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Buridan's Logic and the Medieval Logical Tradition

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Abstract and Keywords

The second chapter spells out Buridan’s conception of logic as a practical science, teaching us, as logica docens, to heed the valid rules of reasoning embedded in our logical practice, logica utens. The chapter also deals with the particular difficulties of Buridan’s approach, considering his idea of the radical conventionality of written and spoken languages, consisting of token-symbols that owe their meaningfulness to the natural representational system of the human mind. This is the fundamental idea that naturally leads to the nominalist conception of a mental language. On this conception, mental language itself is a compositional semantic system of naturally representative token-symbols, the singular mental acts of singular human minds.

Keywords: logica utens, logica docens, token-symbols, conventional representation, natural representation

Just as it does in modern analytic philosophy, logic has a central role in Buridan’s philosophy. As he remarks:

... we should note that dialectic (that is, logic) is rightly said to be the art of arts, by reason of a certain superiority it has over other arts, [namely], in virtue of its utility and the generality of its application to all other arts and sciences. Due to this generality, which it shares with metaphysics, it has access to disputations that concern not only the conclusions, but also the principles of all sciences. 1
This conception of logic was not unique to Buridan in the Middle Ages. In fact, his remark is a comment on Peter of Spain’s opening words of his Summulae Dialecticales, which in turn ultimately derive from a passing remark made by Aristotle in his Topics. In general, logic had been established early on in medieval curricula as the prerequisite for rational inquiry in any discipline. As the anonymous author of the twelfth-century tract named Dialectica Monacensis wrote:

As we are going to deal with dialectic, which is, as it were, the pathway to all the other arts, at the beginning of this treatise we provide the division of science.

... Science is divided into rational, natural and moral philosophy... Rational science is divided into three parts: grammar, rhetoric, and logic. Grammar teaches the proper arrangement of letters into syllables, syllables into words and words into expressions. Rhetoric deals with three kinds of causes, namely demonstrative, deliberative, and judicial. Dialectic deals with syllogism absolutely speaking, as in the Prior Analytics, and with its subjective parts, as in the Posterior Analytics, in the Topics, and in the Sophistical Refutations, while its integral parts are dealt with in the Categories and the Perihermeneias.

This description of the role of logic in the system of medieval learning, in addition to providing us with the conception of logic as a universal methodological tool, also presents a nice example of how the Aristotelian logical corpus was integrated into this system, and how the role of its individual books was conceived within the system. About two centuries later, Buridan still offers a very similar picture concerning the latter point:

Logic is in its entirety about arguments, their principles, parts, and attributes; therefore, we should consider in logic everything in its relation to argumentation. Thus, the division of logic is taken from argumentation. For logic is divided into Old Logic (Ars Vetus) and New Logic (Ars Nova). The Old Logic considers argumentation not in itself as a whole, but its integral parts, which are incomplex terms and expressions or enunciations. For incomplex terms are the remote parts of argumentation, whereas enunciations are the proximate parts. The remote parts, namely, incomplex terms, are discussed in Aristotle’s Categories, whereas the proximate parts, namely,
enunciations, are treated of in *On Interpretation*. But you should know that Porphyry prepared a book, *On the Five Predicables*, by way of an introduction, which is very useful for understanding Aristotle’s *Categories*. In addition, since Aristotle in the *Categories* very quickly passed over the last six categories, Gilbert of Poitiers prepared a special book dealing with those six categories to supplement Aristotle’s *Categories*, which he called *The Book of Six Principles*. Therefore, these two books, namely, Porphyry’s and *The Book of Six Principles* are taken to belong to the Old Logic; not as principal books, but as ones related and connected to the *Categories*. Why is this called the Old Logic, and the other the New Logic? One may reasonably answer that the matter of a thing precedes in time the thing that comes from it, and that which is earlier in time is said to be older. However, the terms and enunciations, which the *Categories* and *On Interpretation* deal with, are the material parts that make up argumentations. Therefore, they can be said to be “old” with respect to the whole argumentation, and this is why the part of logic dealing with them is called Old Logic. The New *Logic* is subdivided, because argumentation can be considered in itself as a whole in one way, insofar as it infers the conclusion from the premises, and in another, insofar as it proves the conclusion by means of the premises. In the first way it is discussed in the *Prior Analytics*, in the second way in the other books. But differently [in the different books]. Since the proof of a conclusion has to be from better known premises, a proof is sometimes from self-evident [propositions] or ones that are proven to be self evident, and then it is called a demonstration, which produces knowledge of the conclusion; and this [sort of proof] is discussed in the *Posterior Analytics*. Sometimes, however, a proof is from premises that are neither necessary, nor self-evident, but which are merely probable, and then the argumentation is called dialectical, which generates not knowledge, but mere opinion; and this [sort of proof] is discussed in the *Topics*. Sometimes the argumentation is sophistical, which appears to prove but does not; and this [sort of argumentation] is discussed in the *Sophistical Refutations*. 5
There are a number of noteworthy points in this passage, both in itself, and in comparison to the previous quote.

In the first place, both passages agree that logic focuses on reasoning (“argumentation” in the Buridan-passage, and “syllogism” in the other passage are used in the same, somewhat loose, sense), and that everything else that logic should consider in connection with reasoning is virtually contained in Aristotle’s books on logic. The first two books deal with the “integral parts” of reasoning, that is, the parts that make up any piece of reasoning, namely, propositions and their parts, their terms. The remaining books deal with the “subjective parts,” that is, the various kinds of reasoning, considered either with respect to their validity or with respect to their probative force.

Now this may indeed appear to be a comprehensive account of what logic is all about, but as Buridan’s remarks also indicate, medieval logicians did not think that Aristotle’s books contained all there is to logic. For in addition to Aristotle’s books, there were in the first place the two “supplementary” books, mentioned by Buridan here, of which the *Isagoge* in particular was very influential, because it served as the starting point of medieval discussions on universals. Buridan does not mention here even other important books he himself heavily relied on in his own systematic work on logic, the *Summulae de Dialectica*. Among these, in addition to commentaries on Aristotle’s books by Boethius, Themistius, and Ammonius, the short *(p.11)* logical treatises of Boethius on syllogisms and divisions and Cicero’s *Topics* were particularly influential.

