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# The Art of Doubting in *Obligationes Parisienses*

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## Abstract

Recent studies on *obligationes* tend to focus on the specific type of *positio*. This emphasis has led to a neglect of the less standard types, including *dubitatio*. While some claim that *dubitatio* is merely a trivial variant of *positio*, we show that the *dubitatio* rules given in the 13th-century treatise *Obligationes Parisienses* are by no means trivial and in fact lend themselves to a somewhat peculiar system of dialogue. *Dubitatio* in this treatise shares many aspects with *dubitatio* in two other 13th-century treatises, by William of Sherwood and Nicholas of Paris. We use these similarities to shed some light on the history of *dubitatio* in general and the interpretation of the *Parisienses* rules in particular.

## 1 Introduction

The *obligatio* or disputation *de obligationibus* is a curiosity of medieval logic which first shows up in the early thirteenth century [15]. Briefly, an *obligatio* is a formal disputation between two people, one called the Opponent and the other called the Respondent. The Opponent puts forward certain propositions, and the Respondent can either accept, reject, or question these propositions. The response of the Respondent to each proposition put forward by the Opponent is restricted by certain rules. That is, the Respondent in an *obligatio* is *obligated* to respond in a certain fashion, hence the name.

The rules by which the Respondent was restricted vary according to the type of *obligatio*. Medieval authors identified and discussed many different types of *obligatio*, with most authors mentioning *positio*, *impositio* or *depositio*, *dubitatio*, *institutio*, and *rei veritas*. Recent discussions of the medieval discipline of *obligationes* tend to focus on *positio* ‘positing’ (see, e.g., [14], [6]), and have very little, if any, reference to the other types. This is largely for two reasons. The first is that this follows the treatment of *obligationes* found in most medieval treatises; the medieval authors themselves spend the greatest time and space

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on *positio*, often treating the other types either in a cursory fashion or not at all. The second reason is expressed by Spade in [14] when he says some of the other types, specifically *depositio* and *dubitatio*, seem to be “trivial variation[s] on positing [*positio*]”. If *dubitatio* and *depositio* really are just trivial variants of *positio*, then one can discuss all three by just discussing the latter.

The present paper is an attempt to address the current tendency of historians of logic to disregard the non-*positio* forms of *obligatio*. The paper arises from the ILLC Latin Reading Group which met biweekly throughout the 2006–2007 academic year, translating de Rijk’s 1975 edition [5] of the treatise *Obligationes Parisienses*<sup>1</sup> found in Oxford MS Canon misc 281. This work is of particular interest because nearly half of it is devoted to *depositio* ‘counter-positing’ and *dubitatio* ‘doubting’. Our focus is the section on *dubitatio*, where close reading shows that this type of *obligatio* is by no means a ‘trivial variation’ on *positio*, and in fact the rules for *dubitatio* display a level of complication and sophistication not found in *positio*, making *dubitatio* in some sense “harder” than *positio*. In this paper we begin by briefly discussing the historical roots of *obligatio* with specific attention to *dubitatio* (§2). We then turn to the text at hand, and comment on the two main aspects of the section of *dubitatio*: The question of whether there is any art to doubting, or whether doubting is just an expression of ignorance (§3), and the presentation of the general and specific rules (§4). Some of the rules provide certain problems in both translation and interpretation, and we discuss this in more detail in §5 before turning to a formalization of the rules in §6. To provide a larger historical context, and to hopefully shed light on the problems described in §5, in §7 we compare the rules for *dubitatio* in the current treatise with those found in two roughly contemporary texts, one originally ascribed to William of Sherwood, but later thought to be by Walter Burley [7], and the other attributed to Nicholas of Paris [2].

All translations are taken from the working version prepared by the ILLC Latin Reading Group, available in [8].

## 2 Earlier traces of the tradition of *dubitatio*

As noted in the previous section, all known treatises on *obligationes* can be attributed to the 13th century or later. If we take the 13th-century tracts as the first stage of the whole tradition we are faced with two problems which make it difficult to trace the historical development of the tradition. The first difficulty is the problem of dating existing texts in order to establish possible lines of influence between authors. The second concerns the conceptual history of *dubitatio* specifically. We discuss each of these points in turn.

### 2.1 Dating and influence

De Rijk in the introduction to *Obligationes Parisienses* notes that the organization of the text, into *positio*, *depositio*, and *dubitatio*, is similar to the division found in the treatise ascribed to William of Sherwood by Green in [7]. Despite this similarity, de Rijk says that “a comparison of our treatise with William’s seems not to point to any relationship between them” [5, p. 25], and suggests

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<sup>1</sup>This is de Rijk’s title for the work.

that *Obligaciones Parisienses*, with its loose composition, might be written earlier than the “well-arranged tracts [sic] of Sherwood’s” [5, p. 26]. Hence, he uses the tract Green edited as a date *ante quem* for the *Parisienses* tract, and concludes that the latter text must date from the early 13th century.

