While considerable attention has been paid to epistemic logic in *Regule solvendi sophismata*,<sup>2</sup> *Casus obligatorii* has for the most part been neglected. The present study attempts to fill this gap by offering a critical edition of the text and pointing out some of its interesting features.<sup>3</sup>

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<sup>1</sup> Treatises number one, two and five were translated into English based on the 1494 incunabular editions and some of the manuscripts, see William Heytesbury, *William of Heytesbury on "Insoluble" Sentences*, ed. and transl. Paul V. Spade (Toronto: Pontifical Institute of Medieval Studies, 1979), *William Heytesbury On Maxima and Minima. Chapter 5 of "Rules for Solving Sophismata", with an anonymous fourteenth-century discussion*, ed. and transl. John Longeway (Dordrecht: D. Reidel Publishing Company, 1984), "The Verbs 'Know' and 'Doubt'," in *The Cambridge Translations of Medieval Philosophical Texts, Vol. 1: Logic and Philosophy of Language*, ed. and transl. Norman Kretzmann and Eleonore Stump (Cambridge: Cambridge University Press, 1988), 435–479, and the first treatise was translated into Italian as well, see "De insolubilibus Guilelmi Hentisbery," in *Il Mentitore e il Medioevo: il dibattito sui paradossi dell'autoriferimento: scelta di testi, commento, traduzione*, ed. and transl. Lorenzo Pozzi (Parma: Edizioni Zara, 1987), 212–251. There is also a partial edition with a translation of the sixth treatise published in Marshall Clagett, *The Science of Mechanics in the Middle Ages* (Madison/London: The University of Wisconsin Press/Oxford University Press, 1959), 235–242 and 270–283 and a translation published in Edward Grant (ed.), *A Source Book of Medieval Science* (Cambridge, MA: Harvard University Press, 1974), 237–242.

<sup>2</sup> See William Heytesbury, "The Verbs 'Know' and 'Doubt'," 435–479 and (among others) Ivan Boh, *Epistemic Logic in the Later Middle Ages* (London: Routledge, 1993), 62–77, Robert Pasnau, "William Heytesbury on Knowledge: Epistemology without Necessary and Sufficient Conditions," *History of Philosophy Quarterly* 12 (1995): 347–366, and David B. Martens, "William Heytesbury and the Conditions for Knowledge," *Theoria* 76 (2010): 355–374.

<sup>3</sup> The most significant exceptions are Eleonore Stump, *Dialectic and Its Place in the Development of Medieval Logic* (Ithaca and London: Cornell University Press, 1989), 239 and two recent studies, namely Stephen Read, "Obligations, Sophisms and Insolubles," Working Paper WP6/2013/01, Series WP6 (Moscow: Higher School of Economics, National Research University, 2013) and Spencer Johnston, "'This Is Socrates': a Mertonian Sophism about Signification," working Paper WP6/2013/02, Series WP6 (Moscow: Higher School of Economics, National Research University, 2013), the second of which contains a transcription and analysis of the Oxford manuscript of one of the sophisms. Some aspects of Heytesbury's epistemic logic are discussed in Hanke, Jung, "William Heytesbury" (which does not reflect the present results yet).

## 1 Study

*Casus obligationis* (henceforth, [CO]) pertains to a broader Heytesburian corpus. It bears close relations to *Regule solvendi sophismata* (henceforth, [RSS]), currently viewed as authentic, and *Probationes conclusionum* (henceforth, [PC]), currently viewed as inauthentic.<sup>1</sup> The three texts share problems, methodology, and to some extent even general doctrinal orientation.<sup>2</sup> As an introduction to the critical edition, these relations will be explored.

### 1.1 Relations to *Regule solvendi sophismata*

Eleonore Stump frames some of the fundamental problems related to [CO] as follows: “the *Casus* excerpts and abbreviates the text in the *Regule*; though there are some discrepancies between the two, these seem to me minor.”<sup>3</sup> First, as an abbreviation, [CO] would likely be an inauthentic text derived from [RSS]. Second, it would be possible to ask from which family of the [RSS]-manuscripts [CO] is derived. Third,

<sup>1</sup> The authenticity of [PC] has been doubted already by Pierre Duhem (see his *Le système du monde: histoire des doctrines cosmologiques de Platon à Copernic*, vol. VII (Paris: Hermann, 1956), 86–87, transl. in *Medieval Cosmology: Theories of Infinity, Place, Time, Void, and the Plurality of Worlds* (Chicago: University of Chicago Press, 1987), 71), based on formal differences between [PC] and [RSS]. Duhem conjectured [PC] to be a collection of proofs to theses not proved in [RSS], which is a view reiterated in Wilson, *William Heytesbury*, 178. As part of the afore-mentioned research, three manuscripts of [PC] have been surveyed, namely Città del Vaticano, Biblioteca Apostolica Vaticana, Vat. lat. 2189, Praha, Národní knihovna, X.H.11, and Venezia, Biblioteca Nazionale Marciana, Z. lat. 277. For a description of the manuscripts (some of which are incomplete), see Weisheipl, “Repertorium Mertonense,” 216 and Olga Weijers, *Le travail intellectuel à la Faculté des arts de Paris: textes et maîtres (ca. 1200–1500). Répertoire des noms commençant par G*, 116 (which do not include the aforementioned Prague manuscript and other possible candidates mentioned in Spade’s “The Manuscripts of William Heytesbury’s ‘Regulae Solvendi Sophismata’”). For practical reasons, the incunabular edition will be used for reference: William Heytesbury, *Probationes conclusionum* (Venezia: Bonetus Locatellus, 1494), henceforth [PC].

<sup>2</sup> Another parallel passage can be found in William Heytesbury, *Sophismata* (Venezia: Bonetus Locatellus, 1494), fol. 91rb. Fabienne Pironet’s edition is available in digital form; URL = [http://ddata.over-blog.com/xxxxyy/4/07/38/29/Textes-Philomed/Heytesbury/W\\_Heytesbury\\_Sophismata\\_Part1.pdf](http://ddata.over-blog.com/xxxxyy/4/07/38/29/Textes-Philomed/Heytesbury/W_Heytesbury_Sophismata_Part1.pdf).

<sup>3</sup> Stump, *Dialectic and Its Place in the Development of Medieval Logic*, 239.

[CO] would have the date of composition of [RSS] as its *terminus a quo* and the composition of the earliest manuscript of [CO] as its *terminus ante quem*, which would put it between ca. 1330 and 1390. Prior to addressing these questions, the adequacy of Stump’s claim must be discussed. To do that, let us decompose [CO] and treat the parallels between the two texts one component at a time.<sup>1</sup>

[CO]’s sophisms are built up from the initial scenario, the opening arguments, an evaluation of the scenario, and a solution to the arguments.<sup>2</sup> Stump’s abbreviation-thesis is adequate as far as the initial scenarios are concerned, as can be seen from the following table:

<i>Regule solvendi sophismata</i>	<i>Casus obligationis</i>
[Arg. 7] Item tu scis quod hoc est Socrates et dubitas an hoc sit Socrates (eodem demonstrato), propter quod ponatur quod heri videris Socratem et scias adhuc quod ille homo quem heri vidisti est Socrates et videas Socratem modo et lateat te an sit Socrates, sed credas quod ille homo quem nunc vides sit Plato et non videas aliquem nisi Socratem. [[RSS], fol. 13ra]	[Casus 1] Primo ponatur talis casus quod heri viderim Socratem et nullum alium a Socrate viderim et bene sciam illud et quod Socrates nunc sit coram me et nesciam ipsum esse Socratem. [see below]
[Arg. 2] Ponatur quod tu scias quod sit verum istorum demonstratis istis contradictoriis tibi dubiis: “rex sedet”, “nullus rex sedet”, sic quod scias quod	[Casus 2] Item ponitur quod sint duo contradictoria contingentia, scilicet: “rex sedet”, “nullus rex sedet”, et quod <i>A</i> sit illud quod est verum et scias quod illud quod est

<sup>1</sup> The subsequent analysis is preliminary and defeasible by a critical edition of [RSS]. For practical reasons, the incunabular edition William Heytesbury, *Regule solvendi sophismata* (Venezia: Bonetus Locatellus, 1494), henceforth [RSS], will be referenced.

<sup>2</sup> The translation of “casus” as “scenario” was suggested by Stephen Read in “Swyneshed, Aristotle and the Rule of Contradictory Pairs,” *Logica Universalis* 14 (2020): 27–50.

<p>quodcumque istorum sit <i>A</i> quod ipsum sit verum et quod solum ipsum sit <i>A</i> et e contra, et cum hoc scias quod <i>A</i> est verum istorum, nescias tamen quod istorum sit <i>A</i>, sicut nescis quod istorum sit verum. [[RSS], fol. 12va]</p>	<p>verum est <i>A</i> et quod nescias quid illorum sit <i>A</i>. [see below]</p>
<p>[<b>Arg. 4</b>] Item posito quod scias quod hoc sit Socrates vel Plato, nescias tu tamen an hoc sit Socrates nec scias an hoc sit Plato... [[RSS], fol. 12vb]</p>	<p>[<b>Casus 3</b>] Item ponitur quod Socrates et Plato sint coram te et bene scias quod hic est Socrates et Plato et nescias quod illorum sit Socrates nec quod illorum sit Plato. [see below]</p>
<p>[<b>Arg. 6</b>] Item sint <i>A</i>, <i>B</i>, <i>C</i> tres propositiones quarum due sint scite a te, scilicet <i>A</i> et <i>B</i>, et tertia, scilicet <i>C</i>, sit tibi dubia, et nescias que illarum sit <i>A</i> vel <i>B</i>, et similiter lateat te, que illarum sit tibi dubia. [[RSS], fols. 12vb–13ra]</p>	<p>[<b>Casus 4</b>] Item ponitur quod sint tres propositiones, scilicet <i>A</i>, <i>B</i>, <i>C</i>, et quod scias quod <i>A</i> est verum et scias quod <i>B</i> est verum et nescias quod <i>C</i> sit verum, et ille propositiones transmutantur, ita quod nescias quod illorum sit <i>A</i>, nec quod illorum sit <i>B</i>, nec quod illorum sit <i>C</i>. [see below]</p>
<p>[<b>Arg. 5</b>] Item suppono quod tu scias quid demonstratur per subiectum huius propositionis: “<i>hoc est homo</i>” et scias quod illa propositio significat precise sicut termini illius pretendunt, et quod scias aliquid esse hominem et nihil dubites esse hominem. [[RSS], fol. 12vb]</p>	<p>[<b>Casus 5</b>] Item ponitur quod aliquid scias esse hominem et nichil dubites esse hominem. [see below]</p>

While this analogy confirms Stump’s view, recycling scenarios appears to have been common scholastic practice in late medieval logic and the

situation gets more complicated on the other levels. All the opening arguments in [RSS] are proofs that a sentence is being known and doubted at the same time, i.e., attempts to prove that a sentence enables incompatible evaluations, as medieval sophisms typically do.<sup>1</sup> The same is only true of the second and fourth sophism in [CO]. The other opening arguments in [CO] are proofs that no evaluation is available in the respective scenario, whence they are structurally different from [RSS] and in some cases employ different arguments. Even possible doctrinal divergences (discussed below) aside, “excerpting” may not be an entirely just label for what the author of [CO] did.

