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Insolubles

Walter Segrave

Critical Edition with English Translation
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Introduction[1]

Walter Segrave's *Insolubles* is a direct response to Thomas Bradwardine's attack on restrictivism (*restrictio*) in his own treatise on insolubles, written in Oxford in the early 1320s.[2] Segrave's treatise must have been composed before 1333, the date of the earliest manuscript in which it is preserved. Walter's text is also, we will see, aware of Kilvington's *Sophismata*, composed at Oxford in the mid-1320s.

According to Emden,[3] Walter de Segrave (or de Sexgrave) was at Merton College, Oxford from 1321 until at least 1338, and had become *Magister Artium* by 1336. The Segrave family, to which Walter may surely have been closely related, was based at Segrave, or Seagrave, in Leicestershire, in the middle of England and as far from the sea as it is possible to be in England, recorded as Setgrave in the Domesday Book of 1085–86. The first Baron de Segrave died in 1295 and Gilbert de Segrave was Bishop of London from 1313 until his death in 1316.[4] From 1340–42 Walter was Chancellor to Richard Aungerville, that is, Richard de Bury, Bishop of Durham, who famously gathered around him some of the very best minds in the kingdom, including Walter Burley, Thomas Bradwardine and Richard Kilvington, all of whom discussed insolubles in their published works. Walter Segrave subsequently became Dean of Chichester, but was dead by 1349.

[1] Much of this 'Introduction' is taken from Read, 'Theories of Paradox from Thomas Bradwardine to Paul of Venice', §1 and 'Walter Segrave's "Insolubles": A Restrictivist Response to Bradwardine', §§1–3. (For full bibliographical information on the references, see the Bibliography.)

[2] See Bradwardine, *Insolubilia*, ed. Read, p. 2.

[3] Emden, *A Biographical Register of the University of Oxford to A.D. 1500*, vol. III, col. 1664.

[4] For further information on the de Segrave family, see Segrave, *The Segrave Family 1066–1935*.

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1. Insolubles

Although the Liar paradox and similar puzzles were well known and much discussed in antiquity, the medieval interest in them seems to be quite independent and largely in ignorance of those discussions.[5] On the one hand, their paradoxical nature seems not even to have been properly recognised until the end of the twelfth century, and the only reference from antiquity which is regularly cited is Aristotle's discussion of the oath-breaker in his *Sophistical Refutations*, ch. 25. The oath-breaker first says that he will break his oath and then proceeds to fulfil that oath by breaking a subsequent one. To be truly paradoxical, it would need to be one and the same oath which he both fulfils and breaks. This is what we find in the classic case of the Liar paradox, when someone says 'I am lying' (where this is all he says, or at least he means to refer to his own utterance) or 'This utterance is false' (referring to that very utterance). For if it is true then it must be false (for that is what was said), so it is not true (since it cannot be both), and consequently by *reductio ad absurdum* it really is not true, and so is false (assuming it is either true or false, and so if not true, then false). But given, as we have just proved, that it is false, it is surely true (since that is what was said). Thus we have proved both that it is true and that it is false (indeed, that it is both true and not true), and that conclusion is paradoxical (literally, beyond belief). Something has surely gone wrong. It is puzzles like these that the medievals referred to as "insolubles"—not that they are insoluble, but that they are very difficult to solve.[6] But what is the mistake and what is the solution?

2. Cassationism and Restrictivism

We can divide medieval discussions of the insolubles into two main periods, before Bradwardine and after Bradwardine. Thomas Bradwardine wrote his treatise on *Insolubles* in Oxford in the early 1320s and it seems to mark a sea change in the solutions which were mainly favoured. It was standard practice in medieval treatises on insolubles, at least from Bradwardine onwards, to start by describing the faults of rival theories. The dominant theory at the time Bradwardine was writing was restrictivism (*restrictio*), the claim that the part cannot supposit for the whole of which it is part (nor for its contradictory or anything convertible with it), at least in the presence of a privative term, in particular, privative alethic and epistemic terms such as 'false' and 'unknown'.[7] Accordingly, Brad-

[5] See, e.g., Spade and Read, 'Insolubles', §2.

[6] See, e.g., Ockham, *Summa Logicae*, ed. Boehner, Gál and Brown, III-3 ch. 46, p. 744: "As for insolubles, you should know that it is not because they can in no way be solved that some sophisms are called insolubles, but because they are solved with difficulty." All translations are our own, unless noted otherwise.

[7] On the medieval notion of supposition and what it is for a term to supposit, see, e.g., Read, 'Medieval Theories of Properties of Terms', §3.

wardine spends two and a half chapters attacking restrictivist theories, leaving only half a chapter to dismiss other solutions before turning to present his own, or as he calls it, "Aristotle's correct solution".