However, these works still do not present the characteristically medieval logical doctrines that in systematic works on logic were contained in separate little treatises (the so-called *parva logica* = *small logical [treatises]*). These were sometimes attached to the treatises discussing the issues covered by Aristotle’s books as parts of systematic textbooks on logic, and sometimes published separately. These separate little treatises eventually gave rise to entirely new genres of logic texts, such as the treatises on the properties of terms, on syncategoremata, sophismata, sophistaria, obligations, or consequences. In fact, these treatises were usually distinguished as the “logic of the moderns” (*logica modernorum*) from the “ancient logic” (*logica antiqua*), comprising the books of the “old logic” (*logica vetus*) and the “new logic” (*logica nova*) described by Buridan in the earlier-quoted passage (which, despite Buridan’s speculative explanation here, were so-called for simple historical reasons). 8
But, given the abundance of this rich, original literature of the “modern logic” proliferating from the twelfth century onward, why do neither Buridan nor the twelfth-century author even mention it in their divisions of logic? The clue is already provided by Buridan’s remark concerning the books added to the Aristotelian corpus, but a more detailed explanation is offered by another anonymous author writing as late as the fifteenth century:

If the treatises listed earlier [namely, the treatises of *parva logica*] pertained to logic, then it would follow that Aristotle incompletely and insufficiently handed down logic to us, and it was without merit that he requested us to say thanks to him for providing us with a complete logic. The reasoning is proved with reference to the fact that he did not give us the knowledge of those treatises. We should reply [to this objection] in two ways. First, [by pointing out] that Aristotle did complete logic, as far as the being [esse] of logic is concerned. Nevertheless, some other little treatises may be added for its well-being [bene esse], explaining the principal treatises, and serving as their complements. We should say in the second place that even if Aristotle did not invent the logic that is provided here in itself and in the proper form of these treatises, he nevertheless did invent these treatises in their principles, for he laid down certain principles from which these treatises are in their turn elicited and derived. Therefore, he is said to have invented even these treatises in a way, namely, virtually, in their roots. Whence it is clear that we should (p.12) rather say thanks to Aristotle than to Peter of Spain, for the invention of the principles is a greater achievement; since in possession of the principles it is easy to add to and augment the rest, as the Philosopher says in bk. 2 of the *Sophistical Refutations*. 9

However, the typically medieval, deferential attitude toward authority expressed in this passage should not fool us into believing that medieval authors were not aware of their own originality, or they were uncritical toward their authorities. As we shall see in greater detail, Buridan, who deftly uses authoritative references when they squarely support his position, does not hesitate to engage in some “creative interpretation” when they do not, or even to brush aside some lesser authority, such as that of the author of *The Book of Six Principles*, when it directly conflicts with his doctrine. 10
Furthermore, Buridan wrote his *Summulae de Dialectica*, which was to become the primary textbook of *nominalist* logic at European universities for about two centuries, in the form of a running commentary on the enormously influential logic tract of the venerable *realist* master, Peter of Spain.  

However, for the purposes of his commentary, Buridan completely reorganized Peter’s treatise, and where Peter’s realist doctrine went against his own nominalism, he simply replaced Peter’s text with his own. As he remarks in his *Preface*:

> I have chosen to deal in particular with that short treatise of logic which the venerable professor master Peter of Spain composed a while ago, by commenting on and supplementing it. Indeed, occasionally I am going to have to say and write things that differ from what he has said and written, whenever it appears to me suitable to do so.  

In fact, Buridan uses Peter’s text to discuss *only* the traditional material of the *logica antiqua*, and even in those matters, he often revises the main text, or changes the doctrine in his comments. However, when it comes to the presentation of material pertaining to the *logica modernorum*, Buridan simply discards Peter’s text or supplements material missing from Peter’s discussion, and ends up commenting and expanding on his own summary account of his own doctrine, in place of the authoritative text. Nevertheless, despite all the liberties that Buridan takes in his treatment of his authorities, he never really comes across as arrogant.  

> On the contrary, his general tone is very cautious and reserved. He was obviously more concerned with nurturing and spreading his own innovative ideas through research and teaching than with picking fights over them.

(p.13) **2.1 Logic as a Practical Science**

Therefore, given the central role of logic in Buridan’s enterprise, it is worth considering exactly how he conceives of logic as a science. Commenting on Peter of Spain’s earlier-quoted remark on logic as the art of arts, Buridan has the following to say:

> Concerning the first section, we should note that a certain [other version of our] text has [the formulation]: ‘dialectic is the art of arts, the science of sciences ... etc.,’ but it is more correct to say only that it is the art of arts. For the names ‘art’ and ‘science’ are sometimes taken broadly, and sometimes strictly or properly. If they are taken broadly, then we use
them interchangeably, as synonyms; hence, taken in this way, in this description it would be sufficient to insert only one of these two names. Indeed, logic should not even be called the science of sciences, for this would indicate a certain excellence of logic with respect to [all] other sciences, which it cannot have with respect to metaphysics; in fact, metaphysics, rather than logic, should more truly be called the science of sciences, having access to the principles of all inquiries. But when the names ‘art’ and ‘science’ are taken strictly, then, in [accordance with] bk. 6 of the Ethics, there are five intellectual habits, or virtues, distinguished from one another, namely, understanding, wisdom, prudence, science [or knowledge: scientia], and art. Therefore, taken in this way, no such habit is at the same time art and science; in fact, logic thus understood is an art, rather than a science.