The divergence between [RSS] and [CO] is even more salient on the level of solutions to the opening arguments. The solution to the first sophism in [CO] rejects the same inference as the parallel passage in [RSS], but [CO] introduces the distinction between the compounded and divided sense, whereas [RSS]’s reasoning is more informal. Also, [CO] drops the part where [RSS] deals with some details of the respective game of *obligationes*.<sup>2</sup> The solution to the second sophism in [CO] follows the opening one tenth of the corresponding passage in [RSS], and drops the rest, and the difference in the opening argument spreads in the

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<sup>1</sup> See [RSS], fols. 12va–13ra. For an overview of the genre of sophism and its role in the curriculum of the Faculty of Arts at Oxford, see James A. Weisheipl, “Curriculum of the faculty of arts at Oxford in the early fourteenth century,” *Mediaeval Studies* 26 (1964): 154–159, “Developments in the Arts Curriculum at Oxford in the Early Fourteenth Century,” *Mediaeval Studies* 28 (1966): 159–161 and 163–165, and “The Structure of the Arts Faculty in the Medieval University,” *British Journal of Educational Studies* 19 (1971): 267–268 and Edward Grant, *God and Reason in the Middle Ages* (Cambridge: Cambridge University Press, 2004), 121–140. For the role of Heytesbury in Oxford and Cambridge logic, see Lambert Marie de Rijk, “*Logica Cantabrigiensis*. A Fifteenth Century Cambridge Manual of Logic,” *Revue Internationale de Philosophie* 29 (1975): 303, 307 and 311 and “*Logica oxoniensis*. An attempt to Reconstruct a Fifteenth Century Oxford Manual of Logic,” *Medioevo* 3 (1977): 132–133, 138, 141, and 145 and E. J. Ashworth and Paul Vincent Spade, “Logic in Late Medieval Oxford,” in *The History of the University of Oxford. Volume II, Late Medieval Oxford*, eds. J. I. Catto and Ralph Evans (Oxford: Clarendon Press, 1992), 39–42. The role of Heytesbury and British logic in the curricula of Italian schools was analysed by Paul F. Grendler, *The Universities of the Italian Renaissance* (Baltimore: John Hopkins Press, 2004), 257–259.

<sup>2</sup> See below and [RSS], fol. 16ra–rb.



solutions as well (see below, 1.2.3).<sup>1</sup> Similarly, despite mutual similarities, [RSS] uses the solution to the third sophism as an opportunity to outline sentential semantics, which is deemphasised and possibly revised in [CO] (see below, 1.2.4).<sup>2</sup> The solution to the fourth sophism in [CO] corresponds with [RSS], but omits a large segment on the introspectibility of doubt. As iterated epistemic modalities are discussed in the central passage of [RSS]’s second chapter, i.e., outside of the passages reproduced or restated in [CO], such omission is a coherent move.<sup>3</sup> In the solution to the fifth sophism, [CO] gives the same answer as [RSS] but does not reproduce the underlying reasoning.<sup>4</sup>

To summarise, there are strong parallels between the two texts. While it is quite certain that [RSS] was a major source for [CO], [CO] is not a mere abbreviation that drops some details and only reproduces the core of the arguments. The author of [CO] had to reorganise the material to fit his own framework and there are some significant divergences. These features of [CO] are coherent with the role of a proactive compiler, participating in a *sophismata*-course based on [RSS].

### 1.2 *The content of Casus obligationis*

Four topics touched on in [CO] are of a more general relevance, namely the use of *obligationes*, the distinction between *sensus compositus* and *sensus divisus*, logical omniscience, and sentential semantics. As [CO] is

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<sup>1</sup> See below [RSS], fols. 14vb–15ra.

<sup>2</sup> See [RSS], fol. 15rb–va. Bradwardinian sentential semantics was proposed in his treatise on semantic paradoxes, see Thomas Bradwardine, *Insolubilia*, ed. and trans. Stephen Read (Leuven: Peeters, 2010). Mikko Yrjönsuuri has suggested that Heytesbury’s solution to paradoxes was influenced by Bradwardine’s sentential semantics in general (see “Treatments of the Paradoxes of Self-Reference,” in *Handbook of the History of Logic*, vol. 2: *Medieval and Renaissance Logic*, eds. Dov M. Gabbay and John Woods (Amsterdam: Elsevier, 2008), 597–600), and the treatise on knowing and doubting corroborates that view.

<sup>3</sup> See [RSS], fol. 16ra. For Heytesbury’s treatment of “positive introspection”, see Ivan Boh, *Epistemic Logic in the Later Middle Ages*, 68–76. For the broader context, i.e., the treatment of iterated modalities in scholastic logic, see Ivan Boh, “Epistemic and alethic iteration in later medieval logic,” *Philosophia Naturalis* 21 (1984): 492–506.

<sup>4</sup> [RSS], fols. 15va–16ra.

a brief treatise and does not explicate all of its presuppositions, it only allows of short notes on these topics.<sup>1</sup>

### 1.2.1 *Obligationes*

*Obligationes* are a scholastic disputation-format which constituted a separate genre between ca. 1200 and 1700.<sup>2</sup> Even though any generalisation is difficult, only the fourteenth-century “positio” developed by Walter Burley and William Heytesbury is relevant to [CO].<sup>3</sup> *Positio* can be reconstructed as a zero-sum, dynamic consistency game played by the “opponent” and the “respondent”.<sup>4</sup> It starts by the opponent positing a scenario, referred to as “casus” or “positum”; a scenario is an initial counterfactual assumption regarding a state of

<sup>1</sup> See 2.3 for textual evidence for the subsequent passage.

<sup>2</sup> For a systematic overview of the recent debate, see Paul Vincent Spade and Mikko Yrjönsuuri, “Medieval Theories of *Obligationes*,” in *The Stanford Encyclopedia of Philosophy* (Winter 2017 Edition), ed. Edward N. Zalta, URL = <https://plato.stanford.edu/archives/win2017/entries/obligationes/> and Catarina Dutilh Novaes and Sara L. Uckelman, “*Obligationes*,” in *Cambridge Companion to Medieval Logic*, ed. C. Dutilh Novaes et al. (Cambridge: Cambridge University Press, 2016), 370–395. For a critical overview of the recent interpretations of *obligationes*, see Catarina Dutilh Novaes, *Formalizing Medieval Logical Theories: Suppositio, Consequentiae and Obligationes* (Dordrecht: Springer, 2007), 145–154.

<sup>3</sup> To the best of present knowledge, Heytesbury does not seem to have written a systematic treatise on the problem which shaped so much of his extant writings and his position must be reconstructed from applications. See Read, “Obligations, Sophisms and Insolubles,” 19–23. See also Stump, *Dialectic and Its Place in the Development of Medieval Logic*, 231–241, analyzing the *De scire et dubitare* treatise of [RSS] as well as the final passage from *De sensu composito et diviso*, where the dynamic character of *obligationes* is addressed. Moreover, an important part of Heytesbury’s mathematical and physical applications of *obligationes* is the analysis of “imaginable” scenarios (*casus imaginabilis*), see Edith Dudley Sylla, “William Heytesbury on the sophism ‘Infinita sunt finita,’” in *Sprache und Erkenntnis im Mittelalter. Akten des VI. Internationalen Kongresses für mittelalterliche Philosophie der Société Internationale pour l’Etude de la Philosophie Médiévale, 29. August–3. September 1977 in Bonn, Bd. 2*, eds. Jan Peter Beckmann, Ludger Honnefelder, Gabriel Jüssen, Barbara Münxelhaus, Gangols Schrimpf, Georg Wieland and Wolfgang Kluxen (Berlin: Walter de Gruyter, 1981), 628–636.

<sup>4</sup> The view was proposed by Johan van Benthem, *Logic in Games* (Cambridge: The MIT Press, 2014), 4 and developed in Catarina Dutilh Novaes, “Medieval *Obligationes* as Logical Games of Consistency Maintenance,” *Synthese* 145 (2005): 371–395 (based on Van Benthem’s lectures).

reality, linguistic conventions and the epistemic state of certain agents. The scenario is either admitted or rejected by the respondent, based on its logical consistency and possibly other criteria. Afterwards, the opponent proposes statements to the respondent (“propono tibi...”), and these are either conceded, denied, or doubted by the respondent. The respondent should primarily determine whether these are “relevant” or “irrelevant” (*pertinens*, *impertinens*). The analysis of relevancy gave rise to two different approaches called “old reply” and “new reply”, of which the former attributed to Walter Burley is relevant here. According to the old reply, a statement is relevant in a certain phase of the game if it logically follows from the previous moves or is logically incompatible with them (*pertinens sequens* and *pertinens repugnans*, respectively), where the previous moves include the initial scenario, all hitherto conceded statements, and the negations of all hitherto denied statements; otherwise it is irrelevant. As a result, relevance is contingent on the phase and course of the game. Relevant sentences should be conceded if they follow from earlier moves and denied if they are logically incompatible with them, whereas irrelevant sentences should be conceded, denied, or doubted based on whether they are (known to be) true, (known to be) false, or doubted, respectively. Third, the game typically ends by the opponent’s saying “cedat tempus”, followed by an evaluation of the moves.

A specific form of *obligationes* are games with epistemic statements. Historically, such games were sometimes called “sit verum” and were still discussed in the generation of Ockham and Burley.<sup>1</sup> While the connections of [CO] to *sit verum* was pointed out by Johnston,<sup>2</sup> both Heytesbury and the author of [CO] belong to the generation of logicians

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<sup>1</sup> See Romuald Green, *An Introduction to the Logical Treatise De obligationibus, with Critical Texts of William of Sherwood [?] and Walter Burley*, vol. 2 (doctoral dissertation, Katholieke Universiteit Leuven, 1963), 94–96 and William Ockham, *Summa logicae (Opera philosophica 1)*, eds. Gedeon Gál et al. (St. Bonaventure, N.Y.: The Franciscan Institute, 1974), 743–744. Ockham’s position is analysed in Paul Vincent Spade, “The Logic of ‘Sit Verum’ in Richard Brinkley and William of Ockham,” *Franciscan Studies* 54 (1994–1997): 227–250 and *sit verum* were analysed by Sara L. Uckelman, “*Sit verum obligationes* and counterfactual reasoning,” *Vivarium* 53 (2015): 90–113.

<sup>2</sup> See Johnston, “‘This Is Socrates’,” 5.

who reduced *sit verum* to *positio* by using phrases such as “pono tibi quod tu scias te currere”, rather than “sit verum te scire te currere”.<sup>1</sup>

Little can be said about the version of *obligationes* introduced in [CO]. On the most general level, each sophism in [CO] starts with “positing” something or even “positing the scenario”, in most cases followed by “proposing” a sentence. The subsequent part of the sophism unfolds either as a proof that the same thing is known and doubted (sophisms two and four), or as a proof that the respondent can neither concede, nor deny, nor doubt the statement proposed to him (sophisms one, three, and five). The solutions start by admitting the *positum* in four cases and rejecting it in the fifth case, followed by an evaluation of the moves, where even the sophisms which do not start like *obligationes* end like ones. Three passages in [CO] relate to *obligationes* more closely. First, the solution to the fourth sophism consists in rejecting the initial scenario based on its inconsistency. Second, the opening argument of the fifth sophism employs the rule that the respondent should reply to irrelevant sentences as if no scenario were posited to him. Third, the solution to the second sophism distinguishes between an inference being known to be valid and being conceded as implied by the scenario. All three moves make very little sense outside *obligationes*.

