

William of Sherwood on Necessity and Contingency

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Plan of the talk

- ▶ Who is William of Sherwood?
- ▶ Why his work matters
- ▶ Some recap
- ▶ Modal sophisms and their solutions
- ▶ Modal rules
- ▶ Some reflections

Who is William of Sherwood?



Described by Roger Bacon as “much wiser than Albert [the Great]; for in *philosophia communis*, no one is greater than he” (*Opus tertium*, 1267)

- ▶ Born ca.1200–1205ish.
- ▶ Taught logic at Paris 1235–1250.
- ▶ Became Master at Oxford in 1250.
- ▶ *Introductiones ad logicam* and *Syncategoremata* written at Oxford.
- ▶ Died ca.1266–1272ish.

Why his work matters

- ▶ One of four “named” authors of logic textbooks 1250–1270.
- ▶ Most interesting/sophisticated/distinctive of the four.
- ▶ Mid 13th C: turning point in medieval logic, consolidation and expansion.
- ▶ Previous paper: Sophisticated view of modality and modal logic in *Introductiones*, influenced by Aristotle [7].
- ▶ This paper: Extending his account of modality and modal logic with what he says in the *Syncategoremata*.

Some recap: syncategorematic words (1)

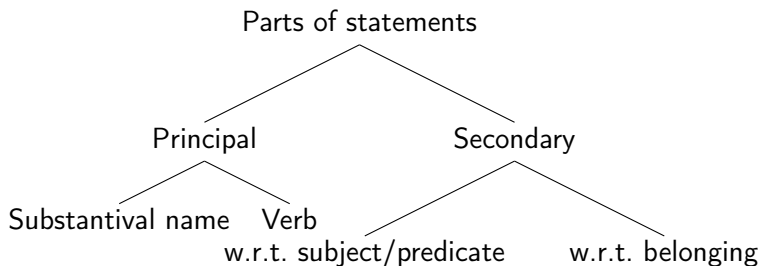


Figure: Sherwood's classification of parts of statements.

Some recap: syncategorematic words (1)

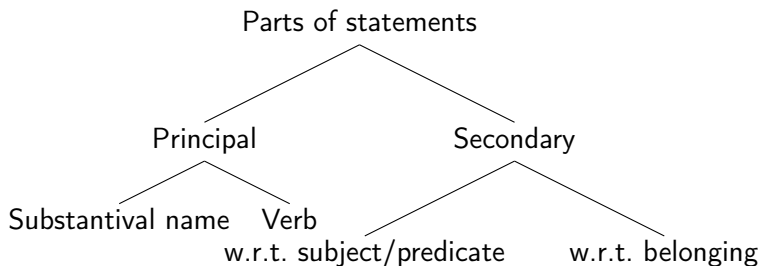


Figure: Sherwood's classification of parts of statements.

Example: *white cat* vs. *every cat*.

Some recap: syncategorematic words (2)

Definition (Syncategoremata)

A *syncategorematic word* or *term* is a secondary part of a statement which is a determination of the principal parts of the statement with respect to their being subjects and predicates.

'Necessarily', 'contingently', and other modal adverbs are syncategoremata.

Necessity and contingency as syncategoremata

More precisely, modal adverbs such as 'necessarily' can be used

- ▶ categorically: determining the verb it modifies “in respect of the thing belonging to it” [4, p. 101])
- ▶ syncategorically: determining it “in respect of the composition belonging to it, or insofar as it is a predicate” [4, p. 101]).

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Example:

The heaven moves necessarily. (1)

- ▶ Categorical reading: Assertoric sentence about how the heavens move — they move necessarily.
- ▶ Syncategorical reading: Attribution of necessity to the statement “the heavens move”.

The method of sophisms

- ▶ A sophism is a sentence which has two seemingly equally plausible analyses that lead to opposite conclusions.
- ▶ Medieval logicians used sophisms and their opposing analyses to distinguish good logical inference from sophistical inference.
- ▶ Root causes include conflation of the syncategorematic and categorematic use of terms and scope ambiguities introduced by distributives (including quantifiers) and exceptives.
- ▶ Sophism method: raise a particular sophism and then solve it, and from this deduce certain rules governing the use of modal adverbs.

Sophism 1

Sophism

The soul of the Antichrist will be necessarily [4, p. 101].

Proof.

Proof: The soul of Antichrist will have necessary being because at some time it will have unceasing, incorruptible being.

On the contrary, [the soul of Antichrist] will be contingently because it is possible that it will not be [4, p. 101]. □

Solution to Sophism 1

Sophism

The soul of the Antichrist will be necessarily [4, p. 101].

Solution: distinguish the categorematic use of 'necessarily' and the syncategorematic use.

- ▶ Taken categorematically, 'necessarily' determines what type of being Antichrist's soul will have, so the *probatio* is right.
- ▶ Taken syncategorematically, 'The soul of the Antichrist will be' is not necessarily true, so the *contra* is right.