Restrictivism is one of the two types of solution which feature most prominently in discussions of the insolubles before Bradwardine, the other being cassationism (*cassatio*).[8] We know of only two thirteenth-century treatises on insolubles that favour a cassationist solution, according to which those uttering insolubles say nothing at all. For if they did, they would say something true or false, and if so, both—that is, on pain of contradiction. The anonymous author of the *Insolubilia Monacensia* writes:

> An insoluble is a necessary and circular argument to each part of a contradiction [...] For example, that I say a falsehood [...] For that reason, since regarding this utterance it follows, supposing that it is asserted, that it is an insoluble, the response should be 'You say nothing', since generally regarding any utterance everything should be declared void supposing which an insoluble results.[9]

Cassationists are dismissed by Walter Burley, writing at the turn of the fourteenth century, as denying the evidence of their senses, since one only has to listen to Socrates uttering 'Socrates says a falsehood' to hear that he did say something.[10] A cursory glance at Burley's treatise on insolubles might lead one to think that Burley also rejects restrictivism along with cassationism, for Burley follows his rejection of cassationism with a similarly blunt rejection of unqualified restrictivism by observing (Burley, *Insolubilia*, ed. Roure, §2.05) that if Socrates starts to speak by saying 'Something is said by Socrates', he's clearly said something true. But the only thing he said was 'Something is said by Socrates'. So 'something' there must supposit for the whole of which it is part.

But although he rejects unqualified restrictivism, Burley's own solution is a qualified version: no part can supposit for the whole of which it is part when that self-reference (or self-reflection) is accompanied by a privative determination such as 'false' or 'not true':

> Moreover, one should realise that a part never supposits for the whole of which it is part when, putting the whole in the place of the part, what results is reflection of the same on itself with a privative determination. (Burley, *Insolubilia*, §3.03)

[8] For a little more detail of cassationism, see Spade and Read, 'Insolubles', §2.5.

[9] De Rijk, 'Some Notes on the Mediaeval Tract De insolubilibus ...', p. 105. De Rijk dubs the treatise "the Munich insolubles" since it survives only in a single manuscript in the Munich Staatsbibliothek. It was written at the end of the twelfth, or more probably at the beginning of the thirteenth century.

[10] See Burley, *Insolubilia*, §2.03: "Furthermore, they deny the evidence of our senses, because they can hear that Socrates says that he says a falsehood, so that Socrates says a falsehood can be said by Socrates."

The reason is, he claims, that everyone saying anything asserts that what he says is true (§3.02), so if anyone says that what he is saying is false he asserts both that it is true and that it is false, and so implicitly asserts a contradiction. Bradwardine, thinking specifically of insolubles, will infer that what was said is false, as is every contradictory utterance. Burley, however, infers the conclusion above, that no part supposits for the whole etc.—he calls it a rule (*regula*). He goes on to illustrate the application of the rule to numerous examples at length.

Bradwardine focusses his criticism on what he calls the "roots" (*radices*) in its "basic assumption" that the part cannot supposit for the whole of which it is part, however qualified:

> Now we could concoct this reason: if the part in such cases did supposit for the whole of which it was part, it would follow that the same proposition was true and false and that insolubles could not possibly be solved. But neither follows, as we will observe in what follows. So this is no more than a concoction of those who do not know how to respond otherwise to the insolubles. (Bradwardine, *Insolubilia*, §3.1.4)

There are many assumptions lying behind the derivation of contradiction in the case of the insolubles, and Bradwardine criticizes restrictivism for giving no reason for singling out self-reference (even self-reference coupled with the presence of a privative term) as the fatal flaw.

3. Bradwardine's Solution

In contrast to Burley's casual and informal presentation of his solution (mainly by example), Bradwardine sets out his assumptions (or postulates) explicitly in order:

> There are six postulates:
>
> (P1) Every proposition is true or false.
>
> (P2) Every proposition signifies or means as a matter of fact or absolutely everything which follows from it as a matter of fact or absolutely ⟨respectively⟩.
>
> (P3) The part can supposit for its whole and for its opposite and for what is equivalent to them.
>
> This postulate, even if it is not immediately obvious, can nonetheless be assumed because it is clear enough from what has gone before.
>
> (P4) Conjunctions and disjunctions with mutually contradictory parts contradict each other.
>
> (P5) From any disjunction together with the opposite of one of its parts the other part may be inferred.