### 1.2.2 *Sensus compositus et divisus*

The solutions to the first two sophisms endorse the distinction between two readings of modal statements, namely the compounded and the divided sense, which can be traced back to Aristotle’s *Sophistical Refutations*.<sup>2</sup> This distinction plays a major role in Heytesbury’s

<sup>1</sup> See Paul Vincent Spade, “The Logic of ‘Sit Verum’ in Richard Brinkley and William of Ockham,” 228 and “Roger Swyneshed’s *Obligationes*: Edition and Comments,” *Archives d’histoire doctrinale et littéraire du moyen âge* 44 (1977): 243–285, and Paul of Venice, *Logica Magna: Secunda Pars. Tractatus de obligationibus*, ed. and transl. E. J. Ashworth (Oxford: Oxford University Press, 1988), 38–39.

<sup>2</sup> Moreover, the final passage of the treatise addresses the equivalence of *sensus compositus* and *sensus divisus*. The note fits into the fifth sophism but the present edition views it as a separate concluding note, since the corresponding passage in [RSS] (which even employs the same examples) occurs in a different context, namely the solution to the first sophism in [RSS]: “Nec obstat quod hic arguitur a sensu composito

epistemic logic as discussed in [RSS] and in a separate treatise entitled *De sensu composito et diviso*.<sup>1</sup> The more comprehensive *De sensu composito et diviso* introduces several forms of this ambiguity, where the one it lists as eighth is caused by the use of verbs signifying acts of intellect or will. While Heytesbury seems to have invested a significant amount of energy in this theory, his formulations are mostly intuitive. He typically introduces two forms of a modal statement, pairs each of them with a paraphrase and emphasises their logical independence, which invalidates sophistical arguments. As an example of the divided sense, Heytesbury claims that the sentence “*A* propositionem scis esse verum” asserts that *A* is a sentence which you know to be true. As opposed to that, “*tu* scis *A* propositionem esse falsam”, which asserts that you know that *A* is false, is an example of the compounded sense. Thus, Heytesbury distinguishes between the two readings (*sensus*) and clarifies what each of the sentences asserts (*denotare* or *denotari*).<sup>2</sup> In other words, the

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ad sensum divisum, quia cum iste terminus: ‘hoc’ fuerit subiectum simplex absque alio determinabili respectu huius verbi: ‘scio’, convertitur sensus compositus cum sensu diviso et econtra [*the incunabular edition*: econtrario]. Et cum quocumque verbo fiant tales propositiones, erunt pertinentes, quia ex sensu diviso sequitur sensus compositus, sed non cum quocumque verbo convertitur sensus compositus cum sensu diviso, sed solum respectu huius verbi: ‘scio’ (...) et similiter sequitur: ‘hoc dubito esse album, igitur dubito an hoc sit album’, ‘hoc apparet nigrum, igitur apparet quod hoc sit nigrum’, sed econtra non sequitur...” [RSS], fol. 14va.

<sup>1</sup> The text was comprehensively studied by Alfonso Maierù, “Il ‘Tractatus de sensu composito et diviso’ di Guglielmo Heytesbury,” *Rivista di Storia Della Filosofia* 21 (1966): 243–263. While some of its features, notably the absence of the up-to-date terminist semantics, might seem somewhat backward, it drew significant attention in fifteenth-century Italy, where some of the most significant authors commented upon it. These commentaries were published in 1500, see *Tractatus de sensu composito et diviso magistri Gulielmi Hentisberi cum expositione infrascriptorum...* (Venezia: Jacobus Pentius de Leuco, 1500).

<sup>2</sup> “In omnibus enim est sensus divisus impertinens sensui composito et econverso, et propterea est consequentia mala. Et tunc est sensus divisus in istis propositionibus quando illud verbum significans actum intellectus seu voluntatis mediat inter huiusmodi casum et ipsum verbum infinitivi modi, ut dicendo: ‘alterum istorum scis esse verum’, ‘*A* propositionem scis esse falsam’ et denotatur per istum sensum quod alterum istorum est tale quod tu scis ipsum esse verum et quod *A* sit una propositio quam credis esse falsam. Sed quando huiusmodi verbum precedit totaliter, tunc est sensus compositus, ut dicendo: ‘tu scis alterum istorum esse verum’, ‘tu scis [*the incunabular edition*: credis] *A* propositionem esse falsam’ et denotat iste sensus quod tu scis quod alterum istorum

technical terms used in this context pertain to sentential semantics, rather than to terminist semantics,<sup>1</sup> which suggests that they may not be further reducible. As Sinkler observed, this leaves the question of why one should accept such a theory an utter mystery, as such paraphrases are not firmly rooted in the syntax of Latin (not the classical Latin, certainly).<sup>2</sup>

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est verum et quod tu scis *A* propositionem esse falsam. Nunc satis apparet quod iste due propositiones non convertuntur...” *Tractatus de sensu composito et diviso* (Venezia: Bonetus Locatellus, 1494), 3va. The parallel passage in [RSS] goes as follows: “Item tamquam pro regula est observandum quod cum aliquis istorum terminorum vel similium precedit totaliter dictum alicuius propositionis seu sequitur finaliter, tunc talis illa propositio accipienda in sensu composito, sicut sic dicendo: ‘scio *A* esse verum’, tota illa propositio accipitur in sensu composito, et tunc convertitur cum hac propositione: ‘scio quod *A* est verum’, et ex hoc sequitur quod talis propositio: “*A* est verum” vel aliqua propositio significans quod *A* est verum est scita a me. Multi tamen sunt termini prius accepti qui non multum competenter sequuntur finaliter huiusmodi dictum propositionis, quia improprie diceretur: ‘*A* esse verum scio’ (...) sive igitur totaliter precedit talis terminus dictum huiusmodi sive sequatur finaliter, erit totalis propositio dicta accepta in sensu composito. (...) Quando autem aliquis dictorum terminorum mediat dictum huiusmodi, sicut dicendo: ‘*A* scio esse verum’ (...), tunc est totalis illa propositio accepta in sensu diviso et denotatur per illam propositionem totam sic dicendo: ‘*A* scio esse verum’ quam propositionem que est *A* seu illud quod est *A* scio esse verum. (...) Unde notandum est quod in omnibus istis premissis non convertuntur isti duo sensus, compositus scilicet et divisus, illa enim impertinentia sunt: ‘*A* scio esse verum’ et ‘scio quod *A* est verum’ quia neutrum illorum sequitur ex reliquo.” [RSS], fol. 13rb.

<sup>1</sup> See Catarina Dutilh Novaes, “The Role of ‘Denotatur’ in Ockham’s Theory of Supposition,” *Vivarium* 51 (2013): 352–370 for the early fourteenth-century uses of “denotare” and “denotari” predominately in British logic (including Heytesbury). Notably, virtually no traces of the terminist framework, such as “suppositio”, “appellatio”, or “ampliatio”, can be spotted in this context. On one occasion, Heytesbury uses the phrase “supponit respectu termini” ([RSS], fol. 14va), but it has a grammatical, rather than a semantical sense, and he uses the phrase “verificari pro” ([RSS], fol. 13va), but not as part of discussing the aforementioned ambiguity.

<sup>2</sup> See Georgette Sinkler, “William Heytesbury’s Word-Order Theory of Propositional Sense,” *Journal of the History of Philosophy* 27 (1989): 365–377. At one point in [RSS], Heytesbury invokes “communis modus loquendi” to indicate the common use of the two types of modal statements ([RSS], fol. 13ra), hence he might have viewed his paraphrases along the same lines, but he did not declare such a program explicitly. Perreiah has recently suggested that one role of scholastic logic was introducing students to Latin as the language of the learned community (see Alan R. Perreiah, *Renaissance Truths: Humanism, Scholasticism and the Search for the Perfect Language* (Farnham: Ashgate, 2014), 123–159). From that point of view, it might be convenient to view the principles introduced by Heytesbury as constitutive, and hence in no need of further justification, rather than declarative.

Heytesbury's entire contribution appears to be stating the fact that two grammatically similar sentential contexts are associated with different logical forms, and hence with different inferential roles, and the author of [CO] does not further elaborate on that point either.

### 1.2.3 Logical omniscience

As part of the solution to the second sophism, [CO] discusses the following two principles, which are related to the so-called problem of logical omniscience in modern logic:<sup>1</sup>

(O) If an inference is valid and you know that its antecedent is true, then you know that its consequent is true.

(K) If you know that an inference is valid and you know that its antecedent is true, then you know that its consequent is true.

In modern terms, these correspond with the deductive closure of knowledge and the distribution of knowledge over implication (or the "axiom K"). This distinction does not occur in the parallel passages of [RSS], which makes [CO] an interesting extension thereof. The author of [CO] rejects (O) and endorses (K), which appears to have been relatively common in scholastic logic.<sup>2</sup> Interestingly, the distinction between the two principles is interpreted in terms of the compounded and the divided sense in [CO]: the (O)-like inferences are invalid because they deduce

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<sup>1</sup> For an overview of modern epistemic logic, see Rasmus Rendsvig and John Symons, "Epistemic Logic," in *The Stanford Encyclopedia of Philosophy* (Summer 2021 Edition), ed. Edward N. Zalta, URL = <<https://plato.stanford.edu/archives/sum2021/entries/logic-epistemic/>>.

<sup>2</sup> The criticisms of (K) typically strengthen it by adding further clauses to adjust to semantic paradoxes etc. (see Ralph Strode, *Consequentia*, in *An edition and translation of the Tractatus de consequentiis by Ralph Strode, fourteenth century logician and friend of Geoffrey Chaucer*, ed. and transl. Wallace Knight Seaton (doctoral dissertation, University of California, Berkeley, 1973), 17–23 or Paul of Venice, *Logica magna: Part II, Fascicule 4: Capitula de conditionali et de rationali*, ed. and transl. G. E. Hughes (Oxford: Oxford University Press, 1990), 195–200), which appears to be an attempt to uphold the core of (K) while solving technicalities.

a modal statement in the compounded sense from a modal statement in the compounded sense and a non-modal statement (*arguitur a propositione de sensu composito cum una de inesse ad unam de sensu composito*). That makes them, to use Heytesbury's example, similar to "you know that everything future will be, and this is future; therefore, you know that this will be".<sup>1</sup>

#### 1.2.4 Deductive closure of sentential meaning

The solution to the third sophism asks whether sentential meaning is closed under inference. The passage has been recently analysed by Spencer Johnston and used by Stephen Read as evidence for the divergence between Bradwardine and Heytesbury.<sup>2</sup> A comparative analysis of [RSS], [PC], and [CO] can shed more light on this issue. The three versions of the sophism go as follows:

<i>Regule solvendi sophismata</i>	<i>Casus obligationis</i>
[Arg. 4] Et quod ista sit scita a te, arguitur sic, quia tu scis illam significare precise sicut tu scis esse. Quod probo, quia tu scis quod illa significat quod hoc est Socrates vel hoc est Plato. Et tu scis ita esse, scis enim quod hoc est Socrates vel quod hoc est Plato. Igitur tu scis istam propositionem. Consequentia patet. Minor etiam patet ex casu et maior arguitur, quia tu scis quod illa precise significat quod hoc est	[Casus 3] Si autem dubitatur ut est dubitanda, contra: tu scis ipsam significare sicut tu scis esse, ergo tu scis eam esse veram. Antecedens probatur sic: tu scis ipsam significare hoc esse Socratem vel Platonem et ita scis esse, ergo scis ipsam significare sicut tu scis esse. [see below]

<sup>1</sup> "...accipiendo premissas (...) unam in sensu composito et alteram simplicem de affirmatione et negatione simplici et de inesse concludendo ex eis sensum compositum non valet consequentia. (...) ut sic dicendo: 'tu scis quod omne futurum erit et hoc est futurum, igitur scis quod hoc erit (demonstrato Antichristo)'..." William Heytesbury, *De sensu composito et diviso* (Venezia: Bonetus Locatellus, 1494), fol. 4ra.

