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INTRODUCTION

I

John Buridan was one of the most eminent philosophers and scientists of the fourteenth century, yet very little is known about his life with any certainty. He was a Frenchman, probably a native of Picardy. In 1328, and again in 1340, he was Rector of the University of Paris, so it seems likely that he was born towards the end of the thirteenth century. His death probably occurred in 1358 or not many years later. The best account of what has been established or conjectured about his life will be found in Faral [1949]. His reputation and influence as a thinker during his lifetime and until the sixteenth century appear to have been enormous, but in later times his works came to suffer almost total neglect. One might, indeed, almost omit the 'almost'; for it seems safe to say that to many generations of students of philosophy his name has brought no more to mind than 'Buridan's ass' – the donkey that starved because it was equidistant between two equally succulent bundles of hay; and yet no one has found this example in any of his writings. In recent years, however, his ideas, especially his ideas in logic and the philosophy of language, have begun once again to attract some of the attention that they deserve.

This revival of interest in him is not an accident, for many of the problems with which he and his contemporaries wrestled have, quite independently of their work, come to the fore again in our own century after a long period of comparative neglect. Among such problems are those that surround the semantic paradoxes of self-reference, and my initial idea for this book grew out of an interest in what Buridan in particular had to say about them.

The simplest of these paradoxes to state is the one commonly called the *Liar*, in which someone is assumed to utter the proposition 'What I am now saying is false'. The main problem here is, put briefly, this. If the proposition in question is true, then since what it asserts is that it itself is false, it seems to follow that it *is* false; but on the other hand, if it is false, then since that is just what it asserts, it seems to follow in turn that it is true. We therefore reach the apparently inescapable but quite intolerable result that it is true if and only if it is false. The problems raised by such paradoxes are grave and vexing, and although

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a great many solutions of them have been proposed, it seems safe to say that at no time has any of them won general acceptance. They are also profoundly disturbing, not least because they provoke nagging doubts about the very consistency of our notions of truth and falsity. One can ignore the paradoxes if one chooses, but one cannot in good conscience dismiss them as mere curiosities or trivialities.

What makes the proposition in the *Liar* paradox self-referential is the fact that it contains an expression ('what I am now saying') that refers to that very proposition itself. Similar problems, however, are raised when a proposition contains no such expression, but instead contains a reference to some other proposition which in turn refers to the original one (or to a third which refers to the original, etc.), and it is convenient to extend the term 'self-referential' to cover propositions of this kind as well. To distinguish the two kinds we can call them *directly* and *indirectly* self-referential propositions respectively. Buridan discusses examples of both sorts.

Some of the paradoxes of self-reference were formulated in ancient Greek times, and they have perhaps never been wholly ignored since then; but the two periods in which they have been most intensively worked on have probably been the fourteenth century and our own. By Buridan's day a large number of variants on the *Liar* theme had become current, as his own discussion bears witness; and some indication of the range of views canvassed at that time is given by the fact that Paul of Venice, writing at about the end of the century, prefaces his own solution with an outline of fourteen others with which he was familiar (see Bocheński [1961], pp. 238–51).

Mediaeval logicians gave the name 'insolubles' to paradoxes of the kind I have mentioned. Buridan refers to them as the 'so-called insolubles' (*vocata insolubilia*), perhaps because he thought he had a satisfactory solution for them. His fullest and most systematic discussion of them occurs in Chapter 8 of his *Sophismata*, where in Sophisms 7–12 he examines six in detail and mentions several others briefly. (He also deals with the topic, though much less elaborately, in his Commentary on Aristotle's *Metaphysics* (Book VI, Question 9), and there is a brief sketch of a solution in his *Consequentiae* (Book I, ch. 5); but these texts do not express his mature views, and I shall not discuss them in this book.) Put shortly, his contention is that all the paradoxical propositions in question are simply false: he accepts the standard arguments designed to show that if they are true they are false, but he gives reasons for rejecting the *prima facie* equally valid arguments for the converse. One major question, of course, is whether he can maintain all this

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consistently. In my opinion he can; but my reasons for thinking so will have to emerge as we proceed.