In his questions on Porphyry’s Isagoge, Buridan elaborates his point in more detail. There he also distinguishes between “science” in the strict sense, in which it applies only to a body of necessary, universal, theoretical knowledge, consisting of the conclusions of scientific demonstrations in the strict Aristotelian sense, from “science” in a broader sense. In the latter sense, the term applies not only to strictly theoretical but also to practical subjects, namely, subjects concerning things that are within our power to make or do (or to refrain from making or doing), and the knowledge of which is useful for achieving our ends in these activities. In this broader sense, the art of logic also deserves to be called a science, namely, a practical science, the possession of which guides us in our rational practice of forming and evaluating arguments.

In this connection, Buridan also draws the famous distinction between logica utens and logica docens, that is, logic-in-use and logical doctrine, only (p.14) the latter of which can be called an art or practical science, whereas the former embodies those operative principles that are spelled out by the latter. For of course logical rules are operative in all our rational activities, yet those rules in operation, without being spelled out and reflected on, do not constitute logical knowledge. In fact, as Buridan remarks, sometimes, as in the case of sophistic arguments, they lead to something contrary to knowledge, namely, deception.

But logical doctrine, the systematic body of knowledge concerning the universal, necessary laws of various forms of reasoning, is certainly a
science, even if not a theoretical one, such as metaphysics, mathematics, or physics. It is, rather, a practical science, which teaches us how to construct and evaluate our argumentations to achieve our desired ends with them, whatever those ends may be.

2.2 Token-based Logic, and the Conventionality of Natural Language

However, this conception of logic as a science gives rise to the following problem for Buridan. A science has to demonstrate universal conclusions. Therefore, apparently, it cannot concern itself with singular terms or propositions. 17 However, in logic we often deal with contingent, singular propositions, such as the proposition ‘Socrates is a man’ and singular terms, such as ‘Socrates’, because logic concerns itself with terms and propositions of all sorts. 18 Therefore, logic cannot be a science.

Indeed, quite paradoxically, although Buridan is trying to use his logical theory to show that we can have a consistent metaphysics without universal entities, logical theory itself seems to demand them. For in formulating our logical laws we often talk about terms and propositions as if they were abstract, universal entities, somehow remaining the same in all their individual instances. For instance, we talk about the term ‘Socrates’ as being a singular term, regardless of whether this term exists printed on this page or as uttered by Plato addressing his master. Apparently, we talk about this singular term as if it were a universal entity! However, can we possibly avoid this way of talking, that is, apparently referring to universal entities, in logical theory itself, if we are to formulate universal logical laws that equally concern the term ‘Socrates’ in all its instances?

(p.15) Buridan’s reply to his own objection provides a nice sketch of his consistently nominalist, “token-based” logic:

[In reply] to the fourth [objection] we concede that no science is of conclusions or premises consisting of personally suppositing singular terms, but [there] certainly is [some science] of materially suppositing 19 ones, for such conclusions and premises can be universal, indefinite, particular, or singular. I can certainly say “Every term ‘Socrates’ is a singular term”, and “Some term ‘Socrates’ is a singular term”, and “A term ‘Socrates’ is a singular term”, and “This term ‘Socrates’ is a singular term”. The first of these is universal, the second is
particular, the third is indefinite, and the fourth is singular. And the fourth is no more demonstratively knowable than this: ‘This man is risible.’ For just as this man will no longer exist after he perishes, and thus one cannot truly say of him that this man is risible, so this term ‘Socrates’ will no longer exist after it perishes, and it will not be true to say that it is a singular term, although another, similar one certainly is a singular term.  

So, when Buridan says that logic primarily studies arguments, their kinds, and their integral parts, he does not conceive of this enterprise as a study of some “abstract structures”—there is no place for such things in his nominalist ontology.  

It is always particular arguments, particular propositions, particular terms existing in their singularity that are considered in logic, although, of course, they are considered in a universal manner, insofar as we can state universal laws covering potentially infinite sets of such particulars. Indeed, this concerns not only items in our various spoken or written languages. After all, any item in any human language is meaningful only insofar as it is some expression of human thoughts. Thus, the same point also applies to items in our mental activities, namely, human concepts, which are expressed by these linguistic items. As Buridan remarks:

... every thing in the world is singular; this is what Boethius asserts by saying that everything that exists is numerically one and undivided. Indeed, in this way a genus is one singular term, insofar as it exists just as singularly in my understanding or yours, or in my voice or yours, as this whiteness does in this wall.

Because everything in the world is singular, every item logic considers is singular. It considers singular arguments and their constitutive parts in speech, in writing, and in the mind. Indeed, primarily in the mind. For the items constituting speech, namely, articulate sounds, or utterances, and the items constituting writing, namely, inscriptions, are not constituents of a language on account of their physical properties, because we can produce utterances and inscriptions of this sort at any time, which are nevertheless not constituents of a language, because they mean nothing at all. For instance, if I form the utterance ‘biltrix’, or I write down the corresponding inscription following the rules of the Latin alphabet, as I just did, I do not thereby form a constitutive part of a language (at least, certainly not of one I know), for this inscription and the corresponding utterance mean nothing to me. To be sure, given the physical properties of this thing, I
conveniently and easily can make it a part of our language, by giving it some meaning. Indeed, depending on my intention, I can introduce it in a number of different ways, in any grammatical category. I can make it into a noun, a verb, an adjective, a participle, even a simple preposition, or an entire proposition.