<sup>2</sup> See Johnston, "This is Socrates'," and Read, "Obligations, Sophisms and Insolubles".



<p>Socrates et scis quod sequitur:  “illa significat precise quod hoc  est Socrates, ergo illa significat  precise quod hoc est Socrates vel  quod hoc est Plato.” [[RSS], fol.  12vb]</p>	
<b><i>Probationes conclusionum</i></b>	
<p>Nam tu scis quod ista significat precise sicut tu scis esse, igitur etc.  Consequentia patet. Et antecedens probatur, quia tu scis quod ista  significat precise quod hoc est Socrates vel quod hoc est Plato et ita est  per casum, igitur tu scis quod ista significat precise sicut tu scis esse.  Consequentia patet. Et minor et maior arguuntur, quia tu scis quod hec  propositio: “hoc est Socrates” significat sicut est sequens ex ista. Sed  ex illa est sequens quod hoc est Socrates vel quod hoc est Plato, igitur  ista significat quod hoc est Socrates vel quod hoc est Plato.  Consequentia patet et maior et minor probantur a parte disiunctive ad  totam disiunctivam. [[PC], fol. 193rb]</p>	

The solutions to these arguments are as follows:

<b><i>Regule solvendi sophismata</i></b>	<b><i>Casus obligationis</i></b>
<p>[Ad. 4] Ad quartum argumentum  admitto totum usque ad hoc quod  dicitur quod scio quod hec  propositio: “hoc est Socrates”  significat precise quod hoc est  Socrates vel quod hoc est Plato.  Illam nego, nec illa primo et  principaliter sic precise significat.  Sed primo et principaliter illa  significat quod hoc est Socrates.  Et non sequitur: “illa primo et  principaliter significat quod hoc  est Socrates, igitur illa primo et</p>	<p>[Ad 3] Ad hoc respondetur  admittendo casum. Et quando  proponitur: “hoc est Socrates”,  dicitur dubitando. Et ad  argumentum, cum dicitur: “tu scis  ipsam significare sicut tu scis  esse, igitur etc.”, negatur  antecedens.   Et ad probationem, cum dicitur:  “tu scis ipsam significare hoc esse  Socratem vel Platonem et ita scis  esse, ergo etc.”, negatur maior. Et</p>

<p>principaliter significat quod hoc est Socrates vel quod hoc est Plato”, sed sequitur oppositum.          (...)                   ...illa consequentia non valet, scilicet: “iste due propositiones convertuntur, igitur qualitercumque una illarum significat primo et principaliter, eodem modo significat utraque illarum primo et principaliter”, quia illa: “homo currit” convertitur cum illa: “risibile currit”, et ista: “homo currit” significat primo et principaliter quod homo currit et alia primo et principaliter significat quod risibile currit, et ex consequenti quod homo currit. Et ideo non procedit argumentum prius adductum. [[RSS], fol. 15rb–va]</p>	<p>dicitur quod illa propositio: “hoc est Socrates” non significat hoc esse Socratem vel Platonem, quamvis consequatur ad eam, quia significatio eius primaria et adequata est ista: quod hoc est Socrates, et non totum hoc: hoc est Socrates vel Plato. [see below]</p>
<p><b><i>Probationes conclusionum</i></b></p>	
<p>Et ad probationem antecedentis conceditur quod hec propositio: “hoc est Socrates” significat sicut est sequens ex ista, non tamen primo et principaliter, sed omne sequens ex ista sicut ex consequenti. (...) Nec valet ista consequentia: “iste propositiones convertuntur, igitur qualitercumque significat una primo et principaliter, significat reliqua eodem modo”, ut patet in istis propositionibus: “homo currit” et “animal currit” et hec [<i>the incunabular edition</i>: hec] convertuntur, tamen hec propositio: “hoc currit” significat primo et principaliter quod homo currit et ex consequenti significat quod animal currit etc. [[PC], fol. 193rb]</p>	

The parallels are clear, but the discrepancies should not be overlooked either. In general, [PC] appears to follow [RSS] more closely than [CO]. Starting with terminology, [CO] uses “significatio primaria et adequata”, as opposed to “significare primo et principaliter” used in [RSS] and [PC].<sup>1</sup> Moreover, the parallel passages introduce implied meaning (*significare ex consequenti*), which is doctrinally close to Bradwardine’s sentential semantics.<sup>2</sup> What exactly the word “adequata” means in this context cannot be decided conclusively. The phrase typically plays two roles: it indicates that the meaning is total rather than partial (i.e., the meaning of the whole statement as opposed to the meaning of its components), or it indicates the overt meaning, as opposed to the implicit or implied meaning, in which case “principaliter” and “adequate” could be equivalent.<sup>3</sup>

The relevant passage in [RSS] starts by denying that “this is Socrates” signifies that this is Socrates or this is Plato *primarily and principally*. The subsequent objection states that the sentences “this is Socrates” and “this is Socrates or this is Plato” are mutually equivalent (*convertuntur*), and this objection is solved by drawing distinctions between different forms of equivalence and, which is pertinent to sentential semantics, “primary and principal” as opposed “implied” sentential meaning.<sup>4</sup> The aforementioned passage in [CO] may or may not be a reformulation of [RSS]. On one hand, the author of [CO] claims that the primary and adequate meaning of “this is Socrates” is that this is Socrates, rather than that this is Socrates or Plato, which is something [RSS] agrees with. On the other hand, the same passage overtly denies

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<sup>1</sup> The broader corpus of Heytesbury’s text is coherent with the terminology used in [RSS]: see William Heytesbury, *Sophismata*, fol. 106rb–106va and *Iuxta hunc textum Les traites “Juxta hunc textum” de Guillaume Heytesbury et Robert Alyngton. Edition critique précédée d’une introduction historique et paléographique* (Université de Genève, Projet Sophismata, 2003), arg. 21.

<sup>2</sup> See [RSS], fol. 15ra–rb.

<sup>3</sup> See Gabriel Nuchelmans, *Late-Scholastic and Humanist Theories of the Proposition* (Amsterdam: North-Holland, 1980), 45–46.

<sup>4</sup> The relation between diverse forms of sentential meaning and knowledge is more closely discussed in the solution to the third argument: [RSS], fol. 15ra–rb.

that “this is Socrates” signifies that this is Socrates or Plato and draws a sharp distinction between signification and implication.

This leaves us with two options (provided that the editorial reconstruction of the passage is more or less successful and the passage has not been distorted in any significant way). First, [CO] could be coherent with [RSS], while having a different emphasis: The underlying semantics would state that while some forms of signification are closed under entailment, primary and adequate signification is not. In that case, the wording in the passage would be rather unfortunate and perhaps suffering from some omissions. One could, for instance, argue that its proper reading is “...dicitur quod illa propositio ‘hoc est Socrates’ non significat *primarie et adequate* hoc esse Socratem vel Platonem, quamvis consequatur ad eam...” As there are some clear omissions in the text, this hypothesis is not entirely implausible. Second, [CO] could coin a different semantic theory than [RSS], as Stephen Read suggests, which would explain the terminological discrepancies and support the autonomy and inauthenticity of [CO].

As a final note, the Venetian manuscript of [CO] uniquely closes this passage by saying that “aliqui aliter respondent, sed quia non videtur quod bene respondeant, taceo et cetera”, indicating the author’s opposition to alternative approaches. While the same attitude applies to any passage in [CO], this is the only context in which it is expressed. This note would be more interesting if we knew who wrote it, which brings back the question of authenticity. If [CO] is a compilation based on [RSS], which includes some reorganisation, abbreviation, but also amplification, divergence, and inevitable scribal errors, its author could have distanced himself from [RSS] precisely by writing something along the lines of “aliqui aliter respondent”.

### 1.3 Conclusions

[CO] is a fourteenth-century collection of five epistemic sophisms with no central passage providing a general theoretical background. While [CO] is certainly Heytesburian as a result of being closely connected to [RSS], its authenticity is questionable. In general, due to the portion of

reorganisation, supplementation, or even replacement, [CO] is not a mere abbreviation of [RSS]. The number of extant copies is relatively small as compared to Heytesbury's authentic texts, and all copies appear to be tied to one region, namely Italy (see below), which is not coherent with the usual dissemination-patterns of Heytesbury's texts. Specifically, there are no Bohemical manuscripts of [CO] with Prague being the centre of further dissemination into Central Europe. This is, clearly, a preliminary result, but the hypothesis that the author of [CO] was a currently unknown proactive compiler, possibly tied to the Italian region, explains the known data.

[CO] raises interesting questions, some of which require a critical edition of [RSS]. Whether the hypothesis of the Italian origin is valid or not, the influence of the text in that region, specifically, in the circle of Paul of Venice, should be further explored.<sup>1</sup> As much of the late-medieval debate on sophisms consists in alternative evaluations of identical scenarios, such as “you know that the person in front of you is either Socrates or Plato, but you do not know which...,” tracing the passages in which [CO] diverges from [RSS] in later texts appears productive.

## 2 Edition

### 2.1 Manuscripts overview

So far, four manuscripts of *Casus obligationis* have been identified:<sup>2</sup>

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<sup>1</sup> A relation between the possible copyist of the Oxford manuscript of [CO] Almericus de Seravalo and Paul of Venice has already been suggested by G. E. Hughes, see Paul of Venice, *Logica magna: Part II, Fascicule 4: Capitula de conditionalis et de rationalis*, 334.

<sup>2</sup> James A. Weisheipl, “Repertorium Mertonense,” 214 lists **O** and **M**, Stump, *Dialectic and Its Place in the Development of Medieval Logic*, 239 lists **O**, **M** and **V** and E. J. Ashworth, “Obligationes Treatises: A Catalogue of Manuscripts, Editions and Studies,” *Bulletin de philosophie médiévale* 36 (1994): 128 and Olga Weijers, *Le travail intellectuel à la Faculté des arts de Paris: textes et maîtres (ca. 1200–1500). Répertoire des noms commençant par G*, 113 list all four manuscripts. The manuscripts were only inspected in digital form.

**O:** Oxford, Bodleian Library, Canon. Class. Lat. 278, fol. 70ra–rb [280×215–200 mm], 2 cols., 59 lines

**V:** Città del Vaticano, Biblioteca Apostolica Vaticana, Vat. lat. 3038, fols. 37v–39r [216×150 mm], ca. 30 long lines

**M:** Venezia, Biblioteca Nazionale Marciana, Z. Lat. 310 (=1577), fol. 96va–vb, 2 cols., 41 lines

**C:** København, Kongelige Bibliotek, Thott 581 4<sup>o</sup>, fol. 34ra–va [20×14 cm], 29 long lines

While Heytesbury's name occurs in three of the copies, [CO] was not included in incunabular editions. As it is a brief and in one case anonymous text, many other copies can still be concealed as “anonymous treatises on logic”,<sup>1</sup> and some important manuscripts may have been lost entirely.<sup>2</sup> It is quite safe to assume that the text was composed between 1330 and 1390; the *terminus a quo* is due to the chronology of [RSS] and the *terminus ante quem* is due to the chronology of the Oxford copy of [CO].