In the *Sophismata* Buridan sets his examination of the *Liar*-type paradoxes in the context of a wide-ranging and yet highly unified discussion of self-reference in general, which forms the theme of Chapter 8 as a whole. I have therefore taken that entire chapter, and not merely one section of it, as the topic of this book. I am well aware that by confining myself to this one chapter I am presenting the reader with a text that its author never intended to be read by itself. Nevertheless it can in fact stand on its own to a remarkable degree. It is true that it assumes a familiarity with certain background ideas, but these are ideas which a modern commentator, even if he were dealing with the complete work, would be under an obligation to explain to his readers in any case. Moreover, although Buridan no doubt expects us to have worked through the earlier chapters before coming to Chapter 8, there are in fact only two passages in them – one in Chapter 2 and another in Chapter 7 – to which he explicitly refers us back; and I summarize the arguments of the former later on in this Introduction, and those of the latter at the appropriate place in the Commentary.

In its overall structure the chapter falls into four clearly distinguishable sections. (A) Sophisms 1–6 deal with a miscellaneous group of problems which are concerned with self-reference but do not involve the insolubles proper. Their main themes are the conditions of the validity of inferences and the nature of propositions. Part of Buridan's purpose here seems to be to establish certain preliminary results to which he can then refer back briefly in the more complicated arguments that follow. (B) Sophisms 7–12 consist of discussions of six *Liar*-type paradoxes. (The *Liar* itself is Sophism 11.) These may conveniently be called *alethic* paradoxes. (C) Sophisms 13–15 form a group of paradoxes that involve the notions of knowing and doubting as well as those of truth and falsity. They may be called *epistemic* paradoxes. Finally (D) Sophisms 16–20 deal with paradoxes that occur in the context of action-directed activities or attitudes such as promising or wishing, and may be called *pragmatic* paradoxes.

Section (B) has an ingenious inner structure of its own. With the exception of the very brief Sophism 12, which is intended chiefly as a transition to the next group, each sophism in this section contains some point that is relevant to all the others, though we are often left to apply it to them for ourselves. Buridan seems to have felt – and if so his readers will have no difficulty in agreeing with him – that if he

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were to say immediately all he wants to say about Sophism 7, for example, the result would be too complicated to be readily understood, so he reserves some of his points for inclusion in his discussion of subsequent sophisms. The effect is therefore of a gradually unfolding panorama of argumentation; and if one is to understand his complete solution of any one sophism in this section one has to work one's way through them all, or at least the first five. I shall try to set out the details of all this in the Commentary.

The technique of expounding and defending a philosophical position by a discussion of 'sophisms' was a well-established one in Buridan's day, though it has now long gone out of fashion. A sophism, in the technical mediaeval sense of the word, is not a piece of fallacious or 'sophistical' reasoning. Briefly, it is a problem sentence or proposition, where it is possible to advance arguments both for its truth and for its falsity and we are expected to learn something by seeing how the arguments for one side or the other can be refuted. (Buridan sometimes uses the word 'sophism' narrowly to refer to the problem sentence itself, and sometimes more widely to refer to his whole discussion of it. This convenient ambiguity never seems to cause any confusion in practice, and I shall feel free to indulge in it myself.)

The basic or orthodox pattern of the discussion of a sophism is in five steps.

1. The sophism itself is formulated. This is accompanied, where appropriate, by the 'positing of a case' – i.e. the description of some situation in the light of which the sophism is to be considered – and a statement of the question to be discussed. Usually this question is whether, given the posited case, the sophism is true or false.

2. The arguments for one side (e.g. that the sophism is true) are listed, usually without comment on their validity.

3. The arguments for the contrary view are then similarly listed.

4. Buridan states his own opinion on the issue, either in a simple unadorned fashion or else accompanied by some argument or explanation.

5. Finally he presents a refutation of each of the arguments initially stated for the view he rejects.

Steps 1–3 can be called the *exposition* of the sophism, and steps 4 and 5 its *solution*.