> (P6) If a conjunction is true each part is true and conversely; and if it is false, one of its parts is false and conversely. And if a disjunction is true, one of its parts is true and conversely; and if it is false, each part is false and conversely. (Bradwardine, *Insolubilia*, §6.3)

The third postulate affirms Bradwardine's rejection of restrictivism. The second postulate is what is most distinctive of his solution. Behind it lies Bradwardine's fundamental idea, namely, that propositions may, indeed do mean more than at first appears. This claim became the main battleground in debates about insolubles for the rest of the fourteenth century, and beyond. It was not completely novel, for as we have seen, Burley himself claimed that anyone saying anything implicitly asserts that what they say is true, an idea going back at least to Bonaventure—indeed, according to Segrave to Aristotle.[11] But Bradwardine took it further, and (P2) is at once a control and a generator of what lies hidden in a proposition. He also, in modern parlance, moved that hidden component from illocutionary force (assertion) to locutionary meaning (signification). Very many subsequent proposals about the insolubles, those of William Heytesbury, Gregory of Rimini, John Buridan, Albert of Saxony, Peter of Ailly, Marsilius of Inghen, Robert Eland, Ralph Strode, John of Holland and John Hunter, both at Oxford and at Paris, turned on the existence of such tacit or implicit signification. Few stood out against it, notably Roger Swyneshed and his followers.

On all the other postulates, including (P1), Bradwardine and Burley agree. For every insoluble is either affirmative or negative, says Burley,[12] and every affirmative insoluble is false and every negative insoluble is true, he says—but here Bradwardine differs: for him, every insoluble is false. Burley does not spell out his account of truth and falsehood here, but he does elsewhere. Conti ('Walter Burley', §2) notes that "the three main principles of his semantic theory remained the same throughout his academic career", the third being that a proposition "is true if and only if it is the sign of 'the truth of things' (*veritas rerum*)." In general, Burley's account was that truth is the adequation of thought and reality (Conti, *ibid*., §5), but more practically, the true propositions correspond to real propositions composed of the significates of their constituent terms together with a copula of identity, so that an affirmative subject-predicate proposition is true if and only if the significates are identical (*ibid*., §5). But given his extended notion of signification, Bradwardine has to modify the account of truth. Accordingly, he defines a true proposition as an utterance signifying only as things are and a false proposition as an utterance signifying other than things are (Bradwardine, *Insolubilia*, §6.4):

> The definitions are two, of which the first is this:

[11] See §5 below and §4.5 in Segrave's text. See also Spade and Read, 'Insolubles', §3.5.
[12] Burley, *Insolubilia*, §3.05, and Bradwardine agrees: *Insolubilia*, §6.1.

> (D1) A true proposition is an utterance signifying only as things are. The second is this:
>
> (D2) A false proposition is an utterance signifying other than things are. (Bradwardine, *Insolubilia*, §6.2)

From these definitions, together with the six postulates, he is able to prove his main conclusion:

> If any proposition signifies itself not to be true or itself to be false, it signifies itself to be true and is false.

Note that the claim is restricted to propositions which signify themselves not to be true or to be false, that is, to insolubles. Bradwardine does not simply claim or postulate this. He proves, by an elaborate argument which deserves close analysis (Bradwardine, *Insolubilia*, §§6.5.1–6.5.2), that all insolubles signify of themselves that they are true. Suppose that all I say is 'I am not speaking the truth' (*ego non dico verum*), for example. By Bradwardine's main conclusion this signifies not only that I am not speaking the truth, and so that it itself is not true (by P2, since it is the only thing I say), but also that it is true. So things cannot be wholly as it signifies, since it cannot be both true and not true. Hence, Bradwardine concludes, what I said was false.

Not so for Burley, as he spells out at length:

> If anyone begins to speak like this: 'I am not speaking the truth', then this is true. (Burley, *Insolubilia*, §3.05)

For 'truth' in that utterance cannot supposit for the whole of which it is part. It must supposit either for some other utterance of mine, or for nothing. But there was no other utterance of mine. So 'truth' here lacks a suppositum. Now as a general rule, the medievals took existential import seriously. Affirmatives with empty terms are false, and correspondingly, negative propositions with empty terms are true.[13] So for Burley, my utterance is true.

4. The Structure of Segrave's Treatise

Segrave's treatise runs to some 13400 words, the English translation to some 18000 words. It is divided in the Erfurt manuscript Octavo 76 (siglum: E_8) into seven chapters. The first chapter briefly defines what Segrave takes to be the essential nature of an insoluble, which will be

[13] See, e.g., Klima, 'Existence and Reference in Medieval Logic', p. 198.

fully elaborated in the fourth chapter. The second and third chapters argue against previous solutions, which Segrave divides into two main groups: those which claim that insolubles are paralogisms defective in their matter, on the one hand; and those identifying an error in their form, on the other hand. In the second chapter, which presents solutions based on errors in matter, Segrave lists the cassationists, who are dismissed rapidly, and those who, like Bradwardine, claim that insolubles are self-contradictory in signifying themselves not only to be false but also to be true (see §2.2.1). In the third chapter, Segrave argues against solutions which identify the error in the paralogisms' form (*peccantia in forma*), namely, those which appeal in one way or another to the fallacy of the conditional and the unconditional (*fallacia secundum quid et simpliciter*).