Oxford, Bodleian Library, Canon. Class. Lat. 278 (=O) is a composite manuscript of Italian origin consisting of five booklets.<sup>3</sup> The

<sup>1</sup> As an example, consider that in the codex Thott 581 4<sup>o</sup>, [CO] does not contain any form of Heytesbury's name, and the text is not even mentioned in the table of contents at the beginning of the codex. The same omission is repeated in the twentieth-century catalogue of the Royal København Library, see Ellen Jørgensen, *Catalogus Codicum Latinorum Medii Aevi Bibliothecae Regiae Hafniensis* (København: in aedibus Gyldendalians, 1926), 362.

<sup>2</sup> Buringh calculated the loss rates of British manuscripts in the fourteenth and fifteenth century to be -37% and -39% per century (respectively), with the surviving fourteenth- and fifteenth century Western manuscripts being estimated to be between six and seven percent of the total production, see Eltjo Buringh, *Medieval Manuscript Production in the Latin West: Explorations with a Global Database* (Leiden: Brill, 2010), 179–314. For some relevant examples of such losses, see C. H. Kneepkens, “The mysterious Buser again: William Buser of Heusden and the Obligationes tract Ob rogatum,” in *English Logic in Italy in the 14th and 15th Centuries. Acts of the 5th European Symposium on Medieval Logic and Semantics, Rome, 10–14 November 1980*, ed. Alfonso Maierù (Napoli: Bibliopolis, 1982), 149.

<sup>3</sup> For a general description of the codex, see Henry O. Coxe, *Catalogi codicum manuscriptorum Bibliothecae Bodleianae pars tertia codices Graecos et Latinos Canonicianos complectens*, vol. III (Oxford: e typographo academico, 1854), col. 227–229, Pironet's study in William Heytesbury, *Sophismata asinina*, 623–624 and Rodney

first two booklets contain Buridan's *Questions on De anima* copied by Laurencius de Anglia in 1394 in Padua and Messinus de Coderonco's *Questions on Peri Hermeneias* dated 1387. The third booklet contains four texts pertaining to *obligationes*, namely treatises on *obligationes* by Peter of Candia and William Buser,<sup>1</sup> [CO], and a fragment of Roger Swyneshed's *Obligationes*.<sup>2</sup> Almericus de Seravalo, a student of arts in Padua, is recorded as having copied Buser's treatise in 1391, which suggests that **O** was produced in the late 1380s or early 1390s.<sup>3</sup> The other booklets contain a fragment of Heytesbury's *Sophismata asinina* and two treatises on physics, one by Messinus de Coderonco dated to the late fourteenth century<sup>4</sup> and one by Cajetan of Thiene dated to the fifteenth.<sup>5</sup>

Città del Vaticano, Biblioteca Apostolica Vaticana, Vat. lat. 3038 (=V) is a collection of fourteenth-century logical texts including Heytesbury's *De sensu composito et diviso*, Peter of Candia's *Obligationes*, Billingham's *Conclusiones* and *Speculum puerorum*,<sup>6</sup> [CO], and

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Thomson, *Catalogue of Medieval Manuscripts of Latin Commentaries on Aristotle in British Libraries*, vol. I (Oxford) (Turnhout: Brepols, 2011), 57–59.

<sup>1</sup> C. H. Kneepkens, "The mysterious Buser again," 147–166.

<sup>2</sup> The treatise is dated tentatively to "c. 1391" in James A. Weisheipl, "Roger Swyneshed, O.S.B., Logician, Natural Philosopher, and Theologian," in *Oxford Studies Presented to Daniel Callus* (Oxford: Clarendon Press, 1964), 243.

<sup>3</sup> See Ashworth's notes in *Logica magna: Part II, Fascicule 8: Tractatus de obligationibus*, ed. and transl. E. J. Ashworth (Oxford: Oxford University Press, 1988), 393–394, where [CO] is conjectured to have been copied by Almericus as well.

<sup>4</sup> The text was originally composed around the end of the fourteenth century (Brian Lawn, *The Rise and Decline of the Scholastic "Quaestio Disputata": With Special Emphasis on Its Use in the Teaching of Medicine and Science* (Leiden: Brill, 1996), 60–61, Jean Celeyrette, "Le mouvement selon la cause chez Messino da Codronchi et Angelo di Fossambruno," in *Mathématiques et théorie du mouvement XIVe-XVIe siècles*, eds. Joël Biard and Sabine Rommevaux (Villeneuve d'Ascq: Presses Universitaires Septentrion, 2008), 15–29.)

<sup>5</sup> Cajetan's *Complementum quaestionis Messini de Coderonco De motu locali* is dated 1422–1430, the origin of the manuscripts being estimated to the second half of the fifteenth-century, see Silvestro da Valsanzibio, *Vita e dottrina di Gaetano di Thiene, filosofo dello studio di Padova (1387–1465)* (Padova: Studio Filosofico dei FF. MM. Cappuccini, 1949), 23 and 45–53.

<sup>6</sup> For this text, see Lambertus Marie de Rijk, "Richard Billingham's Works on Logic," *Vivarium* 14 (1976): 134–137.

several pages of anonymous notes. The codex has been dated to the mid fifteenth century based on watermarks dated 1426–42 by Maierù.<sup>1</sup>

Venezia, Biblioteca Nazionale Marciana, Z. Lat. 310 (=M) is a collection of logical treatises,<sup>2</sup> including Paul of Pergula's *Sophismata asinina*<sup>3</sup> and a commentary on Heytesbury's *Regule solvendi sophismata*, (partial) copies of Heytesbury's *Regule solvendi sophismata*, *Sophismata asinina*, and *Sophismata*, [CO], and several incomplete logical treatises.<sup>4</sup> The current consensus is that it is a fifteenth-century codex, and given the presence of Paul of Pergula's work, mid-fifteenth century or later seems to be a safe estimate for at least certain parts of the codex.<sup>5</sup>

København, Kongelige Bibliotek, Thott 581 4<sup>o</sup> (=C) was copied by a Dominican friar called Nicolaus de Ripis in 1473 and it is a collection of

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<sup>1</sup> See Alfonso Maierù, "Speculum puerorum sive Terminus est in quem di Riccadro Billingham," *Studi medievali* 10 (1969): 311–312. This view is shared by Weisheipl, "Repertorium Mertonense", 176 and 214) and L.M. De Rijk (ed.), *Some 14th Century Tracts on the Probationes terminorum* (Martin of Alnwick O.F.M., Richard Billingham, Edward Upton and others) (Nijmegen: Ingenium Publishers, 1982), \*44\*. Maierù's dating replaced an earlier assumption that this was a fourteenth-century codex (see Lynn Thorndike, "Some Medieval and Renaissance Manuscripts on Physics," *Proceedings of the American Philosophical Society* 104 (1960): 194–195).

<sup>2</sup> For detailed descriptions, see Giuseppe Valentinelli, *Bibliotheca manuscripta ad S. Marci Venetiarum*, vol. 4 (Venezia: typographia Commercii, 1871), 147–149, Spade, "The Manuscripts of William Heytesbury's 'Regulae Solvendi Sophismata'," 302–303 and Fabienne Pironet (ed.), *Sophismata asinina*, 622–623.

<sup>3</sup> The text was edited in Fabienne Pironet, "Paul de Pergole, *Sophismata Asinina*, Édition et commentaires," *Documenti e studi sulla tradizione filosofica medievale* 9 (1998): 441–464.

<sup>4</sup> One of these was identified as a fragment of Paul of Venice's *Logica parva* (Alan R. Perreiah, *Paul of Venice: a Bibliographical Guide* (Bowling Green, OH: Philosophy Documentation Center, Bowling Green State University, 1986), 70).

<sup>5</sup> Originally, it was assumed to be a fourteenth-century codex (Anton Maria Zanetti, *Latina et italica D. Marci Bibliotheca codicum manu scriptorum per titulos digesta* (Venezia: apud Simonem Occhi Bibliopolam, 1741), 135), but it was later reinterpreted as a fifteenth-century one (Giuseppe Valentinelli, *Bibliotheca manuscripta ad S. Marci Venetiarum*, vol. 4, 147), which appears to be the currently held view (see Weisheipl, "Repertorium Mertonense," 214), with the exception of Spade, who claims it to be of fourteenth- or fifteenth-century origin (Spade, "The Manuscripts of William Heytesbury's 'Regulae Solvendi Sophismata'," 302–303. As most of Paul of Pergula's extant manuscripts are dated 1440s or later, the same could be true of certain parts of this codex (see Paul of Pergula, *Logica; and, Tractatus de sensu composito et diviso*, ed. Mary Anthony Brown (Saint Bonaventure, NY: Franciscan Institute, 1961), x–xiii).



British and Italian logical treatises, including [CO] and treatises authored by Ralph Strode (*Consequentie*), William Heytesbury (*De sensu composito et diviso*), Paul of Venice, Cajetan of Thiene (commentary on Strode), Alexander of Sermonetta, and others. The handwriting has been characterised as “neat”, but there are numerous copying errors, whether due to the scribe or transmitted from his source(s).<sup>1</sup>

None of the currently known copies of [CO] is explicitly dated. There are solid reasons for holding **O** to be a 1390s manuscript (same as the respective booklet) and **C** to be dated 1473 (same as the respective codex). It seems tenable to view these as the earliest and the latest copy respectively, and to view **V** and **M** as mid-fifteenth century copies.

The four copies display a number of variant readings.<sup>2</sup> However, a significant portion of the variation is innocuous, such as the use of equivalent pronouns (e.g., “ille” vs “iste”) or connectives (e.g., “ergo” and “igitur”), minor grammatical divergences (e.g., present indicative vs present subjunctive), word order, and minor omissions or additions.<sup>3</sup> Some of this variation could have been caused by misreading abbreviations, to which a modern editor is not immune either.

Interestingly, while the first sophism’s opening phrase is “primo” for all manuscripts except **V** (which uses “item”), **O** and **C** use “item” for the remaining sophisms, whereas **M** and **V** use “secundo”, “tertio” etc., or a combination of “item” with “2<sup>us</sup> casus”, “3<sup>us</sup> casus” etc. *in margine*.

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<sup>1</sup> For a detailed description, see Sten Ebbesen and Jan Pinborg, “Thott 581 4o, or De ente rationis, De definitione accidentis, De probatione terminorum,” in *English Logic in Italy in the 14th and 15th Centuries. Acts of the 5th European Symposium on Medieval Logic and Semantics, Rome, 10–14 November 1980*, ed. Alfonso Maierù (Napoli: Bibliopolis, 1982), 111 and 122–125, correcting Ellen Jørgensen, *Catalogus Codicum Latinorum Medii Aevi Bibliothecae Regiae Hafniensis*, 362–364.