This basic pattern can be discerned in nearly all the sophisms we shall encounter, and tracing it out is a great help in following the structure of the arguments; but it seldom occurs quite unmodified, since Buridan is always ready to introduce elaborations or variations as the case makes

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appropriate. For example, a general discussion of the issues raised by the sophism may be interpolated between steps 4 and 5, and the opposing arguments then answered in the light of this. Or the development of the argument may throw up a further problem which Buridan then proceeds to solve on its own before resuming the overall pattern; sometimes indeed this subsidiary discussion itself takes on the form of a sophism, so that we have a sophism-within-a-sophism structure. Or again, after having completed his solution of the problem as initially stated, he may propose an alteration in the originally posited case and raise the question whether the sophism would then still have the same truth-value as before. Another important variation, which does not occur in Chapter 8 but which he uses frequently in other chapters, consists in grouping together a number of closely-related sophisms, giving first the exposition of each, then a general discussion of the issues, and finally the solution of each sophism in turn; and then moving on to the next batch and dealing with them similarly. In these and other ways, what may seem at first to be a rigid and cramping structure can become, at least when handled by someone of Buridan's genius, a flexible and even imaginative instrument.

II

I shall now try to outline just as much of Buridan's theory of meaning and truth as is necessary for an understanding of the arguments in our text. I want to make it clear that I am doing no more than that, and that his full account of these matters is much more elaborate and subtle than will appear here.

The things that are true or false, at least in any sense of 'true' and 'false' with which Buridan thinks the logician should be concerned (see §6.0.1), are what he calls *propositions*. And a proposition, for him, can be briefly described as a meaningful sentence-token (i.e. a particular utterance or inscription), spoken or written with assertive intent. I shall elaborate this a little.

Firstly, a proposition is a sentence-token. This means that two physically distinct utterances or inscriptions, even if they consist of occurrences of the same words in the same order (as, for example, when you say 'The cat is on the mat' and I say 'The cat is on the mat'), count for Buridan as two propositions, not as one – assuming, that is, that they are propositions at all. He would say that they were *similar* or, to use a useful modern philosophical coinage, *equiform* propositions, but not that they were numerically the same. Very often, of course,

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two or more equiform propositions have identical truth-conditions, and then it is for many purposes a harmless and convenient looseness of expression, in which Buridan himself sometimes indulges, to speak of them as a single proposition; but sometimes their truth-conditions differ, and then he is scrupulously careful to distinguish them.

One important corollary of regarding propositions as sentence-tokens is that they are things that come into being and go out of existence, and that it is always a contingent matter whether a certain proposition (or indeed any equiform one) exists at a given time or not. Moreover, if a certain proposition does not exist at a certain time, then according to Buridan it cannot be either true or false at that time. It is easy to imagine, for example, that at a certain moment *t* Socrates is in fact sitting, but that no proposition equiform with 'Socrates is sitting' exists at *t*. Then it will be incorrect to say that 'Socrates is sitting', or any equiform proposition, is true at *t*; the most we can say is that if any such proposition had existed at *t*, it *would* have been true then.

Secondly, to be a proposition a sentence-token must be spoken or written with assertive intent. In so far as this requirement is meant to distinguish propositions, as indicative or declarative sentences, from, say, interrogative or imperative ones, which do not express a claim that something is, was or will be the case, it is self-explanatory. But Buridan also wants to insist that for an expression to count as a proposition it is not enough for it to be of a kind that *could* be used to make an assertion; it must actually be used assertively. Suppose, for example, that I say 'Ptolemy said that the sun moves round the earth': Buridan would refuse to regard the expression 'the sun moves round the earth' in that remark of mine as constituting a proposition at all, either a true one or a false one, since I am not using it to assert that the sun moves round the earth, or indeed to assert anything at all. The only proposition to be found in what I say is the one that is formed by my remark as a whole. Quite generally, in fact, he maintains that no part of a proposition is itself a proposition, though it is often convenient to speak of it loosely as such. Strictly speaking, he holds, all we are entitled to say about it is that it *would be* a proposition if it were used assertively on its own. For more on this theme see the Commentary on §4.3.1 on pp. 91–3.

The third requirement, that a proposition be a meaningful sentence, calls for more detailed explanation.