The fourth chapter presents Segrave's own solution in detail. Unlike previous forms of the restrictivist solution, which Bradwardine divides into those appealing to the fallacy of the conditional and the unconditional, those solving insolubles by the fallacy of form of expression (*forma dictionis*), those appealing to the fallacy of false cause (*non causa ut causa*) and those restricting the time rather than the reference (*suppositio*), Segrave identifies a fallacy of accident in them (see §6 below). In the fifth chapter he considers a number of objections, in the sixth he illustrates his solution by applying it to a wide range of familiar and less familiar examples (including Kilvington's notorious 48th sophism),[14] and in the final chapter he discusses sophisms which only seem to be insolubles but in fact are not.

5. *Obligationes*

There is much use in Segrave's treatise, as in most other fourteenth-century treatises on insolubles, of the language of *obligationes*, logical obligations. This is a sui generis species of logical activity, consisting of a unique kind of dialogue between an Opponent and a Respondent governed by strict rules. Starting in the thirteenth century, several species of *obligatio* were distinguished, the main one being *positio*. A *positio* opens with the description by the Opponent of a background scenario, and the positing of a proposition, known therefore as the *positum*. That proposition is usually, though not necessarily, one which is false in the scenario, and the *positio* should be admitted by the Respondent if (and only if) the scenario and *positum* are (or at least could be) possible. Further propositions are then presented to the Respondent, who is required to grant, deny or doubt (or at least, "express doubt about") them in line with the following rules (which vary in detail between different authors):

[14] See §6.14 in Segrave's text, and B. and N. Kretzmann (eds), *The Sophismata of Richard Kilvington*, Sophism 48.

— If the proposition follows from or is inconsistent with the *positum* (and what has earlier been granted and the opposite of what has been denied), it is deemed relevant, and must be granted if it follows and denied if inconsistent;

— otherwise it is irrelevant, and should be granted if known to be true in the scenario specified, denied if known to be false, and doubted if its truth-value is unknown.

In general, the Respondent can in principle follow these rules without contradicting himself; but he responds badly if he grants contradictory propositions or grants and denies the same proposition. A proposition is deemed to have been granted if its contradictory has been denied, and vice versa. After a specified time, or when it is thought that the Respondent has responded badly, the *obligatio* is paused or terminated (*Cedat tempus*) and the Respondent's responses are analysed.

Several of the paralogisms in ch. 6 are given explicitly in the form of an *obligatio*. Take, for example, the insoluble presented in §6.6: the scenario is that A is either 'God exists' or 'Nothing proposed to Socrates should be granted by you', you don't know which; and it is posited that 'A is true' is the only proposition proposed to Socrates. Then 'A is true' is proposed to you. Should you grant, deny or doubt it? This is about as far as the obligation itself gets. What we're presented with over the next couple of pages is, first, an insoluble: you can't deny it, you can't doubt it, but it seems you can't grant it either. Segrave's resolution is to show that, although 'A is true' should be granted, A itself should be doubted, that is, you know A is true even though you don't know what A says.[15] (A non-insoluble example might be one where you know A is either 'God exists' or 'A man is not a donkey': you don't know what A is, or says, but at least you know it's true, whichever it is.) The argument against granting 'A is true' turns on the apparent self-reference in A: since 'A is true' is the only proposition proposed to Socrates, if A is 'Nothing proposed to Socrates should be granted by you', A will be equivalent to '"A is true" should not be granted by you', preventing you from granting it on pain of contradicting the *positum*. Segrave's solution to the insolubles claims that this equivalence fails, dissolving the paradox.

Further examples concerning whether or not to grant what is proposed to you are found in §§6.7, 6.10, 6.11, 6.12 and 6.13. A particularly elaborate obligation is found in §6.14. However, there are other uses of forms of the verb 'ponere' and the corresponding noun 'positio' which should not be taken in the technical sense associated with obligations. For example, when Segrave writes (§ad 2.1.1): "Sed ista positio negat sensum", he

[15] Similar puzzles about whether one can doubt what one knows are discussed by Heytesbury in his 'De Scire': see Heytesbury, 'The Verbs "Know" and "Doubt"'.

is not referring to an obligational positio, but to the solution (that is, proposed solution) or opinion or claim of the cassationists. Similarly, at §2.2.1 ("Ratio autem istius positionis") he is referring to Bradwardine's proposed solution, and repeatedly in the paragraphs that follow. Again, in §2.1.1 Segrave introduces the classic Liar Paradox: 'Ego dico falsum' ('I say a falsehood') as uttered by Socrates, with the phrase 'ponatur', and in the following paragraph refers back to it: 'casu posito' ('in the scenario proposed'). This is no more than familiar use of 'ponere' and its cognate forms ('supponere', 'proponere') to describe the act of supposing, or claiming, or proposing. It is important to recognise that many of the medievals' technical terms also enjoy a familiar and non-technical usage.