<sup>2</sup> This appears to be common to the Heytesburian corpus, which is why Spade ultimately abandoned the project of editing the *insolubilia*-treatise from [RSS] (see Spade, “The Manuscripts of William Heytesbury’s ‘Regulae Solvendi Sophismata’,” 275), and Pironet prepared parallel editions of different textual traditions of *Sophismata asinina*.

<sup>3</sup> The word order is not entirely innocuous, as the sentences “hoc non dubitas esse hominem” and “non dubitas hoc esse hominem” have different truth-conditions, but such variation is rare in the present context.

Four divergences deserve closer attention. Two are relatively large, namely the formulation of the fifth sophism (**O** vs **VMC**) and the unique passages (**M** vs **OVC**), the other two are minor yet non-trivial, namely the use of “contradicentia” vs “contingentia” (**OV** vs **MC**) and the use of “*A*” vs “verum” (**V** vs **OMC**) in the second sophism.

First, the opening argument of the fifth sophism is preserved in at least three different versions and there is even some merit to viewing **V** as containing two versions of the text, namely the *ante correctionem* version **V<sub>1</sub>** and the *post correctionem* version **V<sub>2</sub>**; surprisingly, the corrections *in margine* (by a similar hand with an ink of a different shade) *increased* the divergence from **MC**, whence the source of the corrections could have been the unknown scribe’s inventiveness. As the parallel passages in [RSS] and [PC] do not contain this argument and [CO] does not reply to this argument, it is not clear what the preferred reading should be. The two main versions go as follows:

<b>O (fol. 70rb)</b>	<b>M (fol. 96vb)</b>
Si concedis, contra: est tibi dubium utrum demonstrem unum asinum, ergo est tibi dubium: “tu concedis impossibile”.	Si concedis, contra: ex tibi dubio demonstro unum asinum, ergo ex tibi dubio concedis impossibile.
Si negatur, contra: est tibi dubium: “demonstro te”, ergo est tibi dubium: “tu negas te esse hominem”.	Si negatur, contra: ex tibi dubio demonstro te, igitur tu negas te esse hominem.

There is an at least superficial similarity between them, in particular, between “est tibi dubium” and “ex tibi dubio”, hence they probably derive from a common source. Also, note the difference between “est tibi dubium ‘tu negas te esse hominem’” and “tu negas te esse hominem”, rather than “ex tibi dubio tu negas te esse hominem”; this omission (if it is an omission) is common to **VMC**.

The context of the argument is the scenario that the respondent knows that someone is a human being and the same respondent is not

uncertain about anyone's humanity. Then the statement "this is a human being" is proposed to the respondent. The goal of the sophistical argument in question is to prove that the respondent can neither concede, nor deny, nor doubt the proposed statement. At first glance, **O** appears more natural. However, while the phrase "ex tibi dubio" used in **M** seems unusual, it can be spotted in [RSS] in contexts such as "...ex tibi dubio in casu illo tu scis quod rex est Londonis..." or "ex tibi dubio sequitur hoc est Socrates vel hoc est Plato, igitur hoc est Socrates".<sup>1</sup> Same or similar phrases were also used in numerous *obligatio*-treatises from 1350s and 1360s, typically as part of the same sophism. Thus, it is possible to compare **M** with Buser's mid-1350s sophism:

Aliud exemplum sit tale: significet *A* alteram istarum: "Deus est" vel "homo est asinus" te sciente, et sic sit in rei veritate quod tantum significet quantum ista: "Deus est", sed hoc lateat te. Tunc propono tibi istam: "*A* est verum". Si concedis, arguo sic: *A* est verum, sed *A* est ista propositio: "homo est asinus" per tibi dubium, ergo ista propositio: "homo est asinus" est vera. Maior est concessa et vera et minor est tibi dubia, ergo, cum consequentia sit bona, sequitur quod conclusio non est a te neganda.<sup>2</sup>

The sophism is terminologically close to Marsilius of Inghen's *De arte obligatoria* from late 1350 (the two authors are commonly held to have been personally acquainted):

Aliud exemplum: impono ly *A* ad significandum alteram illarum: "homo est asinus" et "Deus est", sed lateat te quam illorum significat. Tunc proponatur illa: "*A* est verum". Si conceditur, tunc arguitur sic: *A* est verum et *A* est ista: "homo

<sup>1</sup> [RSS], fols. 13vb and 15rb. In both cases, the phrase is part of an argument which Heytesbury ultimately dismisses.

<sup>2</sup> Lorenzo Pozzi (ed.), *La Coerenza Logica nella Teoria Medioevale delle Obbligazioni con l'edizione del trattato "Obligaciones"* (Parma: Edizioni Zara, 1990), 166 [emphasis mine, the punctuation and format was altered].

est asinus” per tibi dubium, igitur “homo est asinus” est verum. Consequentia patet et antecedens pro prima parte concessum est et pro secunda parte dubium, igitur consequens non debet negari. Si negatur, arguitur sic: *A* non est verum per concessum et *A* est ista: “Deus est” per tibi dubium, igitur ista: “Deus est” non est vera. Consequentia patet et antecedens pro prima parte est a te concessum et quoad secundam partem est tibi dubium, igitur non debes negare consequens.<sup>1</sup>

The phrase “ex tibi dubio” is used in Ralph Strode’s 1360s *Obligationes*:

Aliud sophisma: posito casu communi quod *A* sit altera illarum: “Deus est” et “Homo est asinus”, et lateat te que illarum sit *A*. Admittitur et conceditur quod *A* est altera illarum. Contra: cedat tempus. Infra tempus admissisti impossibile ex tibi dubio, nam ex tibi dubio tunc omne *A* fuit tibi dubium, quod est impossibile.<sup>2</sup>

As these authors are all held to have been Paul of Venice’s sources, it is not very surprising to find the same terminology introduced in Paul of Venice’s *De scire et dubitare*:

Et pono quod scias *A* esse alteram illarum: “Deus est” et “homo est asinus”, et quod unum *A* est omne *A*, et lateat te quae illarum est *A*, sed bene scias quod illa est necessaria: “Deus est” et reliqua impossibilis: “homo est asinus”. Isto posito propono tibi *A*. Si concedis, contra: ex tibi dubio tu concedis impossibile non obligatus, igitur male respondes. Antecedens patet, quia ex tibi dubio *A* est illa: “homo est

<sup>1</sup> Marsilius of Inghen, *Obligatoria*, Città del Vaticano, Biblioteca Apostolica Vaticana, Pal. Lat. 995, fol. 47v [emphasis mine, minor corrections are not indicated].

<sup>2</sup> Ralph Strode, *Obligationes*, Città del Vaticano, Biblioteca Apostolica Vaticana, Vat. lat. 3065, fol. 137va [emphasis mine].

asinus”. Si negas *A*, contra: ex tibi dubio tu negas necessarium, igitur male respondes. Antecedens probatur, quia ex tibi dubio *A* est illa: “Deus est”.<sup>1</sup>

Note how closely this resembles **M**, to the point that Paul appears to be adapting [CO] to a different sophism (which, of course, is not thereby confirmed).

In all cases, “ex tibi dubio” means “on the basis of what is in doubt for you” or “assuming something which is uncertain to you”.<sup>2</sup> In this sense, **M**’s argument “Si concedis” states that the respondent concedes that this is a human being, while being uncertain about the thing being denoted by the pronoun “this”. If that pronoun were to denote a donkey, the respondent would, based on the circumstances uncertain to him, concede something that is impossible. And conceding something impossible is a losing move in a consistency game based on a possible scenario. As opposed to that, **O** works better if interpreted as making metalinguistic statements, i.e., if quotation marks are added the way they were added here. From this point of view, **M** is a relatively straightforward argument that conceding the proposed statement is not acceptable, whereas **O** appears to make a needless detour. **O** starts by observing that the respondent is uncertain about the reference of the pronoun “this”, whence he is uncertain whether he has conceded an impossible statement. That appears to complicate the game by an apparent meta-move, at which point it is not obvious whether the

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<sup>1</sup> Paul of Venice, *Logica Magna. Part I, Fascicule 7: Tractatus De scire et dubitare*, ed. and transl. Patricia Clarke (Oxford: Oxford University Press, 1981), 2 [emphasis mine, the punctuation and format was altered]. The same phrase was used by Peter of Mantua: “Item, ex tibi dubio illa duo non convertuntur, igitur illa non est a te concedenda: ‘nullus Deus est’. Patet consequentia. Et arguitur antecedens, quia ex tibi dubio tu admisisti impossibile, quia forte demonstrantur iste due mentales: ‘Deus est’, ‘nullus Deus est’, que invicem converti non possunt.” Quoted from Riccardo Strobino, *Concedere, Negare, Dubitare. Peter of Mantua’s Treatise on Obligations* (doctoral dissertation, Scuola Normale Superiore, Pisa, 2009), 195 [emphasis mine, the punctuation and format was altered].

<sup>2</sup> For modern translations, see William Heytesbury, “The Verbs ‘Know’ and ‘Doubt’,” 447 and 461 and Paul of Venice, *Logica Magna. Part I, Fascicule 7: Tractatus De scire et dubitare*, 14.

respondent has lost or what the next step should be. This appears to indicate that **M** (and, by extension, **V** and **C**) is a stronger reading than **O**.

Second, **M** contains several unique short passages. The end of the first sophism adds the clause “ergo et cetera” and the opening argument of the second sophism is closed with “quod est impossibile”. The end of the fourth sophism is closed with “et ideo non valet”, but that can be construed as an alternative reading to “et cetera”, rather than additional material. Finally, the third sophism is closed with a remarkable note: “Aliqui aliter respondent, sed quia non videtur quod bene respondeant, taceo et cetera.” That is the only sign of [CO] considering alternative approaches. The first-person remark looks like a statement made by the original author (whoever he was), rather than a copyist’s note. It fits smoothly into the text and **M** certainly includes it in the main text. The history of this note is, however, far from clear. While none of the four manuscripts contains any marginal glosses other than corrections, it is possible that a now lost part of the textual tradition included a relatively early copy with glosses, some of which could have been inserted into the main text in **M** or its source. However, it is equally possible that **M** reports a portion of the original manuscript omitted in the other witnesses. Neither hypothesis can be proved without discovering new manuscripts of [CO], but that should not diminish the importance of the unique passages.

Third, the initial scenario of the second sophism posits the existence of two contradictory sentences, qualified as “contradictoria contradicentia” in **MC** and as “contradictoria contingentia” in **OV**. Both happen to be true, but the phrasing is somewhat problematic. The first appears pleonastic but could, in fact, be incomplete, as phrases such as “contradictoria inter se contradicentia”, “contradictoria sibi invicem contradicentia”, and “contradictoria sibi mutuo contradicentia” are relatively common in this context. The second is non-trivial but redundant since the modal status of the contradictory pair plays no role in the sophism.

Fourth, the scenario of the second sophisms contains “Et consequens est ‘hoc est verum’” in **V** but “...‘hoc est *A*’” in **OMC**. The first reading

appears correct in that context, but things could be more complicated, a possible correct version being "...‘hoc est verum’ demonstrando A". If this conjecture is correct, both versions are flawed in their own ways.

As a final note, there is one interesting convergence, which is indicative of a common source for all four manuscripts. The opening part of the solution to the second sophism probably contains a large omission, based on a comparison to [RSS] and the fact that the text works better with an emendation (see below). Similarly, in the solutions to the second sophisms all four manuscripts have "ergo" in a place where "et tu" makes more sense.