An utterance or inscription is not a proposition in virtue of its sound or shape, or even its grammatical structure, but only because it also has a certain *meaning*. Buridan stresses that it is purely a matter of

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convention what meaning any word or sequence of words has. The users of a language decide or agree to use words in certain senses, and they could always have decided otherwise. It is indeed always possible, and sometimes even convenient, for a group of people to decide to use certain words in a new way, or for an individual person to announce his intention of doing so. In this way it can happen that *one and the same proposition* can be true given the sense that I attach to it but false given the sense that you attach to it; and the same situation can of course also arise when words have well-established meanings but are ambiguous.[1] Buridan holds, however, sensibly enough, that when there are well-established and unambiguous conventions about the meanings of the words we are using, then in the absence of any explicit agreement or announcement of intention to depart from those conventions it is to be assumed that we are abiding by them, and our propositions are to be assessed for truth and falsity on that assumption.

Language, then, is a system of conventional written or spoken signs. Now we use words, according to Buridan, to express the thoughts or ideas – what he usually calls the *concepts* – that we have in our minds. In his terminology the words are said to *signify* the concepts they are used to express. This kind of signification, which is possessed by all meaningful words or sequences of words, he sometimes calls 'signification within the mind', to distinguish it from another kind of signification, 'signification outside the mind', which is possessed in addition by some meaningful words but not by all. A word has signification outside the mind when the corresponding concept is a concept *of*, or a concept that covers, other things of a certain kind. In such a case the word is said to signify 'outside the mind' the things that are covered by, or that fall under, the concept in question, and these things are said to be the *ultimate significates* of the word. For example, the ultimate significates of the word 'horse' – the things it signifies outside the mind – consist of all the actual flesh-and-blood animals covered by the concept *horse*, i.e. by the concept that is signified in the mind by the word 'horse' when it is used in accordance with our normal conventions. Words that have signification outside the mind are said to be *categorematic* words.

To avoid possible confusion it is worth noting that Buridan does not intend the phrase 'signification outside the mind' to suggest that

[1] We might put this by saying that the proposition is true for me but false for you; but this is a sense of 'true for me' which has no connection with the, to my mind, deplorable habit of saying 'That's true for me' to mean merely that one is disposed to agree with what has been said.

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the ultimate significates of the words that have such significates are always non-mental things; he uses it merely because they very frequently are. The concept corresponding to a categorematic word might, however, be a concept of things that are themselves mental in character, and in that case those mental things are the ultimate significates of the word, or (in spite of the awkwardness of the expression) what it signifies outside the mind. The word 'concept' itself would be a good example.

Contrasted with categorematic words are what are known as *syncategorematic* ones, whose function is to build up more complex verbal expressions out of simpler ones, and which signify (within the mind) concepts which are not concepts *of* other things but which have the role of building up more complex concepts out of simpler ones in an approximately analogous way. Thus syncategorematic words, like categorematic ones, have signification within the mind, but unlike them have no ultimate significates. Examples of categorematic words are 'horse' and 'white'; examples of syncategorematic ones are 'some', 'not' and 'or'.

(Buridan also recognizes words that are neither purely categorematic nor purely syncategorematic, but mixed in nature. An example is 'someone', where the corresponding concept contains both an element answering to the categorematic term 'person' and also an element answering to the syncategorematic term 'some'. But for our purposes we need not explore this matter any further.)

Among the various kinds of categorematic words there are two that are worth mentioning specially here. Sometimes the corresponding concept is a concept of a certain kind of *object*; 'horse' is an obvious example. In such a case Buridan insists that the ultimate significates of the word include all objects of the relevant kind, past, present and future ones. I think it is easy to see why he says this: not merely all the horses that there now are, but all that there ever have been or ever will be, fall equally under the concept *horse*, and we would not understand the word 'horse' in the way we in fact do if we did not regard it as applicable to Bucephalus and to the animal that will win the Derby in 2010 just as much as to the horses that are alive at the present moment. With some other categorematic words, however – and 'white' would be an example – the corresponding concept is a concept not of a certain kind of object but of a certain kind of *attribute* of objects. In such a case the ultimate significates of the word consist of all instances of that attribute, again past, present and future ones. This means that Buridan regards the word 'white' as signifying (outside the mind) not some

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abstract universal, and not a collection of white *objects*, but the whiteness that is found in Socrates, the whiteness that is found in this piece of paper, and so on and so forth. (It is not that he thinks that instances of whiteness *exist* independently of their possessors. It is only that our *concept* of an attribute as belonging to an object is a different sort of concept from our concept of an object itself; and the word 'white' signifies within the mind a concept of the former kind, not the latter.)

