[QUESTION 1: WHETHER LOGIC IS A SCIENCE]

1. We ask whether logic is a science.

**It seems *not*:**

For a manner of knowing (*modus sciendi*)is not itself a science (*scientia*); logic is a manner of knowing. Therefore, etc. The major is evident by analogy: the manner of seeing is not sight. The proof of the minor is from Aristotle's *Metaphysics* II[[1]](#footnote-1) “It is absurd to seek at once both the knowledge and the manner of knowing it.” And this is explained [thus]: 'manner of knowing', i.e. 'logic[[2]](#footnote-2)'.

1. Again, in *Metaphysics* VI[[3]](#footnote-3) Aristotle divides the sciences into the mathematical, natural, and divine or metaphysical, and logic is contained under none of these.
2. Again, a science is from what is proper to it, just as a demonstration is according to Aristotle in *Posterior Analytics* I[[4]](#footnote-4); logic is from what is common[[5]](#footnote-5); therefore, etc.
3. **For the opposite:**

Knowledge (*scientia*)is the effect of a demonstration; But in logic, many things are shown by demonstration; therefore, etc.

1. Again, the following is per se: 'the logician is knowing' (*logicus est sciens*), therefore, logic is a science; for when the predication is *per se*, what holds for the particular also holds in the abstract.
2. **We must say that** logic is a science, for the things taught in it are concluded by demonstration just as in other sciences; therefore they are known (*sciuntur*), since “a demonstration is a syllogism effecting knowledge[[6]](#footnote-6)”. There are likewise in logic all the things required for demonstration: that is, a subject, [and] a datum (*passio*) demonstrable from that subject through a medium – that is, a definition.
3. But we must recognize that logic is considered in two ways[[7]](#footnote-7): one, as *teaching* (*docens*), and thus it proceeds from necessary and proper principles to necessary conclusions, and is a science; the other, as we *use* logic, applying it to those areas where it has use, and thus it is not from proper but common [principles] – as happens plainly in the natural [sphere], where Aristotle[[8]](#footnote-8) brings forth logical reasons that proceed from a common medium but do not, properly speaking, bring about knowledge.
4. **To the first[[9]](#footnote-9)** we say[[10]](#footnote-10) that the manner of knowing is not a special science; but it can be a common one.
5. **On the contrary:** if the following is true in any way “the manner of knowing is knowledge” then, since the predication is in the abstract, it will be [true] *per se* and in the first way. The consequent is false, therefore also the antecedent. The consequence is evident because every predication in the abstract is essentially true. The falsity of the consequent is evident because the predicate is not included in the notion of the subject.
6. Again, the manner of knowing is posterior to knowing; therefore, it is posterior to knowledge (*scientia*), for knowing is posterior to knowledge.
7. So we instead say that formally speaking, the minor[[11]](#footnote-11) is false.
8. <Or we could say that the major[[12]](#footnote-12) is false, since there is a true knowledge of the manner of knowing. Hence, the intellect understands the object about which it has knowledge; and again, it can acquire knowledge for itself of its act of understanding by reflection.>
9. For proof[[13]](#footnote-13) we can say that the the exposition ought to be understood materially; and thus, this predication 'the manner of knowing is knowledge' is true, since logic teaches the manner of knowing inasmuch as it treats of syllogism or argument, by which we have knowledge.
10. We could also say that if by 'manner of knowing' we understand 'logic', the copula ought not to fall between 'knowledge' and 'manner of knowing', but between 'to seek the knowledge' and 'to seek the manner of knowing it'. For to seek this is to seek the other concomitantly, just as to seek anything is to seek whatever is necessarily connected to it, even though [the search for] the one is not abandoned.
11. **To the second[[14]](#footnote-14)** I say that in that place, [Aristotle] is distinguishing real sciences; whereas logic is arational [science][[15]](#footnote-15).
12. **To the third[[16]](#footnote-16)** it is clear that logic discloses its properties (*passiones*) by its proper principles, though its use concerns common things[[17]](#footnote-17).