When originally editing the text, Green was tentative in his attribution of it to Sherwood. These objections were dismissed by de Rijk, who believed that the tract belonged to Sherwood without a doubt. However, Stump says that “there are other serious worries about the attribution of this treatise to Sherwood. . . Careful consideration of these worries. . . make it seem altogether possible that what we really have in the putative Sherwood treatise is an early treatise on obligations by Walter Burley” [15, pp. 316–317]. Braakhuis in [2] disagrees with Stump, and says that the treatise can be dated to the first half of the 13th century. In this, Braakhuis is in agreement with Green, who now believes that the attribution to Sherwood should not be doubted.<sup>2</sup> We do not attempt to definitively answer these questions of dating and authorship here, but we follow Braakhuis and Green and refer to the author as Sherwood.

Another treatise which is roughly contemporary with the *Parisienses* tract is the *obligaciones* treatise which can be fairly surely ascribed to Nicholas of Paris. Braakhuis tentatively dates this text to c.1230–1250 [2, p. 157], which means that it is probably a close contemporary or even possibly earlier than our treatise. One argument against the latter conclusion (that the Nicholas of Paris text is earlier than the *Parisienses* text) is that in the latter, the author notes that *dubitatio* is not always conceded as a proper type of obligation game (see §3). Neither Nicholas of Paris or William of Sherwood give attention to the propriety of *dubitatio*. This could suggest that the adoption of *dubitatio* into the canon of *obligaciones*-types is a late occurrence, but we do not currently have sufficient data to argue this definitively.

As a result, the three tracts we are considering here (*Parisienses*, William of Sherwood, and Nicholas of Paris) can be tentatively dated with respect to each other, even if we cannot give them absolute dates. But even with this tentative relative dating, we cannot say for sure whether there were any channels of influence between the three authors.

## 2.2 Conceptual roots of *dubitatio*

The second problem concerns the *dubitatio* type of obligations and its history. Christoph Pütz [13], building on [4], discusses the medieval development of *positio* and its probable ancient traces.<sup>3</sup> If we try to do the same with *dubitatio* we encounter certain problems. It is widely believed that one of the theoretical bases for *obligaciones* can be found in Aristotle’s *Topics*, 158a.25. Presumably the author of the *Obligaciones Parisienses* questioning the properness of the *dubitatio* was influenced exactly by this rule:

For a dialectical premise must be of a form to which it is possible to reply ‘Yes’ or ‘No’, whereas to the aforesaid it is not possible. For this reason questions of this kind are not dialectical unless the questioner himself draws distinctions or divisions before expressing

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<sup>2</sup>We learned this through conversation with Braakhuis.

<sup>3</sup>This same topic is also covered in [9], but Keffer does not discuss *dubitatio*.

them, e.g. ‘Good means this, or this, does it not?’ For questions of this sort are easily answered by a Yes or a No.<sup>4</sup>

As Book 8 of the Topics permits only a binary possibility of response to a premise, there is no provision for a theoretical basis for the tripartite answering scheme (concede, deny, doubt). Since we cannot ground the conceptual history of *dubitatio* in Aristotle, we must look later, indeed to the 12th century.

While there is currently no direct 12th-century evidence of *obligatio*, dialogue games in general, or *dubitatio* in particular, there are some texts in the *logica vetus* that could perhaps serve as a conceptual foundation for *dubitatio*. The first is Abelard’s *Sic et non*, which is grounded in scripture:

So we can define the first key of the wisdom, i.e., careful and thorough questioning, and the most perspicacious Philosopher Aristotle in his book of Predicaments urges everybody keen on anything to press towards questioning with all desire, with the words: It might be probably quite difficult to declare such things for certain, if they are not regularly re-treated. And to doubt about singular things might not be unuseful. And we are getting to the questioning by means of doubting; and by means of questioning we find truth; and in accordance with this truth itself: seek, and ye shall find; knock, and it shall be opened unto you [1, pp. 103–104].<sup>5</sup>

Unfortunately, we have no clear references to this text in treatises on *dubitatio*.

There are two formal features found in all *dubitatio*es which shed some light on this type of disputation’s conceptual foundations: (1) the impossibility of giving an initial answer “yes” or “no” (i.e., the requirement that the *propositum*, the first proposition put forward by the Opponent, be doubted) and (2) a necessary procedure of verification (demanding the answer “prove!” (*proba!*)). These features *dubitatio* shares with another type of obligation—*positio indeterminata*:

Indeterminate *positio* is when one of two things is put down under disjunction, but it is not known which. For example. It may be put down that Socrates is white or Plato is white. This is duplex, because a disjunction is able to be included in ‘it may be put down’, and in this way a determinate *positio* is made of what was said disjunctively... For each of these ‘Socrates is white’ and ‘Plato is white’, the answer is ‘prove it!’, unless in fact Socrates is white or Plato is [5, p. 41].<sup>6</sup>

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<sup>4</sup>English trans. by W.A. Pickard-Cambridge. Boethii Interpretatio Topicorum Aristotelis [12, t.64]: *est enim dialectica propositio, ad quam est respondere, sic vel non; ad dictas autem non est; quare non sunt dialecticae huiusmodi interrogationes, nisi ipse determinans vel dividens dicat, ut, putasne bonum sic vel non sic dicitur? nam ad talia facilis responsio, vel affirmando, vel negando; quapropter tentandum sic proponere huiusmodi propositionum.*