I have already remarked that the relation between a word and the concept it signifies is a conventional one. It follows that it is also at least partly a matter of convention what the ultimate significates of a categorematic word are. There is nothing conventional, however, about the relation between a concept and the things that fall under it. The point might be put in this way. It is within my power to decide that I shall henceforth use the word 'giraffe' to mean what I and others have hitherto used the word 'typewriter' to mean, and thereby that on my lips it will apply to typewriters and only to typewriters. The worst that will happen is confusion in communication with others, and even that will disappear if I can persuade them to join me in this new usage. But it would be absurd to suppose that I could make my present *concept* of a giraffe cover typewriters and only typewriters: any concept that covered precisely such things would *ipso facto* be a quite different concept from my present concept of a giraffe. Thus although what the ultimate significates of a categorematic word are depends on two relations – one between the word and the concept it signifies and another between that concept and the things that fall under it – yet only a single convention or decision is involved, that which links the word with the concept.

According to Buridan some concepts are simple and others are complex; and he would classify *horse* and *white* as simple concepts, and *dragon* and *white horse* as complex ones. The notion of a simple concept raises difficult problems which it is, fortunately, unnecessary to enter into at any depth for our present purposes. But when Buridan says that *horse*, for example, is a simple concept, I do not take him to be denying that when we think of a horse we think of an animal with a variety of distinguishable parts such as a tail, legs and a mane. Roughly, I take him to be claiming that this concept is not one that we have built up or fabricated by combining various other concepts that we already had, but rather one that we have acquired by abstracting the essential features of objects of a certain determinate kind

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that we have encountered. By contrast we have constructed the concept *dragon* out of previously given concepts such as *reptile*, *fire* and *breathing*, and formed the concept *white horse* by putting together the concepts *horse* and *white*.

If we now ask 'What are the ultimate significates of the expression "white horse"?' Buridan's answer is that these consist of all horses together with all instances of whiteness. This may surprise us a little at first: we might perhaps have expected him to say that its ultimate significates consisted only of white horses. Nevertheless I think it is not difficult to see why he says what he does here. He is not concerned with the question of what things we are talking about when we use the expression 'white horse' in a proposition (that question will arise under the heading of *supposition*, which we shall come to a little later on); he is concerned rather with the question of what we *understand* by the expression 'white horse'. Now we do not understand that expression unless we understand each of its component words; and we do not understand the word 'horse' unless we recognize that it applies to all horses, no matter what their colour may be, or the word 'white' unless we recognize that it applies to every instance of whiteness, irrespective of whether it occurs in a horse or in anything else. In general, indeed, the ultimate significates of a complex verbal expression consist of the sum total of the ultimate significates of all the categorematic words that occur in it.

Buridan warns us, however, that the degree of complexity of a verbal expression is no automatic indication of the degree of complexity of the corresponding concept. It quite often happens that we form a complex concept and then decide to use a single word to express it. We can, for example, form the concept of an animal with the head of a lion, the body of a goat and the tail of a serpent, but instead of using the long phrase 'animal with the head of a lion etc.' to express or signify this concept we can decide to use the single word 'chimera'. Then we have a simple verbal expression but a complex corresponding concept. Moreover, the ultimate significates of the word 'chimera' will consist of all the things that fall under the component elements of this complex concept; these will include all animals, heads, tails and so forth – but not, Buridan would insist, chimeras, since there are not, and indeed (he would say) cannot be, any such things. The case of 'dragon', mentioned above, is of course similar.

A proposition, as we have seen, is a conventionally meaningful sentence, and is therefore a certain kind of meaningful verbal expression.

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