6. Segrave's Solution

Like Burley, Segrave shares many assumptions with Bradwardine, apart of course from (P3). Indeed, at a couple of points Segrave appears to endorse Bradwardine's second postulate (P2), that a proposition signifies everything implied by what it signifies.[16] For the heart of Segrave's solution is that, since (as we saw Burley and Bonaventure claim) whoever asserts a proposition asserts that it is true, the restriction on supposition that Segrave maintains is that:

> The extremes of a proposition only supposit ⟨for⟩ those things about which the whole can mean that it itself is true, assuming that it exists, and those extremes do not supposit ⟨for⟩ those things about which the whole, assuming that it exists, would mean that it itself is false. And this is what I claim. (§4.5.3)

The reason Segrave gives is that:

> it is because the extremes take their supposition from the copula, whose significate is that the proposition is true, as was said. So the extreme does not supposit for anything about which the whole would mean that it itself is false or is not true, because this would be inconsistent with the significate of the copula, and so the extremes should be restricted by the meaning of the copula. (§ad 4.6.2)

Consider, e.g., he says

> A falsehood exists,

[16] This is to interpret (P2) as a closure postulate: see, e.g., Bradwardine, *Insolubilia*, 'Introduction', p. 17. However, there is an alternative interpretation, found in Paul of Venice's *Logica Magna*: see Read, 'Truth, Signification and Paradox', p. 405.

call it A, and suppose there is no other falsehood—perhaps God has annihilated all other propositions, or all other existential propositions.

> But it is evident that this:
>
> A falsehood exists,
>
> does not signify that no other falsehood exists. For it always signifies in one way for its own part, since it does not have a mind of its own [...] But on the contrary: this inference is necessary:
>
> A is false, therefore no other falsehood than A exists,
>
> because if there were another falsehood, then A would be true, so whatever implies or signifies the premise signifies the conclusion, so from the opposite, the premise does not signify what the conclusion does not signify. (§§ad 4.6 – ad 4.6.1)

According to Bradwardine, A signifies that A is false, since that follows *ut nunc* (as a matter of fact, given that no other falsehood exists) from A—or rather, from what A signifies, namely, that a falsehood exists. But if A is false then no other falsehood exists, for, Segrave observes, if there were another falsehood, A would be true. So, by Bradwardine's second postulate (P2), since A signifies that A is false, it signifies that no other falsehood exists. But we agreed that A does not signify that, so it follows that it does not signify that it itself is false, either.

One might wonder if Segrave is really endorsing and using Bradwardine's postulate (P2) in his own person here. For this would seem to be an argument against Bradwardine, and so arguably simply *ad hominem*. But Segrave also appeals to (P2) a little earlier in providing justification for Burley's claim that every proposition signifies (or at least, for Burley, asserts) its own truth. Recall that Bradwardine's main conclusion applies only to insolubles, that is, propositions signifying their own falsehood. Segrave bases his stronger claim on the role of the copula, referring to Aristotle's remark that "the 'is' in a statement also means that the statement is true and 'is not' that it is not true" and Averroes' comment that "'being' here signifies nothing but truth."[17] From this, Segrave draws his only postulate:

> The postulate is this: that every proposition means things being in reality as it signifies. This is self-evident and is clear from the Philosopher and the Commentator in comment 14 on the fifth book of the *Metaphysics* and throughout the text of that comment: for the copula in the proposition signifies being true, as is elucidated there [...]
>
> From this what was claimed follows ostensively in this way: every proposition not involving a contradiction signifies things being in reality as it signifies, and does not signify things not being ⟨in reality as it signifies⟩. But things

[17] Aristotle, *Metaphysics*, tr. Hope, Δ 7, 1017a30; Averroes, *In Metaphysicen* (ed. Venice, f. 117E, https://archive.org/details/bub_gb_u_T0u0IuuyIC/page/n251/mode/2up; ed. Ponzalli, pp. 131–32): "*universaliter hoc nomen ens hic non significat nisi verum*."

> being in reality as the proposition signifies, and not things not being ⟨in reality as it signifies⟩ is for a proposition to be true and not false, provided the proposition exists; so every proposition not involving a contradiction, assuming it exists, signifies itself to be true and not false. (§§4.5–4.5.2)

Segrave takes an example: suppose you are sitting.