<sup>5</sup>*Haec quippe prima sapientia clavis definitur assidua scilicet seu frequens interrogatio; ad quam quidem toto desiderio arripiendam philosophus ille omnium perspicacissimus Aristoteles in praedicamento Ad Aliquid studiosos adhortatur dicens: Fortasse autem difficile est de huiusmodi rebus confidenter declarare nisi saepe pertractata sins [sic]. Dubitare autem de singulis non erit inutile. Dubitando quippe ad inquisitionem uenimus; inquirendo ueritatem percipimus. Iuxta quod et Veritas ipsa: Quaerite, inquit, et inuenietis, pulsate et aperietur uobis.*

<sup>6</sup>*Positio (in)determinata est quando duorum alterum ponitur sub disjunctione, sed nescitur*

Since *positio indeterminata* is usually derived from the *equivocatio*, or equivocation (cf. [4]), it is not unreasonable to suppose that the specific type of obligation *dubitatio* originally derived from *equivocatio* as well (cf. [11, pp. 56, 109]). This proposal is supported by the apparent connections between fallacies and *sophismata* in the 12th century and the earlier tradition of *positio* and *depositio* types of obligations (cf. [13], [4]).

### 3 Is there an art to doubting?

A conspicuous feature of *Obligationes Parisienses* is that it contains a fairly extensive theoretical discussion of the nature of *dubitatio*. The other two types of *obligatio* which are dealt with in detail in our treatise, *positio* and *depositio*, are treated in about the same length, but their status as a legitimate type of obligation is taken for granted. Regarding *dubitatio* however, our author devotes a separate section to the question whether *dubitatur* ‘it must be doubted’ is an obligation or not.

He states that although *dubitatio* is generally regarded as being on equal footing with *positio* and *depositio*, there are two arguments against this.<sup>7</sup> The first argument is that if somebody is knowledgeable about some subject, this enables them to concede what is true and to deny what is false. Thus there is an art to conceding and denying. Doubting however lacks such a grounding in knowledge; it is rather a sign of ignorance. Thus unlike conceding and denying, doubting is not amenable to rules of art. The second argument is that there are two types of disputation: demonstrative and dialectical. In demonstrative disputation there is a teacher and a pupil, the first of whom is knowledgeable, the second ignorant. As art cannot be grounded in ignorance there is no art of responding in this type of disputation. But in dialectical disputation both participants, the Opponent and the Respondent, are knowledgeable. Hence there is both an art of opposing and an art of responding. This shows once more that there cannot be an art regulating the acts of one who is ignorant and in doubt.

Our author disagrees with the conclusion of these two arguments, and believes that there can be an art of doubting. To make this clear he introduces a distinction between absolute disputation and constrained or bound (*ligata*) disputation. The arguments against the possibility of an art of doubting are valid in so far as absolute disputation is concerned. By this, he means both the demonstrative and the dialectical type of disputation distinguished earlier, the former containing only an art of opposing, the latter containing both an art of opposing and responding. This is set out, he adds, by Aristotle in the eighth book of the *Topics*. But the case of bound disputation is different; as our author uses the term, “bound disputation” appears to be just another term for *obligationes*. In bound disputation, both disputants work under a hypothesis, and in such circumstances the third type of responding, that is, doubting, requires skill just as much as conceding and denying. This is because when the hypothesis is

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*quid. Verbi gratia. Ponatur Sortem esse album vel Platonem esse album. Hec est duplex, eoquod disiuncta potest includi a ‘ponatur’, et sic fit determinata positio dicti disiuncti. . . . Ad utramque illarum ‘Sortem esse album’, ‘Platonem esse album’ respondendum est ‘proba!’, nisi (in rei) veritate Sortes sit albus vel Plato.*

<sup>7</sup>Both arguments and the author’s rebuttal are found on pp. 43–44 of [5].

held to be doubtful, certain other things must be held doubtful as well. Hence it requires an art regulating how to correctly maintain the doubtfulness of a *propositum*.

Two points emerge from this. The first is that it is clear that by the time our tract was written, it was common practice to distinguish three types of obligation, each of which was regulated by its own set of rules. Secondly, the author went out of his way to show that the third type, the *dubitatio*, should be regarded as a genuine type of *obligatio*. In the course of this, he seemed to be indicating that the *obligationes* as they had developed at the time were distinct from the dialectical disputations discussed by Aristotle. It could also be speculated that our author was concerned to justify its existence precisely because he was aware that the *dubitatio* lacks clear roots in Aristotle.