Sophism 2

Sophism

Contingents necessarily are true [4, p. 102].

Proof.

Proof: 'Contingents are true' is necessary; therefore it will be true when it has been modified by the mode of necessity; therefore 'contingents necessarily are true' is true.

On the contrary, no contingents are necessarily true [4, p. 102]. □

Solution to Sophism 2

Sophism

Contingents necessarily are true [4, p. 102].

Contingents are true. (2)

is an indefinite sentence, and does “not determine whether the discourse is about the whole [of the subject] or about a part” [3, p. 29].

- ▶ Contingent sentences are sometimes true and sometimes false.
- ▶ (2) is not only true, it is also necessary, for if a contingent sentence was never true, then it would not be a contingent sentence, and this is true of any contingent sentence.
- ▶ Since the statement is necessarily true, we can add the modal adverb ‘necessarily’ to it, scoping over the entire sentence, and maintain truth. (Syncategorematic)
- ▶ If we take ‘necessarily’ categorematically, to modify the predicate ‘true’ only, then it is clear why the statement would be false: For no contingent sentence is necessarily-true.

Sophisms 3 (and 4)

Modal adverbs and exclusives ('only' *solus*, 'alone' *tantum*):

Sophism

Suppose that Socrates, Plato, and Cicero are running necessarily and that a fourth [man is running] contingently, and that there are no more [men]. Then only three men are running necessarily [4, p. 103].

Proof.

Proof: Three men necessarily are running, [and no others necessarily are running;] therefore only three [men are running necessarily].

On the contrary, 'only three men are running' is contingent, because when the fourth is running it will be false and when he is not running it will be true; therefore it will be false when it has been modified by the mode of necessity [4, p. 103]. □

Solution to Sophism 3

'Only' + modal adverb introduces a scope ambiguity.

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'Only' + modal adverb introduces a scope ambiguity.

Categorematic, narrow scope: 'only' modifies 'three men' and 'necessarily' modifies 'running':

Three men and no more than three men are necessarily-running. (3)

Syncategorematic, wide scope: 'only' still modifies 'three men' but 'necessarily' modifies the entire sentence:

Necessarily: Three men and no more than three men are running. (4)

Sophisms 5 (and 6)

Modal adverbs and distributive terms:

Sophism

Suppose that all men who exist now are running necessarily as long as they exist, and similarly with respect to future men. Thus every man necessarily is running [4, p. 104].

Proof.

Proof: 'Every man is running' is necessary; therefore it will be true when it has been modified with the mode of necessity.

Contra: But Socrates is a man, therefore Socrates necessarily is running [4, p. 104]. □

Solution to Sophism 5

Sophism

Suppose that all men who exist now are running necessarily as long as they exist, and similarly with respect to future men. Thus every man necessarily is running [4, p. 104].

This sophism is solved by introducing a distinction between whether the necessity ties to the universal statement that every man is running or whether it ties to all of the singular statements that are implied by this universal statement (e.g., “Socrates is running”, “Sara is running”, etc.).

General modal rules

Rule

Impossibility never follows from contingency.

Rule

Contingency never follows from necessity.

Rule

Any conditional with an impossible antecedent is necessary.

(used in the analyses of sophisms.)

Modal rules from the method of sophisms

Rule (illustrated by Sophism 2)

The word 'necessarily' can sometimes be a note of coherence and at other times a note of inherence [4, p. 102].

Rule (illustrated by Sophisms 3 and 4)

Sometimes there is an ambiguity in that the word 'necessarily' can include the word 'alone' or 'only', or vice versa [4, p. 103].

Rule (illustrated by Sophisms 5 and 6)

Sometimes ambiguity occurs in that the word 'necessarily' can either include a division or be included by it [4, p. 104].

Discussion

These rules are disappointingly banal, especially in the context of Kretzmann describing the *Syncategoremata* as “an advanced treatise”.

- ▶ Quite orthodox; nothing surprising.
- ▶ Rules shouldn't talk about “sometimes”.
- ▶ Don't seem to be very advanced principles, or have the feeling of something being discovered through the analysis of these sophisms. Everyone knows syntax is ambiguous.
- ▶ Rules are derived from the analyses as consequences of them, rather than the rules being stipulated in advance and then used to analyse the sophisms.

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So:

- ▶ What do we gain from identifying these principles and classifying them as logical rules, elevating them above other principles?
- ▶ Alternative Q: What did Sherwood and his contemporaries gain from going through these exercises?

The value in this exercise

- ▶ Analysing sophismata makes explicit the need to be precise about the interaction between modality and quantification.
- ▶ This unsystematic approach reflects the fact that language in discourse is fundamentally unsystematic.
- ▶ There is no way to survey all possible sophisms involving modal terms; but it is possible to highlight common problems and errors that people can make, and to provide rules for recognizing and avoiding those problems.
- ▶ By identifying types of sophisms and types of problems, and rules to deal with these, Sherwood makes it possible for us to extrapolate from these rules to novel situations.

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