Buridan is very much aware of the consequences of this approach to the subject matter of logic. If logic is to be a universal, necessary science of particular utterances and inscriptions insofar as they constitute particular arguments of particular languages, then the obvious conventionality of the use of these particular utterances and inscriptions has to be taken into account in the construction and interpretation of logical theory. For given the conventionality of our written and spoken languages, and given the fact that the fundamental logical properties of particular items of these languages, such as the validity of arguments, truth of sentences, or reference of terms, are obviously dependent on their conventional use, changes in usage can easily alter these properties. Buridan provides a vivid illustration of this phenomenon in the following way:

... an utterance like ‘A man is a donkey’ can be true, namely, by positing that, by a deluge or by divine power, the whole of the Latin language is lost, because all those who knew Latin are destroyed, and then a new generation following them imposes by convention the utterance ‘man’ to signify the same as that utterance signifies to us now, and the utterance ‘donkey’ to signify the same as the utterance ‘animal’ signifies to us now. This case is possible. Therefore, nothing impossible should follow from positing it. But it does follow that this spoken proposition or [this proposition considered] as an utterance would be true, namely, ‘A man is a donkey’, for it would designate a mental [proposition] which is now signified to us by ‘A man is an animal’; therefore, it would designate a (p.17) true mental [proposition], and it would be subordinated to a true mental one. But a spoken proposition is said to be true because it is subordinated to a true mental one, (or false, because it is subordinated to a false one); therefore, it is not impossible that such [a proposition] be true. The ... conclusion is inferred that numerically the same written proposition which now is an impossible proposition can be necessary, for let the proposition ‘A man is a donkey’ be written in stone. This written proposition now is an impossible proposition; however,
if the language would change in the manner described before, namely, so that the term ‘donkey’ would then signify the same as ‘animal’ signifies to us now, while the stone and the writing on it would be preserved, then that written proposition would be a necessary proposition, for it would designate a mental proposition that is necessary.  

Given the radical conventionality of our written or spoken languages, the question necessarily arises: what can fix the representational function of these conventional marks, so we are able to formulate necessary, universal laws concerning their logical use?

Buridan explicitly raises this issue several times, especially in connection with the question of whether the sentence ‘Man is a species’ is true. Clearly, if in this sentence the subject term is taken in personal supposition, that is, if it is taken to stand for what the term ‘man’ in English is imposed to signify, namely, individual humans, then the sentence is false, since no individual human being is a species. By contrast, if the same term is taken here in material supposition, that is, if it is taken to stand for itself or for any other term of the same type, then the proposition is true, for of course any such term is a specific term, signifying individual humans in abstraction from their individual differences. However, which one of these two possible interpretations should we take to be expressed by this sentence properly speaking (de proprietate sermonis)? In general, what are the rules governing the proper interpretation of words, that is, the interpretation in which they are supposed to be taken by virtue of their proper meaning (de virtute sermonis)? Buridan explicitly discusses this issue at length both in his Summulae and in his question-commentary on Porphyry’s Isagoge. Because of its significance and lucidity, it will be useful to quote here the latter discussion in its entirety:

However, it appears to me that ... a phrase [sermo] does not have in an enunciation any proper force [virtutem] on its own, but from us, by convention [ad placitum]. Therefore, if we use a phrase in the way philosophers (p.18) and others normally use it, we do not do anything against the proper force of the phrase. Indeed, an utterance, at least an articulate one, certainly has the force and capacity that it can be imposed by us to signify what we wish and that, once it is imposed to signify, we can use it as we wish, whether significatively or materially; and in doing so we do nothing against the
force of the phrase. What is more, an utterance imposed to signify a certain signification is imposed in such a way that we can legitimately use it with the signification primarily and properly given to it, or according to a similar or metaphorical signification, indeed, even according to a signification contrary to its primary one, as when we want to speak ironically. In fact, such uses pertain to an utterance by virtue of its primary signification, and in relation to it; therefore, such uses are never against the proper force of a phrase. 25

In short, there is nothing illicit about improper uses of our words, for those improper uses are just as possible uses of a phrase as its proper use was in the first place. In addition, there are “normal” improper uses of our phrases (i.e., ones that are squarely within the norms of linguistically competent usage, such as metaphor, analogy, or irony), which even presuppose the primary, proper use. But if we can use our linguistic signs any way we wish, what is it that distinguishes some uses as “proper” and “primary” and others as “improper” and “secondary”? Is there any rationale for this “inegalitarianism” concerning the several, apparently equally possible uses of our words? Buridan continues his discussion by answering this tacit question:

We should note, however, that I do not want to deny entirely the customary manner of speaking, namely, that a phrase is sometimes taken in its proper force and sometimes it is not. For I say that this is an improper locution, but it can be saved, for in truth, although a phrase can be taken in several senses, nevertheless, one of those senses is reasonably called “the primary”, “the principal”, or “the proper sense”, whereas the other senses are called “secondary”, or “attributive”, or “improper”. For that sense is called “primary” and “proper” which accords with the signification primarily and principally imposed on the utterance. And that sense is called “secondary” or “improper” which accords with another signification connected [attributa] to the primary one by reason of similarity or some other relationship. For example, the word ‘healthy’ primarily and principally was imposed to signify an animal that is appropriately proportioned in its active and passive qualities for exercising well and pleasurably its vital functions. However, later on the name ‘healthy’ (p.19) was extended and transferred to signify urine, because it is
the sign of a healthy animal, and to food, because it makes an animal healthy and preserves it in its health. Therefore, the primary and proper sense is that according to which we call an animal healthy, and the secondary or improper sense is that according to which urine or that according to which food is called healthy. 26

Indeed, as Buridan observes in the continuation of his discussion, this distinction concerns not only the use of single words but also the construction of complex phrases or sentences:

Furthermore, it happens sometimes that an expression is not used in the proper sense even if the words [in it] are taken properly, for the words can be construed in different ways and in different orders, even if in speech or in writing they are ordered in the same way, as poets often change word order, as in saying “[An] animal is every man”. For the proper sense [of this sentence] would be expressed by construing words in the order in which they are uttered or written, and thus ‘animal’ would be the subject and ‘man’ would be the predicate, and the proposition would be false. But the improper sense would be the construal of ‘man’ as the subject, as if it were placed first, and of ‘animal’, as the predicate, and in this way the proposition would be true, and it would be equivalent to the proposition ‘Every man is an animal’ taken in the proper sense.