> [...] this inference is valid:
>
> > Things are in reality wholly as the proposition 'You are sitting' signifies, and it exists, therefore this proposition is true and not false,
>
> and the same is true of other propositions. Therefore, every proposition not involving a contradiction, assuming it exists, signifies itself to be true and not false. (§4.5.2)

The caveat "assuming it exists" reflects the fact that the medievals took propositions to be concrete, individual utterances which could not be true or false unless they actually existed. What is striking is that Segrave, taking 'You are sitting' as an arbitrary example, and generalizing it to represent any proposition, infers that any such non-contradictory proposition signifies itself to be true and not false. He is here clearly appealing to Bradwardine's second postulate, that signification is closed under implication, so if from any non-contradictory proposition it follows that it is true and not false, then that is part of what it signifies.

7. The Fallacy of Accident

Burley and Bradwardine agree on one thing: that insolubles commit the fallacy of the conditional and the unconditional (*simpliciter et secundum quid*), taking this from Aristotle's treatment in his *De Sophisticis Elenchis* of the example of the man who swears that he is forsworn.[18] Segrave says they are mistaken: according to him, insolubles commit the fallacy of accident.

The fallacy of accident is the first of the fallacies described by Aristotle in *De Sophisticis Elenchis* as those "independent of language", and discussed at some length in ch. 24. The classic example is the Hidden Man puzzle: you know your father (or Coriscus), your father (or Coriscus) is the man approaching, but you don't know the man approaching (since he is wearing a mask, or too far away to recognise, etc.). Aristotle's diagnosis was that one or more of the two properties attached to Coriscus (being known by you and being the man approaching) is accidental (or incidental) to him and so there is no essential connection to support the necessity required correctly to infer the conclusion from the premises.

[18] Aristotle, *De Sophisticis Elenchis*, ch. 25; Burley, *Insolubilia*, §4.05 (cf. Bradwardine, *Insolubilia*, §3.0); Bradwardine, *Insolubilia*, §§7.11–7.11.3 (and 'Introduction', p. 6).

It has to be said that Aristotle's discussion of the fallacy of accident is neither clear nor convincing. What he says about examples such as the Hidden Man appears to clash with the principle of expository syllogism (or *ecthesis*), stated in *De Sophisticis Elenchis*,[19] and arguably invoked by Aristotle in *Prior Analytics* to give an alternative proof of Darapti:

> The demonstration ⟨of Darapti⟩ can also be carried out *per impossibile* [i.e., by indirect reduction] or by *ecthesis* [i.e. setting out]. For if both terms belong to all S and one chooses one of the Ss, say N, then both P and R will belong to it, so that P will belong to some R.[20]

Buridan claims, pace Aristotle, that expository syllogism is the real basis of the syllogism (not the *dici de omni et nullo*):

> Every affirmative syllogism holds by virtue of the principle 'what things are said to be universally identical with one and the same thing are also said to be identical between themselves',[21]

that is, the very principle Aristotle states in ch. 6 of *De Sophisticis Elenchis*, and negative syllogisms by a corresponding principle of difference. Yet the Hidden Man can be put in exactly the form Aristotle describes as *ecthesis*:

> Being known by you is said of Coriscus
>
> Being the man approaching is said of Coriscus
>
> So being known by you is said of the man approaching.

How then can the premises be true and the conclusion false?[22]

One medieval attempt to clarify the fallacy of accident so as to accord with Aristotle's theory of the syllogism is found in Giles of Rome. The fallacy arises, he said, when there is a variation in the supposition of the middle term:

> That the major term, if it is true of the middle term, must then be true of the minor term, only happens in the case of those middle terms which are indifferent according to substance, because it requires the middle term not to vary or be diverse if the conclusion is to follow of necessity.[23]

[19] Aristotle, *De Sophisticis Elenchis*, ch. 6, 168b32: "we claim that things that are the same as one and the same thing are also the same as each other."

[20] Aristotle, *Prior Analytics* I 6, 28a24–26.

[21] Buridan, *Summulae de Dialectica*, tr. Klima, §5.1.8, p. 313. See also Buridan, *Treatise on Consequences*, tr. Read, III I 4 and 'Introduction', p. 22.

[22] Aristotle's remarks on the fallacy of accident also appear to conflict with the dici de omni. See Gelber, 'The Fallacy of Accident and the "dictum de omni"', §I, where she discusses how Boethius and others tried to reconcile this conflict.

[23] Aegidius Romanus, *Expositio supra libros Elenchorum*, cited in Ockham, *Expositio super libros Elenchorum*, ed. Del Punta, II ch. 9 §2, pp. 230–31.