## 4 General rules and specific rules

We now turn to the meat of the material, namely the specific rules for doubting that our author provides. Our author first gives two general rules governing the actions of the Respondent in a *dubitatio*:

**Rule 4.1** (P-G1). Everything antecedent to the *dubitatum* must be held true or doubtful, that is [not] false.<sup>8</sup>

**Rule 4.2** (P-G2). Everything following from the *dubitatum* must be held not false, that is true or doubtful.<sup>9</sup>

But he then says that “these rules, it must be understood, are concerning things which are not convertible with the *dubitatum*,” and adds the proviso that “everything convertible with the *dubitatum* must be doubted”.<sup>10</sup> He also adds that these general rules are in some cases too general, and they do not give determinately the response of the Respondent. In order that the Respondent’s actions be determined, the author gives eight further rules, which he calls ‘specific’:

**Rule 4.3** (P-S1). Certain things antecedent to the *dubitatum* are true, certain are false.<sup>11</sup>

**Rule 4.4** (P-S2). Of enuntiatives, some are antecedent to the *dubitatum* through themselves (*per se*), some are antecedent to the *dubitatum* with a conceded thing or conceded things or the opposite of a denied thing or opposites of denied things.<sup>12</sup>

**Rule 4.5** (P-S3). Everything convertible with the *dubitatum* and every opposite of the *dubitatum* must be doubted.<sup>13</sup>

<sup>8</sup> *Omne antecedens ad dubitatum habendum est pro vero vel dubio, idest pro (non) falso.*

<sup>9</sup> *Omne sequens ad dubitatum, habendum est pro non falso, idest pro vero vel dubio.*

<sup>10</sup> *Ille autem regule intelligende sunt de non convertibilibus cum dubitato. Omne enim convertibile cum dubitato est dubitandum sive sit verum sive sit falsum [5, p. 44].*

<sup>11</sup> *Antecedens ad dubitatum quoddam est verum, quoddam est falsum.*

<sup>12</sup> *Enuntiabilium quoddam est antecedens per se ad dubitatum, quoddam cum concessio vel concessis vel opposito negati vel oppositis negati [sic] vel negatorum ad dubitatum.*

<sup>13</sup> *Omne convertibile cum dubitato et omne oppositum dubitati est dubitandum.*

**Rule 4.6** (P-S4). Every false antecedent of the *dubitatum* the opposite of which is not a truth being doubted must be denied.<sup>14</sup>

**Rule 4.7** (P-S5). Of things following from the *dubitatum*, some are true, some are false. However every truth following from the *dubitatum* must be conceded, but every falsehood following from the *dubitatum* must be doubted.<sup>15</sup>

**Rule 4.8** (P-S6). Of things repugnant to the *dubitatum*, some are repugnant through themselves, some through an accident, such as through a consequence of the *dubitatum*.<sup>16</sup>

**Rule 4.9** (P-S7). Of things repugnant to the *dubitatum*, some are contradictory opposites or convertible with them, some are contraries.<sup>17</sup>

**Rule 4.10** (P-S8). Everything repugnant to the *dubitatum* through itself and contradictorily must be doubted, repugnant in truth through itself and contrary must be held to be not true, as false, if it is known to be false, and as doubtful, if it is doubted. Also everything repugnant *per accidens* and contradictorily similarly must be held to be not true, also similarly for things repugnant *per accidens* and contrarily.<sup>18</sup>

One aspect of these rules that deserves comment is that there is no mention of what should be done with impertinent propositions, that is, things which are neither repugnant nor follow from the statements already considered.

## 5 Interpretation of the rules

It will be useful to divide these ten rules into three groups:

1. the general rules (4.1 and 4.2);
2. the specific rules directly related to the general ones (rules 4.3, 4.4, 4.6, 4.7);
3. the specific rules concerning convertibles and opposites (rules 4.5, 4.8, 4.9, 4.10).

We comment on each of these groups in turn.

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<sup>14</sup>*Omne falsum antecedens ad dubitatum cuius oppositum non est verum dubitatum, est negandum.*

<sup>15</sup>*Sequentium ad dubitatum aliud est verum, aliud est falsum. Omne autem verum sequens ad dubitatum est concedendum, sed omne falsum sequens ad dubitatum est dubitandum.*

<sup>16</sup>*Repugnantium dubitato quoddam est repugnans per se, quoddam per accidens, ut per consequens dubitati.*

<sup>17</sup>*Repugnantium dubitato quoddam est oppositum contradictorie vel convertibile cum illo, quoddam contrarium.*

<sup>18</sup>*Omne repugnans dubitato per se et contradictorie est dubitandum, repugnans vero per se at contrarie habendum est pro non vero, ut pro falso, si sciatur esse falsum, et pro dubio, si dubitetur. Omne autem repugnans per accidens et contradictorie similiter habendum est pro non vero, repugnans autem per accidens et contrarie similiter.*



## 5.1 The general rules

The first (rule 4.1) is problematic in several respects: When taken literally, the rule is incomprehensible as it equates ‘true or doubtful’ with ‘false’. One could assume that the text contains a slip or omission here, and repair the problematic phrase ‘true or doubtful, that is false’ by inserting a *non*, changing it to ‘true or doubtful, that is not false’. An advantage of this is that ‘not false’ is indeed the same as ‘true or doubtful’ in this context; it also establishes a nice parallel with the second general rule (4.2), where this equation is formulated. We have in our translation provisionally corrected the text accordingly.