Therefore, in a syntactical construction, word order is crucial in determining the proper sense, although the proper sense may not be the intended sense, as is the case with a poetic reversal of word order relative to the word order properly expressing the intended sense. Now, a similar distinction needs to be made between the intended and the proper sense of words, while keeping in mind the proviso that of course there is nothing inherently illicit in diverging from proper usage. As Buridan continues:

Again, concerning the material and personal sense, it appears that the sense according to personal supposition is to be deemed proper with respect to the sense according to material supposition, and the sense according to material supposition is to be deemed improper. For the sense according to personal supposition pertains to an utterance according to the signification appropriately imposed on it, but the sense
according to material supposition does not, indeed, it is common to every articulate voice, whether it was imposed to signify by convention or not, that it can be taken materially in an enunciation. For just as I can say “‘lecture’ is a verb or a word of two syllables”, so I can say that ‘buba’ (p.20) is an utterance of two syllables. Moreover, just as I can say that ‘donkey’ is a conventionally significative utterance, so I can say that ‘buba’ is an utterance not yet imposed to signify by convention. Now, therefore, the principal question is going to be whether we should take expressions absolutely and without qualification in their proper sense, and whether we should accept or deny them in accordance with the proper sense. I reply at once that the force of an expression [virtus sermonis] never obliged us to do so, indeed, sometimes we are supposed to take expressions in the proper sense, and sometimes in improper, such as parabolic or ironical, senses, or in other senses, far removed from their proper sense. 28

So, although we can use any utterance and inscription in the way we wish, once it is conventionally instituted to signify somehow, that established signification is to be regarded as its proper, primary sense, and any other only as a secondary, improper sense. Nevertheless, there is no hard and fast rule that says that we should take the expressions of our spoken or written languages always in their primary sense, and that we should evaluate our propositions for their truth or falsity accordingly. On the contrary, sometimes we are obliged to take written or spoken expressions in their secondary, improper sense, if that is what is intended:

For example, if we read the books of our masters, such as Aristotle or Porphyry, we should take their expressions according to those senses according to which these masters imposed them, even if they are improper, and thus we should absolutely accept those expressions as true, for taken in those senses they are true. Nevertheless, we should note that they were stated according to those senses, and if they were taken in their proper senses, then they would be false. And if those who lecture on the books of these masters were to interpret their expressions otherwise than they believe they were stated by the masters, then they would be cantankerous and insolent, and not worthy of studying or lecturing on the books of philosophers. 29 Likewise, we should assert all expressions
of the Bible and the Gospels to be absolutely true, and take them according to the senses according to which they were stated and according to which they are true; and anyone doing otherwise would be mistaken and blasphemous, or perhaps heretical. However, we can certainly say of several of those expressions that they would be false, if they were stated and received in their proper sense. 30

Indeed, using narrow-minded literal interpretations may provide an easy way to debunk authority. In Buridan’s time, this was the tactic used (p.21) by religious zealots, like Nicholas of Autrecourt, to “expose Aristotle’s errors” in order to discourage the youth from the vain pursuit of the worldly wisdom of philosophy and to turn them toward religious life. In modern times, on the contrary, it has been often used by “enlightened intellectuals” to expose “the inconsistencies of the creation story,” either by deliberately ignoring or just not having a clue about the sophisticated allegorical interpretations provided by the theological tradition, which contains sometimes strikingly penetrating insights into such metaphysical issues as the nature of space and time.

Buridan concludes his discussion as follows:

Now, therefore, because of the usual way of speaking I say that we are allowed to use phrases the way we wish [ad placitum], as long as we do not take them according to false senses, and this is why we usually understand by ‘the force of a phrase’ [virtus sermonis], not properly, but conventionally [ad placitum], its proper sense. Therefore, when we say that a proposition is true according to the force of the phrase [de virtute sermonis], by this we should understand that it would be true for someone taking it in its proper sense. And when we say it is false according to the force of the phrase, by this we should understand that it would be false for someone taking it in its proper sense, although absolutely speaking it is true, for we are taking it in another sense, according to which it is true. And if we understood these words of ours differently, then we would understand them in the wrong way. Therefore, we should note that the same spoken proposition could be true to me and false to you, for a spoken proposition is true only because it designates a true mental one. So, the proposition ‘Man is a species’ stated by Porphyry is true to me, for I take it according to material supposition, and thus it designates
for me something true, since I receive it according to material supposition and thus it designates to me a mental proposition that is not false, but true, in my mind. But perhaps it is false to you, for you want to take it only according to its proper sense, according to which it designates to you a false mental proposition. 31

In view of this discussion, we can summarize Buridan’s position in the following way. Logic, being a science (albeit a practical one insofar as it seeks to know with regard to some practical end), has to demonstrate necessary, universal propositions concerning its primary subject matter, namely, reasoning, and whatever else it considers in relation to this subject matter. These universal conclusions, nevertheless, can only concern singular pieces (p.22) of reasoning (as well as their parts, and whatever else is related to them), because everything is singular. However, singular pieces of reasoning and their parts are nothing but singular items of some language, which is the necessary medium of reasoning. 32

Now any spoken language is but a system of singular utterances, while any written language is but a system of singular inscriptions. Moreover, it is obvious that any such utterance or inscription belongs to a language only insofar as it produces some understanding in the minds of competent users of the language, that is to say, insofar as it is meaningful at all. Therefore, any singular utterance or inscription is a part of a language only insofar as it is imposed to signify what is conceived by an act of understanding, a human concept, or to use the technical phrase of Ockham and Buridan, only insofar as it is subordinated to a concept.