These remarks can now be summarised as follows. First, there seems to have been a single source for all four manuscripts.<sup>1</sup> Second, the textual tradition splits into two families, namely **O** and **VMC**. As far as reliability is concerned, **O** displays solid reliability and **M** appears to be the most reliable witness of the **VMC** family.

## 2.2 Principles of edition

The methodology of the edition was tailor-made to capture the aforementioned features of the corpus. The basic dilemma in reconstructing the text was the choice between the most reliable witnesses, i.e., between **O** and **M**. While **M** is arguably the most interesting witness due to the unique passages, **O** is the oldest manuscript and was also referenced in earlier scholarship. For this reason, **O** was chosen as the basic text, with the exception of obvious mistakes. That said, the interesting features of **M** should encourage following it in the reading of [CO]. Second, as non-trivial extensive variations, the diverse openings of the fifth sophism will be given parallel presentation, which emphasises the difference between the two versions of **V**.

The spelling follows **O** and spelling differences are generally disregarded; the edition prefers "e" to "ae", in the use of "u" and "v" it prefers "viderim" to "uiderim" and "unam" to "vnam", and proper names

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<sup>1</sup> It goes without saying that this ultimate source is not simply identical to some version of [RSS]: all four manuscripts are too similar to be *independent* products of excerption, abbreviation, and reformulation.

such as “Socrates” and “Plato” are expanded (and the respective variation is disregarded), e.g., using “Socrates” rather than “Sor” or “Sortes”. Variation in the use of pronouns, such as “ille” vs “iste” vs “ipse”, is disregarded, unless it is part of another type of variation. Pronouns in general are expanded in what is perceived as the most charitable way.<sup>1</sup> Punctuation and paragraphing was introduced into the text to facilitate reading.

The original text contains no references and none were added.

### 2.3 *Casus obligationis*

#### SIGLA

- O** Oxford, Bodleian Library, Canon. Class. Lat. 278, fol. 70ra–rb
- V** Città del Vaticano, Biblioteca Apostolica Vaticana, Vat. lat. 3038, fols. 37v–39r
- M** Venezia, Biblioteca Nazionale Marciana, Zanetti Lat. 310 (=1577), fol. 96va–vb
- C** København, Kongelige Bibliotek, Thott 581 4<sup>o</sup>, fol. 34ra–va

#### INDEX ABBREVIATIONUM

[?] lectio incerta

*add.* addidit

*deest* deest

*a.c./p.c.* ante correctionem / post correctionem

<...> verba ab editore addita

{...} foliatio codicis

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<sup>1</sup> As an example, the corpus of manuscripts uses “h”, “h̄”, “h̄o”, “h̄o” and “h̄” in the same context. As supported by Adriano Cappelli’s *Dizionario di Abbreviature* (Milano: Ulrico Hoepli, 1929) and Olaf Pluta’s *Abbreviationes*<sup>TM</sup> (<https://abbreviationes.net/>), these may or may not be expanded in the same way, whence no particular attention is paid to this issue.



<Casus obligationis><sup>1</sup>

&lt;I&gt;

{**O: 70ra; V: 37v; M: 96va; C: 34ra**} Primo ponatur<sup>2</sup> talis casus quod heri viderim Socratem et nullum alium a Socrate viderim<sup>3</sup> et bene sciam illud<sup>4</sup> et quod Socrates nunc sit coram me<sup>5</sup> et nesciam ipsum esse Socratem.

Tunc proponitur ista:<sup>6</sup> “hoc est Socrates”.

Si conceditur, contra: omnis propositio de qua quis<sup>7</sup> considerat et nescit ipsam esse veram vel falsam<sup>8</sup> est ei dubia,<sup>9</sup> sed ista est huiusmodi, ergo est tibi dubia. Et per consequens non habes eam concedere.

Si negatur, contra: omnis propositio {**V: 38r**} de qua quis<sup>10</sup> considerat et nescit ipsam esse veram, nec scit ipsam esse falsam<sup>11</sup> est ei dubia, ista<sup>12</sup> est huiusmodi, ergo est tibi dubia. Et per consequens non habes<sup>13</sup> eam negare.

Si dubitatur, contra: tu scis quod ille quem heri vidisti<sup>14</sup> est Socrates, sed nullum heri vidisti<sup>15</sup> nisi istum,<sup>16</sup> ergo scis quod iste est Socrates.

<sup>1</sup> Casus obligationis] Isti sunt casus Hesberi **V** Incipiunt casus obligatorii Hesberi **M**

<sup>2</sup> Primo ponatur] Item ponatur[?] **V** Primo ponitur **MC**

<sup>3</sup> heri viderim Socratem et nullum alium a Socrate viderim] heri viderim Socratem et nullum a Socrate te viderim *a.c.*, heri viderim Socratem et nullum alium a Socrate viderim *p.c.* **V** heri Socratem et nullum alium a Socrate videris **C**

<sup>4</sup> illud] illum esse Socratem **V**

<sup>5</sup> Socrates nunc sit coram me] Socrates sit coram me **V**

<sup>6</sup> Tunc proponitur ista] Tunc proponatur ista **V** Tunc propono[?] ista **M** Tunc propono illa **C**

<sup>7</sup> quis] aliquis **V**

<sup>8</sup> veram vel falsam] veram nec falsam **MC** verum[?] *a.c.* veram nec sit ipsam esse falsam *p.c.* **V**

<sup>9</sup> est ei dubia] est ipsa dubitanda **V** est ei [?] *a.c.*, est ei dubia *p.c.* **C**

<sup>10</sup> quis] aliquis **V**

<sup>11</sup> nec scit ipsam esse falsam] nec falsam **C**

<sup>12</sup> ista] sed ipsa **V**

<sup>13</sup> habes] debes **C**

<sup>14</sup> heri vidisti] vidisti heri **V**

<sup>15</sup> sed nullum heri vidisti] et nullum vidisti **V**

<sup>16</sup> istum] Socratem *a.c.*, istum *p.c.* **M**

Ad hoc respondetur admittendo positum.<sup>1</sup> Et quando proponitur ista: “hoc est Socrates”, dubito. Et quando dicitur contra: “tu scis<sup>2</sup> quod ille quem heri vidisti<sup>3</sup> est Socrates, sed nullum heri vidisti nisi istum,<sup>4</sup> ergo scis quod iste est Socrates”, ad hoc dico negando argumentum, quia arguitur a propositione de sensu composito cum una de inesse<sup>5</sup> ad unam aliam de sensu composito, et ideo non valet argumentum.<sup>6</sup>

<II><sup>7</sup>

Item ponitur<sup>8</sup> quod sint duo contradictoria contingentia,<sup>9</sup> scilicet: “rex sedet”, “nullus rex sedet”,<sup>10</sup> et quod *A* sit illud quod est<sup>11</sup> verum et scias<sup>12</sup> quod illud quod est verum est *A* et quod nescias quid illorum sit *A*.<sup>13</sup>

Tunc propono tibi<sup>14</sup> istam consequentiam: “*A* est verum, ergo<sup>15</sup> hoc est verum” (demonstrando *A*).<sup>16</sup> Ista consequentia est bona et tu scis antecedens esse verum, ergo scis quod consequens est verum. Et consequens est “hoc est verum”,<sup>17</sup> ergo videtur quod idem scis et dubitas.<sup>18</sup>

<sup>1</sup> Ad hoc respondetur admittendo positum.] Ad hoc respondetur: admitto positum. C Ad hoc est respondendum admittendo positum/propositum[?] V

<sup>2</sup> quando dicitur contra: “tu scis] quando dicitur quod scis C

<sup>3</sup> heri vidisti] vidisti heri V

<sup>4</sup> nullum heri vidisti nisi istum] nullum vidisti nisi istum V nullum heri vidisti nisi Socratem C

<sup>5</sup> cum una de inesse] cum de inesse *a.c.*, cum una de inesse *p.c.* V

<sup>6</sup> et ideo non valet argumentum] ergo etc. *add.* M

<sup>7</sup> II] Secundus casus [*in margine*] V

<sup>8</sup> Item ponitur] Item ponatur alius casus V Item ponitur talis casus C Secundo ponitur talis *a.c.* Secundo ponitur talis casus *p.c.* M

<sup>9</sup> contingentia] contradicentia MC

<sup>10</sup> “rex sedet”, “nullus rex sedet”] “rex sedet” et “nullus rex sedet” VMC

<sup>11</sup> est] sit V

<sup>12</sup> scias] bene scias V

<sup>13</sup> quod nescias quid illorum sit *A*] quod istorum sit V quod nescias quod illorum sit *A*

M nescias quod illorum est *A* C

<sup>14</sup> propono tibi] propono V

<sup>15</sup> ergo] *deest* C

<sup>16</sup> demonstrando *A*] demonstrando M

<sup>17</sup> hoc est verum] hoc est *A* O hoc *A a.c.*, hoc est *A p.c.* M hoc *A* C

<sup>18</sup> videtur quod idem scis et dubitas] quod est impossibile *add.* M

Ad hoc respondetur admittendo <totum usque ad illam consequentiam quando arguitur: “si *A* est verum, hoc est verum”. Concedo><sup>1</sup> illam consequentiam. Et quando dicitur: “ista consequentia est bona <et tu scis antecedens esse verum,><sup>2</sup> ergo scis etc.”, nego argumentum ex eo quod<sup>3</sup> arguitur a propositione de sensu composito cum una<sup>4</sup> de inesse ad unam<sup>5</sup> de sensu composito. Et sic non debet argui,<sup>6</sup> sed sic: “tu scis istam consequentiam esse bonam et scis antecedens esse verum, ergo scis consequens esse verum.” Nego maiorem. Quare concedis?<sup>7</sup> Dicendum est {C: 34rb} quod sequitur ex casu.

<III><sup>8</sup>

Item ponitur<sup>9</sup> quod Socrates et Plato sint<sup>10</sup> coram te et bene scias<sup>11</sup> quod hic est Socrates et Plato et {M: 96vb} nescias<sup>12</sup> quod<sup>13</sup> illorum sit Socrates nec quod<sup>14</sup> illorum sit Plato.

<sup>1</sup> The emendation rests on the following reasons: First, it fits the corresponding passage in [RSS], fol. 14vb. Second, it is terminologically unusual to “admit” an inference (the way the non-emended text does): it is typically a scenario that is admitted. Second, the question “quare concedis” needs to relate to something in this particular sophism, but the phrase “concedo” or “conceditur” does not occur in the non-emended version of the text. Third, the solution is based on the distinction between conceding an inference and knowing that the inference is valid, which is why conceding “illam consequentiam” should occur in the opening argument.

<sup>2</sup> The emendation follows the actual formulation of the opening argument.

<sup>3</sup> nego argumentum ex eo quod] negatur argumentum ex quo quod C

<sup>4</sup> cum una] cum illa M

<sup>5</sup> ad unam] ad unam aliam V ad illam M

<sup>6</sup> sic non debet argui] non debet sic argui V sic non debebatur[?] arguere C

<sup>7</sup> Nego maiorem. Quare concedis?] [?] a.c. Negatur maior. Quare concedis? p.c. V Nego maiorem, quia concedis. C

<sup>8</sup> III] Tercius casus [*in margine*] V

<sup>9</sup> Item ponitur] Item ponatur VC Tercio ponitur tibi casus M

<sup>10</sup> sint] sit C

<sup>11</sup> scias] scis VM

<sup>12</sup> et nescias] nescias tamen V et et nescias M

<sup>13</sup> quod] quis V

<sup>14</sup> quod] quis V

Tunc propono tibi istam:<sup>1</sup> “hoc est Socrates” (demonstrando unum illorum).