However, in this form the first general rule is still problematic, on internal grounds. For in its revised form, rule 4.1 states that everything *antecedent* to the *dubitatum* must be held not false, while rule 4.2 says the very same thing of everything *following* from the *dubitatum*. If this were correct, our author could just as well have formulated a single rule saying that everything antecedent and everything following from the *dubitatum* must be held not false. But as far as the first rule is concerned, this cannot be correct. This is because holding something antecedent to the *dubitatum* for true implies the truth of the *dubitatum*. Anyone following this rule, in other words, would be certain of immediate defeat, as one would be forced to maintain both the truth and the doubtfulness of the *dubitatum*. For this reason, it is very probable that the first rule should have read:

Everything antecedent to the *dubitatum* must be held not true, that is false or doubtful.<sup>19</sup>

This is easily justifiable: since the *dubitatum* must be doubted, anything from which it follows (for that is how we interpret ‘antecedent’—there is other evidence in the text which justifies this interpretation) should be held either doubtful or false, precisely to prevent that the Respondent gets himself involved in a contradiction, by implicitly admitting the truth of the *dubitatum*, that is, what by definition is to be doubted. Furthermore, if the rule is reformulated in this manner it is no longer inconsistent with rule 4.6, which prescribes that certain specific antecedents to the *dubitatum* should be denied, contradicting rule 4.1 as found in the text, which says that no antecedent should be denied. After reformulating rule 4.1 as we suggest, rule 4.6 does exactly what it is apparently designed to do, namely to specify which of the options left open by general rule 4.1 (deny or doubt) must be chosen in certain cases. Finally, our suggestion is made plausible by the fact that in the other contemporary texts we’re considering a similar rule can be found (we discuss this further in §7).

The conclusion that the text must be corrupt here seems justified. To determine where the corruption occurred, we checked the original manuscript and our reading agrees with de Rijk’s edition. We believe that the error must have entered either in the process of making the manuscript or earlier.

While there is no way to say definitively what the error was and how it occurred, we can make a conjecture about what has happened as follows: rule 4.1 (in the form we think it should have had) and rule 4.2 resemble each other closely, while containing two pairs of contrasting terms: 4.1 is about things antecedent to the *dubitatum*, 4.2 about things following from the *dubitatum*; 4.1

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<sup>19</sup>*Omne antecedens ad dubitatum habendum est pro non vero, idest pro falso vel dubio.*

says that the things it is about should be held not true, and 4.2 that the things it is about should be held not false. When writing this up, or transcribing this, it is easy to make a mistake; and the person who produced the manuscript did make two contrasts: the first is, correctly, the contrast between things antecedent and things following from the *dubitatum*, but the second is, mistakenly, that between

*pro vero vel dubio, id est pro [non] falso*

and

*pro non falso, id est pro vero vel dubio*

in which only a syntactic interchange has occurred. Intuitively, the contrast should instead be between

*pro non vero, id est pro falso vel dubio*

and

*pro non falso, id est pro vero vel dubio*

where we have *vero* and *falso* interchanged, as required for the reasons given above.

## 5.2 Specific rules connected to the general rules

There is an asymmetry between the way (a) things antecedent the *dubitatum* and (b) things following from the *dubitatum* are treated.

The similarities are as follows:

- both (a) and (b) are said to be either true or false (without it being completely clear whether the division is actually exhaustive)
- for both (a) and (b) more specific rules than 4.1 and 4.2 discussed above are given; for (a), rule 4.6, and for (b) rule 4.7.

The differences are:

- rule 4.7 specifies, in a neat fashion, what to do with truths (concede) and what to do with falsehoods (doubt), but rule 4.6 only says what to do with falsehoods (deny), and does not say what to do with truths; we would expect it to say that these must be doubted.
- rule 4.6, unlike 4.7, contains a proviso: false antecedents must be denied but only provided that they are not opposites of truths being doubted.

This leads to a puzzle: Why does one rule have the proviso and the other not? One supposition is that the proviso is added to preclude a contradiction from arising. To see how this could happen, let us consider two cases to which rule 4.6 is applicable, one in which the proviso does not apply, and the other in which it does.

**Case 5.1.** Let  $d$  be the *dubitatum* and  $p$  be some false statement such that  $p \rightarrow d$ . If  $p$  is put forward by the Opponent, rule 4.6 says that  $p$  should be denied.

**Case 5.2.** Let  $d$  and  $p$  be as before, but now suppose that  $\neg p$  has been put forward by the Opponent, and it was doubted by the Respondent. Suppose next the Opponent puts forward  $p$ . But by rule 4.6,  $p$  now cannot be denied, because it is the opposite of a truth which was doubted.

One explanation for why  $p$  cannot be denied in case 5.2 is that if it could, we could continue in the following fashion: If  $p$  is denied, then if the Opponent puts  $\neg p$  forward again, then  $\neg p$  must be conceded, because  $p$  has been denied. But then the Respondent has responded badly, since he has both conceded and doubted  $\neg p$ . So it is understandable why such a proviso would be included: Otherwise it is too easy for the Opponent to trap the Respondent into responding badly.

But if the proviso was added for such a reason, why does rule 4.7 not contain an analogous condition? We do not have an answer to this question, but the matter seems to be connected with another asymmetry between the way things (a) antecedent to and (b) following from the *dubitatum* are treated: with respect to (a), our author observes that some things are antecedent *per se*, while others are so together with conceded or denied things, but nothing of this sort is said of (b), the things following from the *dubitatum*.