However, concepts, the acts of understanding which render utterances and inscriptions meaningful, are just as singular as are the utterances and inscriptions themselves. In addition, the acts of imposition whereby we subordinate utterances and inscriptions to concepts are singular, voluntary acts. This renders the relation of subordination conventional and changeable from one occasion of use to the next. So, the correlation of these singular items, inscriptions, utterances, and concepts is to be established in a piecemeal way, by carefully evaluating which utterance or inscription is subordinated to which concept in whose mind, on which occasion of its use, in what context. Apparently, this conception should render the interpretation of linguistic signs a nearly hopeless guessing game and the formulation of universal logical laws impossible.
Of course, this is not the case. Individual linguistic signs, symbol tokens, come in types based on their recognizable similarities. Indeed, even if some tokens are not inherently similar, such as the upper- and lowercase letters of the alphabet (A, a, B, b, etc.) or different fonts or typefaces (a, a, a, etc.), we are trained early on to recognize them as similar. Obviously, the same applies to utterances at an even earlier stage, in a less formally educational setting, leaving much to our natural abilities to recognize phonemic similarities. Therefore, what primarily allows any sort of uniformity of interpretation is the fact that even if in principle any token of any type can be interpreted ad placitum at any time, tokens are interpreted in types. Once we specify the relevant variable conditions of interpretation, such as when, where, by whom, to whom, according to what intention, and so on a token is to be interpreted, then any token of the same type under the same conditions is to be interpreted (p.23) in the same way. That is to say, a rule that applies to a token in virtue of its interpretation as belonging to a given type under such and such conditions of its use applies to all tokens of the same type under the same conditions.

To be sure, Buridan never talks about tokens or types. This is modern terminology, which I bring in to summarize the gist of Buridan’s ideas. However, as we can see, Buridan does talk about the fact that any linguistic sign (whether spoken, written, or even mental) is a singular occurrence (which we call a token). He also talks about the fact that some of these are recognizably similar (thereby constituting what we would call a type), and about the fact that once we fix the variable conditions of interpretation, then talking about one token is equivalent to talking about all.

Buridan explicitly takes up this issue in the sixth question of his questions on Porphyry’s Isagoge, when he asks whether a proposition in which the subject term is taken materially is universal, particular, indefinite, or singular. In this question, Buridan provides some arguments to show that propositions with materially suppositing subject terms cannot be singulars, because of the fact that, in logic, we do have knowledge of such propositions, and this knowledge cannot be merely of singular propositions:

... Of singulars there is no scientific knowledge [scientia]; but there is scientific knowledge of the propositions ‘man is a species’, ‘animal is a genus’. This is clear, for we know that a proposition like ‘man is a species’ has always been true according to material supposition, whenever it was propounded, just as well as we know that a proposition like
'man is capable of laughter' has always been true; therefore, it is not singular.

Again, he who a thousand years ago said 'man is a species' in the material sense said something true, and he who now says 'man is a species' says something true without any new imposition of the word. Therefore, the term 'man' taken materially supposits for several things, and consequently it is a common term. The first consequence is proved: when I say 'man is a species' the term 'man' supposits for a term that exists now, otherwise it would not be true. And when [the proposition] 'man is a species' was uttered a thousand years ago, then the term 'man' supposited for a term that existed then, but the terms that exist now are other than those that existed then; therefore, etc. 34

Accordingly, Buridan concludes that a proposition such as 'man is a species' is indefinite, because its subject term is an undetermined common term that stands indifferently for any term similar in writing, in utterance, or in the mind to which those in speech and writing are subordinated. 35 But then this gives rise to the question of why we keep talking about the term 'man', or this term, when we explain what the subject term of this proposition stands for. Buridan explains this usage in the following way:

But then the doubt arises why we usually expound such propositions by saying “man is a species, i.e., this term ‘man’ is a species”, and “animal is a genus, i.e., this term ‘animal’ is a genus”, etc. I respond that we usually do so because in many such cases it holds that if a singular is true, then the universal is also true. Likewise, if a singular is false, then the universal is also false, as e.g. if the proposition “this term ‘man’ is a species” is true, no matter which one you point out, then the proposition “every term ‘man’ is a species” is also true. Moreover, if this is false: “this term ‘substance’ is a species”, then this is also false: “every term ‘substance’ is a species”; indeed, since this: “this term ‘substance’ is not a species” is true, no matter which one is pointed out; therefore, this is also true: “no term ‘substance’ is a species”. For this reason, our masters did not mind taking a singular in place of a universal. We should note, however, that this is not always the case, namely, that if the singular is true, then the universal
is also true. For example, although the term ‘animal’ is the predicate, pointing to this term in the proposition ‘man is an animal’, nevertheless, not every term ‘animal’ is a predicate, indeed, in the proposition ‘An animal runs’ this term is not the predicate, but the subject. 36

Therefore, no harm comes from talking about the term ‘man’ or the proposition ‘man is a species’. But we have to keep in mind that we can use these singular phrases in place of universal ones whenever we attribute to the referents of these singular phrases (namely, to the token-expressions they refer to) attributes that pertain to these token expressions insofar as they belong to a given type. For in those cases such singular attributions will be equivalent to universal ones concerning all tokens of the same type. Indeed, in a similar vein, it is entirely harmless, and does not go against Buridan’s nominalism, if we talk about tokens of the same type. However, we have to keep in mind that this locution is not used to refer to some abstract, universal “superentity” called type. This is just a comfortable way of expressing facts about a (potentially infinite) number of individual linguistic signs that are to be treated together because of their recognizable similarity (which we are trained to recognize as such). Indeed, in general, whenever we are talking about any sort of entities as being of the same type, we need not construe this locution as referring to such an abstract entity, which is somehow the same in all its distinct instances. Rather, this means that whatever is said of one token that is taken to be of a given type equally applies to another token that is (taken to be) of the same type, insofar as it is (taken to be) of the same type. 37 (It is a further issue, however, just what determines whether two singular entities are [to be regarded as] tokens of the same type; this question is discussed not in logic, but in metaphysics.) 38

Of course, in modern logical theory we are so used to talking about types rather than tokens that someone may even question all this apparently unnecessary fuss about tokens, as far logical theory is concerned. After all, Buridan’s nominalist concerns aside, it may seem that we should not really worry about tokens in logic, because logical rules are supposed to concern types anyway, if logic is to be a science.