1. **Aristot.,** *Metaph*. II t. 15 (AL XXV2 39-40; α c. 3, 995*a* 14-15): “...and it is absurd to seek at once both the knowledge and the mode (*modus*) of knowledge”. [↑](#footnote-ref-1)
2. **Averroës,** *Metaph.* II com. 15 (f. 17*rb*): “And [Aristotle] said this because the logical art is in a way universal to all sciences, and in a way proper to each science. And man cannot be instructed in any art without knowing both what is universal and what is proper to it. And when he said this, he gave a very useful maxim, and it is as though a man would co-learn [logic] in connection with the other sciences. For then he will learn neither [the science] nor [logic], just as he said: 'for it is bad to seek some science and the manner according to which it is put forth'”. [↑](#footnote-ref-2)
3. **Aristot.,** *Metaph*. VI t. 2 (AL XXV2 117-118; **E** c. 1, 1026*a* 18-19): “Wherefore there will be three [kinds of] theoretical philosophy: mathematics, physics, theology...” [↑](#footnote-ref-3)
4. **Aristot.,** *Anal. Post.* I c. 9-10 (AL IV4 295-296; **A** c. 9-10, 76*a* 17-*b* 16). [↑](#footnote-ref-4)
5. **Aegidius Rom.,** *Anal. Post.* Prologue (ed. Venice 1520, f. 5*ra* D): “Inasmuch, then, as logic is considered as teaching (*docens*), and inasmuch as it brings forth necessary reasons in this manner (for not every necessary reason is a demonstration, but only that which proceeds from what is proper to a given discipline and engenders knowledge in us) the reasons it transmits to usas teaching and as handing on the art of demonstrating and syllogizing ought not be called demonstrations, unless perhaps we were to take 'demonstration' in a wide sense for 'any necessary reason': both because reasons of this kind proceed from certain common [notions]; and because they do not generate *knowledge* in all, but rather the mode of knowing...” [↑](#footnote-ref-5)
6. **Aristot.,** *Anal. Post.* I c. 2 (AL IV2 113; **A** c. 2, 71*b* 18-20): “I call a syllogism effecting knowledge a demonstration”; *Auctoritates Aristotelis* (ed. J. Hamesse p. 312): “A demonstration is a syllogism making us know what we know when we have a demonstration”. [↑](#footnote-ref-6)
7. Cf. **Lambertus de Latiniaco (Lambertus Altissiodorensis attr.),** *Summa logicae* c. 1 (ed. F. Alessio p. 5): For logic is a science teaching about all syllogisms... Likewise, the art of logic makes use of all syllogisms...” [↑](#footnote-ref-7)
8. **Aristot.,** *Physica* I t. 8 (AL VII1 9; **A** c. 2, 184*b* 25-185*a* 4) [↑](#footnote-ref-8)
9. Cf. n. 1 above. [↑](#footnote-ref-9)
10. **Robertus Kilwardby,** *Anal. Priora* (ed. Venetiis 1499 f. 1*ra*): “And so in the end it is doubtful for what reason we do not call the special sciences arts of invention and judgment, as we do logic. And we must say that it is unfitting to seek at once both the science and the manner of knowing it. Now the specific content [of a special science] determines the science itself, for which reason it will *not* determine the manner of knowing it. But the manner of knowing consists in finding (*inveniendo*) and judging, for which reason the manner of finding and judging need not be determined by any special science; and so it will be determined in logic, which is a common science”. [↑](#footnote-ref-10)
11. Sc., 'logic is a manner of knowing'; cf. n. 1 above. [↑](#footnote-ref-11)
12. Viz., 'The manner of knowing is not knowledge'; cf. n. 1 above. [↑](#footnote-ref-12)
13. Cf. n. 1. [↑](#footnote-ref-13)
14. Cf. n. 2 above. [↑](#footnote-ref-14)
15. Cf. **Duns Scotus,** *Metaph.* VI q. 1 n. 43: “We should know (*sciendum est*) that we should understand (*intelligendum est*) 'first' here as pertaining to real speculative science, which considers first intentions abstracted from real singulars and quidditative statements about these. By this we exclude logic, which is concerned with second intentions, which are not predicated quidditatively of any being of first intention”. [↑](#footnote-ref-15)
16. Cf. n. 3 above. [↑](#footnote-ref-16)
17. Cf. q. 2. [↑](#footnote-ref-17)