The puzzle just discussed is closely linked to a broader one: the proviso mentioned in rule 4.6 seems to apply to cases beyond just where  $p \rightarrow d$  or  $d \rightarrow p$ . In fact, it appears that we would want the proviso to apply everywhere: if some proposition is the opposite of a truth being doubted, it is impossible to deny it without running into a contradiction soon afterwards (‘thing being doubted’ here interpreted not as ‘is the *dubitatum*’, but as any proposition which has been doubted at some stage in the obligation). For example, suppose that  $p$  is true and that at some point in the disputation we have (correctly) doubted  $p$ . Then, the Opponent puts forward  $\neg p$ .  $\neg p$  is false (because  $p$  is true), but if we reject  $\neg p$ , then we must accept  $p$ ; but  $p$  is doubtful to us. Since  $\neg p$  is false, we cannot accept  $\neg p$ . So, we must doubt  $\neg p$ .

### 5.3 Specific rules concerning convertibles and opposites

We have only a minor comment to make here. That everything convertible with the *dubitatum* and every opposite of the *dubitatum* must be doubted (rule 4.5) seems straightforward, and the same holds for the more specific rules concerning things repugnant to the *dubitatum* (rules 4.8, 4.9, 4.10). The rules show once more—as the same goes for the ones discussed above—that the logic behind the rules is two-valued: they would not make sense if apart from true and false a third value ‘doubtful’ were supposed to exist.

## 6 Formalization of the rules

In this section we give a provisional formalization of the rules which will allow us to, in future work, prove some formal properties about *dubitatio*-dialogues of this type. In our formalization, we work from the modified version of rule 4.1 discussed in §5, namely that “Everything antecedent to the *dubitatum* must be held not true, that is false or doubtful”.<sup>20</sup>

<sup>20</sup>*Omne antecedens ad dubitatum habendum est pro non vero, idest pro falso vel pro dubio.*

Before we give our formalization, we make explicit two of our assumptions. The first is that we take ‘hold to be true’ as equivalent to ‘concede’, ‘hold to be false’ as equivalent to ‘deny’ or ‘negate’, and ‘hold to be doubtful’ as equivalent to ‘doubt’. This is not an unrealistic assumption, but it is an assumption: No such equation is given by our author. The second assumption that we make is that we were working with a two-valued logic. This assumption is not unreasonable given what we discussed in §5. This means that we have a function  $V$  from propositions to truth values such that  $V(p) = T$  if the proposition is true *in rei veritate* and  $V(p) = F$  otherwise.

We now construct a function  $\Phi$  which when given an  $O$ -statement (a statement by the Opponent) returns an  $R$ -action (an action of the Respondent). There are three  $R$ -actions:  $C$  = ‘concede’,  $D$  = ‘doubt’, and  $N$  = ‘negate’ (or ‘deny’). Hence, if  $p$  is a proposition, then  $\Phi(p)$  will be one of  $C$ ,  $D$ , or  $N$ , and which is governed by the constraints outlined in rules 4.1–4.10 above.

We first note that rules 4.3, 4.4, 4.8, and 4.9 do not tell the Respondent how he should respond to certain propositions, but rather lays out certain facts about the truth values of propositions in the *dubitatio* and the relationships between them. The remaining rules do give specifications for how the Respondent should respond. Let  $d$  be the *dubitatum*.

1.  $\Phi(d) = D$  (definitional).
2. if  $p \rightarrow d$ , then  $\Phi(p) \neq C$  (rule 4.1).
3. if  $d \rightarrow p$ , then  $\Phi(p) \neq N$  (rule 4.2).
4. if  $d \leftrightarrow p$ , then  $\Phi(p) = D$  (rule 4.5).
5. if  $p = \neg d$ , then  $\Phi(p) = D$  (rule 4.5).
6. if  $p \rightarrow d$ , if  $V(p) = F$ , if  $\Phi(\neg p) \neq D$ , then  $\Phi(p) = N$  (rule 4.6).
7. if  $d \rightarrow p$  and  $V(p) = T$ , then  $\Phi(p) = C$  (rule 4.7).
8. if  $d \rightarrow p$  and  $V(p) = F$ , then  $\Phi(p) = D$  (rule 4.7).
9. if  $p \perp d$  (read ‘ $p$  is repugnant to  $d$ ’), then it is one of these:

	<i>per se</i>	<i>per accidens</i>
contradictory	$R_1$	$R_2$
contrary	$R_3$	$R_4$

if  $r \in R_1$ ,  $\Phi(r) = D$ . If  $r \in R_2, R_3, R_4$ , if  $V(r) = F$ ,  $\Phi(r) = N$  and if  $V(r) \neq F$ , then  $\Phi(r) = D$  (rule 4.10).

In future work, we hope to use this specification of  $\Phi$  to determine whether the Opponent has a winning strategy, that is, he can always force the Respondent into a contradiction.

## 7 Comparison with contemporary *dubitatio* rules

In §5 we noted that other contemporary *obligatio* treatises have a rule corresponding to rule 4.1 but which agrees with our intuitions about how antecedents of a *dubitatum* are to be treated. Two of these treatises are the texts of Nicholas of Paris and William of Sherwood mentioned in §2. Though we cannot say for sure when they were written or whether any of the three authors were familiar with the works of the other two, if we accept that they are all from the 13th century, and two of them probably relatively early, it is therefore both interesting and useful to compare the *dubitatio* rules in our current treatise with those in the tract of William of Sherwood and in the Nicholas of Paris text.