However, this is not the case. Indeed, quite apart from Buridan’s nominalist biases, we should be concerned about tokens in logical theory as such. This is effectively shown by Buridan’s considerations concerning what may be called the “Reciprocal Liar”. 39 Consider the following situation:
• Plato says, “Socrates says something false.”
• Socrates says, “Plato says something false.”
• Robert says, “Plato says something false.”
• And they do not say anything else, while both Socrates and Robert think that Plato said something false, namely, that God does not exist. 40

On a type-based analysis, we have to claim that Robert and Socrates say the same thing, indeed, not only syntactically but semantically as well. They are making the same claim (namely, that it is false) about the same thing (namely, about Plato’s proposition), with the same words, used in the same sense with the same intention. Yet, Socrates’ claim is indirectly self-referential (because through referring to Plato’s proposition, which in turn refers to Socrates’ proposition, Socrates’ proposition refers to itself). Therefore, it asserts its own falsity (whence on Buridan’s analysis it is false). However, Robert’s claim referring to Plato’s proposition (which refers to Socrates’ proposition, which again refers back to Plato’s and not to Robert’s), is not self-referential. Therefore, it does not assert its own falsity (and so on Buridan’s analysis it is true). As Buridan puts it:

... we should say that without a doubt, Socrates’ proposition and Robert’s proposition are similar in utterance and intention of the speaker and (p.26) hearer alike, and yet they are not equivalent, because Plato’s proposition, of which both of them were speaking, is referring to [habet reflexionem super] Socrates’ proposition and not to Robert’s proposition. Therefore, Socrates’ proposition and Plato’s proposition along with the case entail that Socrates’ proposition is false, but they do not entail this concerning Robert’s proposition; indeed, that one is true. 41

Therefore, even if universal logical laws, as such, should concern types, it does not follow that, as a matter of principle, logic should only concern itself with types, for at least in some cases the purely logical features of distinct tokens of the same type, because of being distinct tokens, are different. Therefore, again as a matter of principle, and quite apart from Buridan’s nominalist convictions, logical theory should be primarily token-based.

Yet, this should not prevent the logician from formulating a number of type-based logical principles, as long as he takes the proper precautions concerning cases when token-differences cause significant logical differences. Indeed, it is not only singular tokens and the single occasions
of their use that need to be taken into account, but also several subtypes, constituted by improper but accepted usage, on certain types of occasion, maybe for a limited time, or in a specific context, as in the case of slang or stipulated usage: 42

Also, it commonly happens in obligational disputations 43 that the master stipulates that for the duration of the disputation the term ‘donkey’ should signify for the disputants precisely the same as that which the term ‘animal’ signifies for us when used in accordance with its common signification; and the respondent and the others agree. Then the proposition ‘A man is a donkey’ is true for them and is to be conceded by them, but a proposition similar in utterance would be totally false and impossible were it propounded outside of the context of such an obligation in the church of Notre-Dame to those there present. 44

However, once the appropriate contextual factors are duly specified, one should be able to formulate universal logical laws concerning types of expressions, provided that there is something that fixes the interpretation of all tokens of the same type under the same sorts of contextual conditions.

Notes:

(1.) Buridan, J. *Summulae de Dialectica*, an annotated translation with a philosophical introduction by G. Klima, New Haven, CT: Yale University Press, 2001, 1.1.1, p. 6 (henceforth “SD”).


(10.) “We should note that concerning action and passion and the four other remaining categories I do not intend to follow the doctrine of the author of *The Book of Six Principles*. For I think that he was mistaken, since he believed that no terms that pertain to diverse categories can supposit for the same thing, and so he maintained that action is one form and passion is another, and that passion would hence be an effect of action; this is totally false, and thus his doctrine made many people err.” SD 3.6.1, p. 193.
Anonymi Fragmentum vulgo vocatum ‘Liber Sex Principiorum’, in Aristoteles


(12.) SD, p. 4.

(13.) See, however, Buridan’s Quaestiones in Praedicamenta, ed. J. Schneider, Munich: Verlag der Bayerische Akademie der Wissenschaft, 1983, pp. 129, 149, 145, in which at one point he exclaims that the teachings of the Liber Sex Principiorum are strong enough to kill dogs! To be sure, this uncharacteristically bold remark may reflect the general attitude toward this work by Buridan’s time (but it probably still had the effect of making him appear “cool” in the eyes of his students).

(14.) Aristotle, Ethics VI, 3. 1139a15–1139a17.

(15.) SD 1.1.1.

(16.) QiPl, qq. 1–2, pp. 124–133.

(17.) QiPl, q. 1, p. 125.

(18.) In medieval logic, the term ‘proposition’ is used in a sense in which modern logicians would talk about “sentence-tokens”. The modern philosophical understanding of “proposition” as referring to some “abstract entity” expressed by a sentence would be closest to some medieval philosophers’ understanding of what they would call an enuntiabile, and what others, especially after Gregory of Rimini, would call a complexe significabile. For the history of these terms and the related conceptions, see Nuchelmans, G. Late-Scholastic and Humanist Theories of the Proposition, Amsterdam: North Holland, 1980. I will take up the issue of complexe significabilia in discussing Buridan’s theory of propositions. Throughout this book, however, I am going to use the term ‘proposition’ in the way Buridan uses propositio, as referring to single sentence-tokens of concrete spoken or written languages (or even of “mental language,” that is, single acts of judgment of human thought denoted by the corresponding spoken or written sentences).
(19.) The verb-coinage ‘supposit for’ is the nowadays widespread rendering of the medieval Latin technical term *supponit pro*, indicating the semantic function of a term in a proposition of standing for what the proposition is about. The medieval theory of *supposition* was designed precisely to describe the various ways terms can be used in this function in various propositional contexts. Among the many refined distinctions provided by this theory (which will be discussed later in detail), the most fundamental one exploited by Buridan here is that between *personal* and *material* supposition. In Buridan’s interpretation, a term is suppositing personally when it stands for what it signifies, whereas it supposits materially when stands for itself or any other token term of the same type.