Giles attempts to square this with what Aristotle says in *De Sophisticis Elenchis*:

> It should be said that it is not Aristotle's intention to deny that in no way are the unknown and the known the same; but he means that this fallacy is almost argued in four terms and always has diversity of middle term; so he says that the same is not known and unknown, because 'Coriscus' is used in different ways and almost has the power of two terms, as he is placed with respect to knowledge and as he is approaching.[24]

Burley extends the idea of variation of the supposition of terms to the extremes:

> In this fallacy there should be assigned three, namely, the attribute, the accident and the subject thing. And according to Giles, the major extreme is always the attribute and the middle term the subject thing and the minor extreme the accident. But this is not a big worry, for it suffices for there to be this fallacy that some term is not included but is compared to two other terms in the argument. Whence it should be realised that the fallacy of accident sometimes results from a variation of the middle term and sometimes from a variation of the major or minor extreme.[25]

It is not quite so straightforward, says Burley, to identify the fallacy in the Hidden Man puzzle:

> According to this fallacy, the paralogism is given in this way:
>
> The one coming is known by you, Coriscus is the one coming, hence etc.
>
> Or like this:
>
> Coriscus is known by you and is the one coming, hence etc.
>
> And it is usually said that it is a fallacy of accident from the variation of this term 'Coriscus', for concerning Coriscus in that he is known by you it is not included that he is the one coming. But on the contrary: it seems that this is not a fallacy. For from the opposite of the consequent we may with the minor premise infer syllogistically the opposite of the major premise. For this syllogism is correct:
>
> No one coming is known by you, Coriscus is the one coming, hence etc.
>
> Then it seems that in the first argument there is no fallacy of accident in respect of this conclusion, 'the one coming is known by you', and Aristotle understood this, but it is a fallacy of accident in respect of the reduplicative conclusion, or in respect of this conclusion, 'the one coming insofar as he is coming is known by you', and then it is not a fallacy of accident from the variation of the middle term, but from the variation of the minor extreme, because this term 'the one coming' is taken in different ways in the minor premise and in the conclusion.[26]

[24] Aegidius Romanus, *Expositio supra libros Elenchorum*, cited in Ockham, *ibid*., II ch. 9 §2, p. 231 n. 3.

[25] Walter Burley, *Tractatus super librum Elenchorum*, cited in Ockham, *loc. cit*. This work may have been written at Oxford before Burley left for Paris in around 1307: see Ottman and Wood, 'Walter of Burley', p. 7.

[26] Burley, *loc. cit*., cited in Ockham, *Expositio super libros Elenchorum*, II ch. 9 §2, p. 232 n. 4.

Typical cases of reduplication employ the expressions 'qua' or 'insofar as', e.g., 'I know Coriscus qua the one approaching'. The medievals often used reduplication as a test for whether the fallacy of accident was present.[27] So, e.g., Ockham complains that it is commonly said that the Hidden Man paralogism is shown to commit a fallacy of accident since "it is not included that Coriscus is approaching insofar as he is known ⟨by you⟩." (Ockham, *ibid*., pp. 231–2)

Segrave spells this out in response to the objection that Aristotle does not seem to attribute the fallacy of accident to insolubles:

> Finally, ⟨one can argue⟩ like this: if these paralogisms were to be solved by the fallacy of accident, then since it not likely that they passed unnoticed by Aristotle, he would have solved such paralogisms, where he does solve them, by the fallacy of accident. (§5.9)

Segrave responds:

> To the final argument: I say that where Aristotle solves the paralogisms by the fallacy of accident, he shows how to solve paralogisms of this kind, because they have the same defect, as was proved before ⟨in ch. 4⟩. For in insolubles the supposition of the middle or extreme term always varies; and this is to commit the fallacy of accident. Thus these paralogisms are similar to insolubles in which, since the middle term is a this-something, the extremes are not connected. For one argues like this in insolubles, just as here:
>
> > Coriscus is known by you, Coriscus is approaching, therefore the one who is approaching is known by you,
>
> for the term 'approaching' is taken, or at least should be understood, reduplicatively, and so the supposition of the extreme varies. (§ad 5.9)

Segrave recognises that to diagnose a fallacy or paralogism one needs not only to show that the reasoning involved is invalid; one must also show why it appears to be valid and so tempts people to commit the fallacy. Insolubles are so called, he says, not because it is impossible to solve them, but because solving them is difficult. Once again, he is here in agreement with Ockham and Bradwardine.[28] But he goes on to claim that insolubles are particularly difficult to solve since "having filled in the additional premises from which they derive their evidential force, they seem not to differ in any way from good syllogisms":

> For they have the same syntactic arrangement both in mood and figure, e.g.,
>
> > No falsehood is said by Socrates, this is a falsehood, so this is not said by Socrates.
>
> Therefore, since ⟨insolubles⟩ have the greatest causes of appearing ⟨to be good syllogisms⟩, which are just the same as those of a good syllogism, for

[27] See, e.g., Gelber, 'The Fallacy of Accident', §IV.
[28] See §1 above, and Bradwardine, *Insolubilia*, §2.1.