Unlike the author of *Obligationes Parisienses*, Nicholas of Paris does not question the proper nature of *dubitatio*. Instead he distinguishes two types of doubting, of which the second is used further in the treatise and the first one refers to Aristotelian tradition:

So it must be known that ‘to doubt’ is understood in two modes. The first mode means lack of cognition or knowledge or apprehension of things or causes in particular being with supposition of the general knowledge. Such a lack is caused by two reasons: by no or minimal apprehension of scientific causes or by multiplicity of reasons appropriate for the both parts’. This type of doubting is supported by Aristotle’s “to doubt about singular things is quite useful”<sup>21</sup>, that is: to try to find reasons causing doubts for both parts of the contradiction [2, p. 207].<sup>22</sup>

and

Positing of any enuntiable that is obligated to somebody in such a way, that its truth or falsity would be doubted. And to doubt is to accept something enuntiable as doubtful, that is, it must be answered in none of two modes (that is ‘it is true’ or ‘it is false’) but ‘prove!’ Whence when it is said ‘you concede it [to be doubtful]’, that means: concerning this enuntiable you are in such a state that you cannot accept it either as true, or as false, but as doubtful.<sup>23</sup>

So, by refusing to use Aristotle’s definition, Nicholas of Paris is free to use the triple system of *obligationes*. Nicholas gives seven rules for *dubitatio* [2, pp. 72–76]:

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<sup>21</sup>Cf. footnote 3.

<sup>22</sup>*Sciendum igitur quod ‘dubitare’ duobus modis sumitur. Primo, secundum quod est privatio cognitionis vel notitiae vel apprehensionis rerum vel causarum in esse speciali cum suppositione generalis notitiae. Que privatio causatur a duobus: vel propter nullam aut minimam causarum scientificarum apprehensionem, vel propter rationum utrimque contingentium multitudinem. De qua ultima habetur in libro Predicamentorum: 309 ‘dubitare de singulis non est inutile’, idest: conari invenire ad utramque partem contradictionis rationes dubitare facientes.*

<sup>23</sup>*Positio alicuius enuntiabilis per quam obligatur aliquis ut de veritate vel falsitate eius dubitetur. Et dubitare est enuntiabile aliquod accipere tamquam dubitatum, scilicet ad quod neutro modo sit respondendum, scilicet ‘verum est’ vel ‘falsum est’, sed ‘proba’. Unde cum dicitur ‘dubitetur te concedere’, sensus est: ad hoc enuntiabile te habeas ita quod nec pro vero nec pro falso ipsum accipias, sed pro dubitato.*

**Rule 7.1** (N-1). Just as in false position it is impossible to put down “a falsehood is put down” nor in deposition “a false is to be deposed”, by the same reason it is impossible to doubt “a false is doubted”.<sup>24</sup>

**Rule 7.2** (N-2). Just as in *positio* a *positum* put forward in the form of the *positum*, and everything convertible to it in the time of positing is to be conceded and its opposite and things convertible with it is to be denied and just as in *depositio* a *depositum* put forward in the form of the *depositum*, with its convertibles, must be denied and its opposite with things convertible with it must be conceded; so in *dubitatio* for a *dubitatum* put forward in the form of *dubitatum* and for its convertibles and moreover for the opposite of the *dubitatum* with its convertibles must be answered “prove!”<sup>25</sup>

**Rule 7.3** (N-3). For everything antecedent to the *dubitatum* the response must be “false” or “prove!” and never “true”.<sup>26</sup>

**Rule 7.4** (N-4). For everything consequent to the *dubitatum* it is possible to reply “it is true” or “prove” and never “it is false”.<sup>27</sup>

**Rule 7.5** (N-5). For everything irrelevant to the *dubitatum* the response must be according to its quality.<sup>28</sup>

**Rule 7.6** (N-6). The questioning exercise cannot be terminated.<sup>29</sup>

**Rule 7.7** (N-7). All the responses must be directed to the same instant.<sup>30</sup>

We make just a few comments on these rules. Rules 7.3 and 7.4 correspond to the *Parisienses* rules 4.1 and 4.2, with the important difference that 7.3 says what 4.1 doesn’t say and what we expect it should say. Noteworthy also are rules 7.1, 7.6, and 7.7 which have no correspondent in the *Parisienses* rules. This means that what it takes our author ten rules to say can in fact be summed up with merely four.