(20.) QiPI, q. 1, p. 128.

(21.) To be sure, even though there was general agreement on the point that logic primarily concerns itself with argumentation, there was controversy among medieval authors over exactly what sorts of entities would constitute this subject matter. See, for example, Pini, G., *Categories and Logic in Duns Scotus: an Interpretation of Aristotle’s “Categories” in the Late Thirteenth Century*, Studien und Texte zur Geistesgeschichte des Mittelalters, Bd. 77. Leiden: Brill, 2002, pp. 32–36.

(22.) QiPI, q. 9, p. 158. Cf. “Again [Op1r3.2], our concepts exist in our intellect as singularly and distinctly from one another and from other things as colors and flavors do in bodies; although such concepts do not in themselves have extension or corporeal location, they certainly all exist singularly.” Buridan, J. *Questions on Aristotle’s De Anima*, in John Buridan’s Philosophy of Mind: An Edition and Translation of Book III of his ‘Questions on Aristotle’s De Anima’ (Third Redaction), with Commentary and Critical and Interpretative Essays, ed. J. A. Zupko, 2 vols., Ann Arbor, MI: University Microfilms International, 1990 (Ph.D. diss., Cornell University, 1989) (henceforth QDA3), q. 8. p. 296.

(23.) ‘Biltrix’ is one of the several standard examples of a meaningless utterance (along with ‘bu’, ‘ba’, ‘baf’, ‘buba’, etc.), which one can find in medieval commentaries on Aristotle’s relevant passage at the beginning of his *On Interpretation* and in the corresponding sections of medieval logical treatises.

(24.) SD, *Sophismata*, c. 6, *First Sophism*.

(25.) QiPI, q. 5, p. 143.
(26.) Ibid.

(27.) Ibid., pp. 143–144.

(28.) Ibid., pp. 144–145.

(29.) Cf. SD 4.3.2, p. 256. Buridan’s stance on the issue is particularly important in the context of the uproar over the teaching practices of some of his colleagues formally condemned in the university statutes of December 29, 1340. For detailed discussion and further references, see Zupko, J. John Buridan: Portrait of a 14th-Century Arts Master, p. 18ff.

(30.) QiPl, q. 5, p. 145.

(31.) Ibid.

(32.) Cf. “the task of logic is exercised in a disputation, which cannot take place without speech” SD 1.1.2. See also text quoted in n. 42 below. Note, however, that reasoning, that is, discursive thought, and especially disputation (which is reasoning between a respondent and an opponent), does not necessarily encompass all forms of thought, for there can be nondiscursive forms of thought, such as divine thought, which would not necessarily require some language (i.e., a compositional system of distinct meaningful units) as their medium.

(33.) QiPl, q. 6, pp. 146–149.

(34.) Ibid, p. 147.

(35.) Inscriptions are subordinated to concepts via utterances. In fact, Buridan treats the subordination of utterances to concepts analogously to the subordination of inscriptions to utterances. See SD 9.1, pp. 831–833.

(36.) QiPl, pp. 148–149.

(37.) Henceforth, I will refer to this stipulation concerning the way that I talk about types as the nominalist proviso concerning talking about types.

(38.) Very briefly, we can say that what determines belonging to the same type or kind, in the case of natural things of natural kinds, is the nature of these singulars (not necessarily distinct from the singulars themselves), whereas, in the case of artificial things, what determines this is our convention. Thus, for instance, two diamonds or two giraffes belong to the
same natural kind because of what they are, whereas two token words
printed in different typefaces or two vehicles are of the same artificial type
because of what we use them for and how we use them.

(39.) I am grateful to Calvin Normore for alerting me to this point. A
very similar motivation for a token-based semantics was presented by a
contemporary logician: Gaifman, H. “Pointers to Propositions,” in *Circularity,
Definition, and Truth*, eds. A. Chapuis and A. Gupta, New Delhi/Atascadero,


(41.) SD, *Sophismata*, c. 8, pp. 972-973.

(42.) Cf.: “We should briefly say that although there are propositions,
expressions, and terms that are mental, or spoken, or written, Aristotle
in this book only considered the spoken ones, because one has to deal
with disputation in logic. And also because to deal with the nature and
consideration of concepts is the business of the books *On the Soul* and
*Metaphysics*, it befalls to the logician to apply the words corresponding to
concepts in order to argue well and to speak properly. Therefore, every
name that is treated here is an utterance. But you will ask: how do those
names and verbs signify at will; at my will or yours? I reply that there are
nouns and verb signifying the same things in the same way to a whole large
community, as the Latin words do to all Latins, and Gallic words do to all
Gauls. And it is not in my power or yours to remove or change this common
signification, but it was in the power of the first impositor or impositors
of these languages, who gave these significations to these utterances at
their will. But even now several people who agree among themselves can
make up a language at their will for their own use, as is clear in the case of
those who speak slang. Indeed, even I, as we are discussing something or
I am teaching you, impose utterances to signify at will, as when I say that
let the major extremity be called a the minor b, and the conclusion c. For I
could say otherwise if I wanted.” Buridan, J. *Questiones longe super librum
(henceforth: QDI), lb. 1, q. 3, p. 16, ll. 4-23.

(43.) Obligational disputation was a highly regulated formal exercise
in dialectical sparring at the medieval university. For more on this topic,
see Yrjönsuuri, M. *Obligationes 14th Century Logic of Disputational Duties*,
Acta Philosophica Fennica 55, Helsinki: University of Helsinki, 1994;
Yrjönsuuri, M., ed. *Medieval Formal Logic: Consequences, obligations and

(44.) SD, Sophismata, c. 6, fifth conclusion, p. 932.