Si conceditur, contra: omnis propositio de qua quis<sup>2</sup> considerat et<sup>3</sup> nescit ipsam esse veram, nec scit ipsam esse falsam est sibi dubia,<sup>4</sup> {**V: 38v**} ista<sup>5</sup> est huiusmodi,<sup>6</sup> ergo etc.

Similiter dico,<sup>7</sup> si negatur.

Si autem dubitatur<sup>8</sup> ut est dubitanda,<sup>9</sup> contra: tu scis ipsam significare sicut tu scis esse, ergo tu scis eam esse veram.<sup>10</sup> Antecedens probatur sic:<sup>11</sup> tu scis ipsam significare hoc esse Socratem vel Platonem et ita scis esse,<sup>12</sup> ergo scis ipsam<sup>13</sup> significare sicut tu scis esse.

Ad hoc respondetur admittendo casum. Et quando proponitur: “hoc est Socrates”, dicitur dubitando.<sup>14</sup> Et ad argumentum, cum dicitur:<sup>15</sup> “tu scis ipsam significare sicut tu scis esse, igitur etc.”, negatur antecedens.

Et ad probationem, cum dicitur:<sup>16</sup> “tu scis ipsam significare<sup>17</sup> hoc esse Socratem vel Platonem et ita scis esse, ergo etc.”, negatur maior. Et dicitur<sup>18</sup> quod illa<sup>19</sup> propositio: “hoc est Socrates” non significat hoc esse Socratem vel Platonem, quamvis consequatur ad eam, quia significatio

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<sup>1</sup> istam] ista **V**

<sup>2</sup> quis] aliquis **V**

<sup>3</sup> et] *deest* **V**

<sup>4</sup> nec scit ipsam esse falsam est sibi dubia] nec falsam **V**

<sup>5</sup> ista] sed ista **V**

<sup>6</sup> huiusmodi] huiusmodi [?] [*textus corruptus*] **V**

<sup>7</sup> dico] dicendum est **M**

<sup>8</sup> Si autem dubitatur] Si dubitatur **V**

<sup>9</sup> ut est dubitanda] *deest* **C**

<sup>10</sup> tu scis eam esse veram] tu scis ipsam esse veram **V** tu scis eam veram **C**

<sup>11</sup> Antecedens probatur sic] Antecedens probatur **C**

<sup>12</sup> ita scis esse] ita tu scis esse **V**

<sup>13</sup> scis ipsam] tu scis ipsam **C**

<sup>14</sup> dubitando] dubitare/dubitatur [?] **O**

<sup>15</sup> Et ad argumentum, cum dicitur] Ad argumentum conceditur **V**

<sup>16</sup> Et ad probationem, cum dicitur] Ad probationem, cum dicitur **C** Ad probationem conceditur **V**

<sup>17</sup> tu scis ipsam significare] tu scis significare **V**

<sup>18</sup> Et dicitur] Et cum dicitur **O**

<sup>19</sup> illa] hec **C**

eius primaria et adequata<sup>1</sup> est ista:<sup>2</sup> quod hoc est Socrates, et non totum hoc: hoc est Socrates vel Plato.<sup>3</sup>

<IV><sup>4</sup>

Item ponitur<sup>5</sup> quod sint tres propositiones, scilicet *A*, *B*, *C*,<sup>6</sup> et quod scias quod *A* est verum et scias<sup>7</sup> quod *B* est verum<sup>8</sup> et nescias quod *C* sit verum,<sup>9</sup> et ille propositiones transmutantur,<sup>10</sup> ita quod nescias quod illorum sit *A*, nec quod illorum sit *B*,<sup>11</sup> nec quod illorum sit *C*.

Et arguitur sic:<sup>12</sup> tu scis *A* et *B*, ergo tu scis duo istorum. Et utrumque istorum est tibi dubium. Ergo scitum a te est tibi dubium.<sup>13</sup>

Ad hoc respondetur dicendo<sup>14</sup> quod casus implicat contradictionem etc.<sup>15</sup>

<V><sup>16</sup>

Item ponitur<sup>17</sup> quod aliquid scias esse hominem<sup>18</sup> et nichil dubites esse hominem.<sup>1</sup>

<sup>1</sup> significatio eius primaria et adequata] significatio primaria adequata **V**

<sup>2</sup> est ista] ista **M**

<sup>3</sup> hoc est Socrates vel Plato] etc. *add.* **V** Aliqui aliter respondent, sed quia non videtur quod bene respondeant, taceo etc. *add.* **M**

<sup>4</sup> IV] Quartus casus [*in margine*] **V**

<sup>5</sup> Item ponitur] Item ponatur **V** Quarto ponitur **M**

<sup>6</sup> *A, B, C*] *A, B* et *C* **C**

<sup>7</sup> scias] nescias *a.c.*, scias *p.c.* **C** quod scias **M**

<sup>8</sup> est verum] sit verum **C**

<sup>9</sup> sit verum] est verum **M**

<sup>10</sup> et ille propositiones transmutantur] et iste propositiones transmutentur **V** et quod iste propositiones transmutentur **M** et quod ille propositiones transmutentur **C**

<sup>11</sup> nec quod illorum sit *B*] nec *B* **M**

<sup>12</sup> Et arguitur sic] Et tunc arguo sic **V** Tunc arguo sic **MC**

<sup>13</sup> scitum a te est tibi dubium] scitum a te tibi dubium **V** scitum a te est dubium **C**

<sup>14</sup> Ad hoc respondetur dicendo] Ad hoc respondeo **V** Ad hoc respondetur **C**

<sup>15</sup> etc.] et ideo non valet **M** ergo **C**

<sup>16</sup> V] Quintus casus [*in margine*] **V**

<sup>17</sup> Item ponitur] Item ponatur **V** Quinto ponitur **M**

<sup>18</sup> aliquid scias esse hominem] aliquis sciat esse hominem **V**

Hoc posito, propono tibi istam:<sup>2</sup> “hoc est homo”. {O: 70rb}

Si concedis, contra:

O	V	MC
est tibi dubium utrum demonstrarem unum asinum, ergo est tibi dubium: “tu concedis impossibile”.	[V <sub>1</sub> ] ex tibi dubio demonstrato[?] unum asinum, ergo est tibi dubio concedis impossibile. <i>a.c.</i>	ex tibi dubio demonstro unum asinum, {C: fol. 34va} ergo ex tibi dubio concedis impossibile.
	[V <sub>2</sub> ] ista <sup>3</sup> propositio est tibi dubia demonstrato[?] unum asinum, ergo est tibi dubia et tu concedis eam, ergo concedis impossibile. <i>p.c.</i>	

Si negatur, contra:

O	V	M	C
est tibi dubium: “demonstro te”, ergo est tibi dubium: “tu negas te esse hominem”.	[V <sub>1</sub> ] ex tibi dubio te, ergo tu negas esse hominem. <i>a.c.</i>	ex tibi dubio demonstro te, igitur tu negas te esse hominem.	ex tibi dubio demonstrato, ergo tu negas esse hominem.
	[V <sub>2</sub> ] ex tibi dubia a te, ergo tu negas esse hominem. <i>p.c.</i>		

<sup>1</sup> nichil dubites esse hominem] nihil dubitat esse hominem *a.c.* nihil aliud[?] dubitat esse hominem *p.c.* V

<sup>2</sup> propono tibi istam] propono ista *a.c.* propono istam *p.c.* V propono tibi C

<sup>3</sup> ista] est ista *a.c.*, ista *p.c.* V<sub>2</sub>

Vel sic:<sup>1</sup> hec est impertinens,<sup>2</sup> ergo habes respondere,<sup>3</sup> ac si nulla obligatio facta foret.<sup>4</sup>

<b>O</b>	<b>V</b>	<b>M</b>	<b>C</b>
Sed si nulla obligatio facta foret, tunc dubitares, ergo etc.	Ergo etc.	Tunc dubitares, ergo etc. <i>a.c.</i>	Sed nulla obligatio foret facta, tunc dubitares etc.
		Sed si nulla obligatio foret facta, tunc dubitares, ergo etc. <i>p.c.</i>	

Si autem dubitatur, contra:<sup>5</sup> nichil dubitas esse hominem, sed hoc est aliquid, ergo<sup>6</sup> {**V: 39r**} hoc non dubitas esse hominem.

Ad hoc respondetur admittendo positum.<sup>7</sup> Et quando proponitur ista: “hoc est homo”, dubito. Et quando dicitur: “nichil dubitas esse hominem,<sup>8</sup> sed hoc est aliquid, ergo hoc non dubitas esse hominem”, concedo totum,<sup>9</sup> sed tamen dubito istam:<sup>10</sup> “hoc est homo”,<sup>11</sup> quamvis hoc non dubitem esse hominem.<sup>12</sup>

<sup>1</sup> Vel sic] Vel similiter **V**

<sup>2</sup> hec est impertinens] est impertinens **V** hoc est impertinens **M** consequentia est impertinens **C**

<sup>3</sup> habes respondere] debes respondere **C**

<sup>4</sup> facta foret] foret facta **MC** facta fuisset tibi **V**

<sup>5</sup> Si autem dubitatur, contra] Si dubitatur **C**

<sup>6</sup> ergo] ergo ergo **V**

<sup>7</sup> admittendo positum] admitto positum **M**

<sup>8</sup> quando dicitur “nichil dubitas esse hominem] quando de nullo dubitas esse hominem **C**

<sup>9</sup> concedo totum] et concedo totum **C**

<sup>10</sup> dubito istam] dubito **C**

<sup>11</sup> hoc est homo] homo est homo **C**

<sup>12</sup> hoc non dubitem esse hominem] hoc non dubitas esse hominem **M** non dubites hoc esse hominem **C**

<Nota><sup>1</sup>

Et nota quod sensus divisus convertitur cum composito<sup>2</sup> quando subiectum est pronomen<sup>3</sup> demonstrativum precise exceptis istis verbis:<sup>4</sup> “apparet” et “dubito”<sup>5</sup> etc.

## &lt;Explicit&gt;

Et hoc sufficiat.<sup>6</sup> Expliciunt casus obligationis Hesberi. Deo gratias. Amen. Amen. Amen.<sup>7</sup>

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<sup>1</sup> <Nota>] Notandum [*in margine*] **C**

<sup>2</sup> cum composito] cum composito et **OM** cum sensu composito **V** cum composito et *a.c.* cum sensu composito *p.c.* **C**

<sup>3</sup> pronomen] proon *a.c.* **O**

<sup>4</sup> precise exceptis istis verbis] precise istis verbis exceptis **M**

<sup>5</sup> “apparet” et “dubito”] “appareo” et “dubito” **V** “apparet”, [?], “dubito” *a.c.* “apparet”, “dubito” *p.c.* **C** “apparet”, “dubito” et “credo” **M**

<sup>6</sup> Et hoc sufficiat.] *deest* **VMC**

<sup>7</sup> Expliciunt casus obligationis Hesberi. Deo gratias. Amen Amen Amen.] Expliciunt quinque casus Hesberi valde boni etc. **V** Expliciunt casus obligatorii Hesbi. **M** *deest* **C**