The rules found in the Sherwood treatise are the following:

**Rule 7.8** (PS-1). For every *dubitatum* put forward in the time of *dubitatio* the response is doubtful. Similarly for everything convertible with the *dubitatum* and for every contradictory of the *dubitatum*, the response is doubtful, seeing that it would be impossible to doubt one of a contradictory unless the remainder is [also] doubted.<sup>31</sup>

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<sup>24</sup>*Sicut in falsa positione non potest poni falsum poni nec in depositione falsum deponi, ita nec in dubitatione potest dubitari falsum dubitari.*

<sup>25</sup>*Sicut in positione positum sub forma positi propositum et omne convertibile cum illo in tempore positionis est concedendum et suum oppositum cum suo convertibili negandum, et sicut in depositione depositum sub forma depositi propositum cum suo convertibili negandum et suum oppositum cum suo convertibili concedendum, ita in dubitatione ad dubitatum sub forma dubitati propositum et ad suum convertibile et preterea ad oppositum dubitati cum suo convertibili respondendum est ‘proba’.*

<sup>26</sup>*Ad omne antecedens ad dubitatum respondendum est ‘falsum’ vel ‘proba’ et nunquam ‘verum’.*

<sup>27</sup>*Ad omne consequens ad dubitatum potest responderi ‘verum est’ vel ‘proba’ et nunquam ‘falsum est’.*

<sup>28</sup>*Ad omne impertinens dubitato respondendum est secundum sui qualitatem.*

<sup>29</sup>*Non possit terminari disciplinalis questio.*

<sup>30</sup>*Omnes responsiones retorquende sunt ad idem instans.*

<sup>31</sup>*Ad omne dubitatum, in tempore dubitationis propositum, respondendum est dubie. Similiter, ad convertibile cum dubitatio, et ad contradictorium dubitati respondendum est dubie, cum sit impossibile dubitare unum contradictorium nisi dubitetur reliquum.*

**Rule 7.9** (PS-2). For the *dubitatum* and for its convertible and for its contradictory and for its consequence, if it is false, and for its antecedent, if it is true, the response is doubtful. But if the antecedent is false, it must be denied, and the consequent, if it is true, must be conceded; and this is [also] said of the antecedent and the consequent of things not convertible. And for irrelevant things the response is according to its quality.<sup>32</sup>

**Rule 7.10** (PS-3). No matter how it is doubted whether a contingent truth must be conceded or a contingent falsehood denied, in that concession what was doubted must be conceded, or in that denial what was doubted must be denied, it is necessary to respond doubtfully to this ‘only this is obligated’, in the *dubitatum* demonstrated to you.<sup>33</sup>

**Rule 7.11** (PS-4). Whenever it is doubted of an impossible that it must be denied, or of a necessity that it must be conceded, the response is doubtful for this: ‘only this is obligated’ (in the demonstrated *dubitatum*).<sup>34</sup>

The author also notes that “previously specified rules in *positio* and in *depositio* must here be sustained, namely: All responses have to refer back to the same instant”<sup>35</sup>, echoing rules 7.1 and 7.2 of Nicholas of Paris.

William, like Nicholas, is able to specify the rules for *dubitatio* in just four parts. From this we can draw two tentative conclusions. The first is that the Parisienses author was probably not familiar with these two texts (for if he was, and he did not simplify his rules accordingly, that would be strange). The second, which is even more tentative, is that the Parisienses text seems to be less sophisticated than the other two: The rules are verbose, they are not nicely fashioned, and seem to include some redundancies and trivialities that we would expect to be lost in a more complete understanding of how this system of doubt worked. If we are correct in our analysis, then it would not be surprising if this text turned out to be dated prior to the other two more sophisticated versions with their simpler, more stream-lined rules.

## 8 Conclusions

At the beginning of our paper, we noted that one reason why modern logicians tend to ignore *dubitatio* when writing about medieval *obligationes* literature is that they consider it to be just a trivial variant of *positio*. We hope that through our discussions of the *dubitatio* rules in the *Obligationes Parisienses* treatise,

<sup>32</sup>*Ad dubitatum et ad suum convertibile et ad suum contradictorium et ad suum consequens, si sit falsum, et ad suum antecedens, si sit verum, respondendum est dubie. Sed si antecedens sit falsum, debet negari, et consequens, si sit verum, debet concedi; et hoc loquendo de antecedente et consequente non convertibilibus. Ad impertinens respondendum est secundum sui qualitatem.*

<sup>33</sup>*Una regula est: qualiterque dubitetur verum contingens esse concedendum, vel falsum contingens esse negandum, concesso isto quod dubitatur esse concedendum, vel negato isto quod dubitatur esse negandum, oportet respondere dubie ad hanc ‘tantum hoc est obligatum’, demonstrato tibi dubitato.*

<sup>34</sup>*Alia regula est: quandocumque de impossibili dubitatur ipsum esse negandum, vel de necessario ipsum esse concedendum, respondendum est dubie ad istam ‘tantum hoc est obligatum’ (demonstrato dubitato).*

<sup>35</sup>*Regulae prius positae in positione et in depositione sunt hic sustinendae, scilicet: omnes responsiones sunt retorquendae ad idem instans.*

with a comparison to similar systems found in works of the contemporary writers William of Sherwood and Nicholas of Paris, we have shown that this is not the case. Reasoning in *dubitatio* requires the Respondent not only to know of the logical relationships between true and false propositions, but also to be able to reason about relationships of doubting. The formal presentation of the rules shows that it is unlikely that this system of *dubitatio* could ever be reduced to a trivial variant of *positio*. We hope to prove this formally in future work.<sup>36</sup>

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<sup>36</sup>Another indication that this is the case can be seen in [3], which is a discussion of an attempt to implement Burley’s rules for *positio* and the Parisienses rules for *dubitatio* in an interactive website; the former was successful, but the latter, to this point, has not been.



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