> this reason they are the most difficult to solve. Hence they are deservedly called insolubles *par excellence* because of their outstanding argumentative strength. (§1.1)

He explains:

> ⟨An insoluble⟩ commits the fallacy of accident because by arguing like this:
>
> > This is said by Socrates and this is a falsehood, so a falsehood is said by Socrates,
>
> the term 'falsehood' supposits in the minor premise for something it does not supposit for in the conclusion. Similarly, in arguing like this:
>
> > No falsehood is said by Socrates, this is a falsehood, so this is not said by Socrates,
>
> there is a variation in the middle term because the term 'falsehood' supposits for one thing in the major premise and another in the minor, according to those advocating this solution. And thus it is clear that they have to solve these kinds of paralogisms according to the fallacy of accident, namely, from a variation of the middle term or of an extreme term. (§3.4)

Segrave supports this diagnosis with a brief discussion of supposition theory. Terms only have supposition in the context of a proposition, and (except in material supposition) supposit for what they signify—but often not for all their significates. For example, in

> A rational animal is a man

'animal' supposits only for men, not for all animals, because its range of supposition is restricted by adjoining the expression 'rational'. Indeed,

> To supposit for its supposita is to signify them to be the extremes of that union in reality which the copula signifies. They do this sometimes conjunctively, sometimes disjunctively, insofar as they receive a different mode of suppositing from what is adjoined to them. (§4.4)

The ground has now been laid for Segrave to solve the insolubles by the fallacy of accident. He illustrates his solution in part by responding directly to Bradwardine's extensive arguments against restrictivism.

8. The Manuscripts and the Edition

Segrave's treatise is preserved in three manuscripts, although one of these is acephalic and contains only half of the treatise:

E_4 = Erfurt, Universitäts- und Forschungsbibliothek Erfurt/Gotha, UB Erfurt, Codices Amploniani 4° 276, ff. 159ra–162ra, cursive hand. This

manuscript contains a collection of logical works, including chapters 6–12 of Bradwardine's *Insolubilia*.[29]

E_8 = Erfurt, Universitäts- und Forschungsbibliothek Erfurt/Gotha, UB Erfurt, Codices Amploniani 8° 76, ff. 21vb–34rb, mid-fourteenth century(?), Anglican hand. This manuscript contains other logical treatises (e.g., Bradwardine's *Insolubilia*) and physical writings by Walter Burley.[30]

O = Oxford, Bodleian Library, Canon. Misc. 219, ff. 1r–3r (acephalic, the text starting at the end of §ad 5.2). This manuscript dates from the end of the fourteenth century and consists of three parts;[31] the first part contains Segrave's insolubles along with Bradwardine's and the so-called Pseudo-Heytesbury's.[32]

We have established the Latin text using all three manuscripts; we have generally followed the readings of E_8, except where the readings of either or both E_4 and O were clearly preferable, for E_8 generally presents fewer obvious errors. In a few places, where all the manuscripts had mistaken (or apparently mistaken) readings, we have emended the text and listed the readings of the manuscripts in the critical apparatus. The critical apparatus records relevant variants, such as multiple- and single-word omissions, and also inversions of words or phrases. We have not noted the recurring cases in which one or two manuscripts have *ille* and the other(s) *iste* or vice versa, or where one or two manuscripts have *igitur* and the other(s) *ergo* and vice versa, nor differences in spelling between the manuscripts or what we thought were irrelevant scribal corrections. We have preferred to adopt the medieval manuscript spellings, including *e* for *ae*, and *Sortes* and *periurius* for *Socrates* and *periurus*. We have adopted modern (English) punctuation as the meaning of the text requires. The section headings and division into paragraphs are ours.

In translating the text, we have tried to stay as close as possible to the Latin text and to be as consistent as possible. In some cases, we have inserted words in ⟨angle brackets⟩ in order to make the translation more explicit and clearer.

[29] See W. Schum, *Beschreibendes Verzeichniss*, pp. 517–19.

[30] Digital facsimile of E_8 is available at: https://dhb.thulb.uni-jena.de/rsc/viewer/ufb_derivate_00016465/CA-8-00076_0048.tif. Pagination markers in the digital version of this edition provide links to the individual folios.

[31] A. Maierù, 'Le Ms. Oxford, Canonici misc. 219 et la "Logica" de Strode', pp. 98–103.

[32] The author of this anonymous treatise was dubbed "pseudo-Heytesbury" by Spade (*The Medieval Liar*, p. 35) because his treatise is so closely modelled on that of Heytesbury. See also Read, 'Theories of Paradox from Thomas Bradwardine to Paul of Venice', §4.