

PHIL 6710: Epistemic Modality
Week 1

Relevant readings: von Fintel (2006), von Fintel and Gillies (2007, pp. 32-5), Kratzer (1977, pp. 337-43), Kratzer (1991, pp. 639-40).

Modal claims

1. We don't just make claims about what *is* the case, but also about what is *possibly* the case:
 - a. The keys are in the kitchen
 - b. The keys are possibly in the kitchen
2. That is, we make *modal* claims.
3. We won't lose much sleep over where to draw the line between modal and non-modal claims: 'John said that the keys are possibly in the kitchen.'

Modal force

4. We make claims of different *modal force*:
 - a. The keys are possibly in the kitchen
 - b. The keys are necessarily in the kitchen
 - c. The keys are {probably, likely, usually, often, certainly, apparently, supposedly, allegedly, perhaps} in the kitchen¹

We shall focus on the first two.

Ways of making modal claims

5. We have various ways of making the same modal claim:²
 - a. The keys are possibly in the kitchen
 - b. The keys might be in the kitchen
 - c. It is possible that the keys are in the kitchen
 - d. It is a possibility that the keys are in the kitchen
 - e. The keys can be in the kitchen
 - f. The keys may be in the kitchen
 - g. The keys could be in the kitchen

 - h. The keys are necessarily in the kitchen
 - i. The keys must be in the kitchen

¹ von Fintel and Gillies (2007).

² Kratzer (1977, 1981, 1991 sec 1), von Fintel (2006).

- j. It is necessary that the keys are in the kitchen
 - k. It is a necessity that the keys are in the kitchen
 - l. The keys need be in the kitchen
 - m. The keys ought (to) be in the kitchen
 - n. The keys have to be in the kitchen
6. So we make modal claims using expressions from various syntactic categories:
- a. *Auxiliary verbs*:
'may', 'might', 'must', 'can', 'could', 'should', 'have', 'ought', 'need'
 - b. *Adjectives*:
'possible', 'necessary'
 - c. *Nouns*:
'possibility', 'necessity'
 - d. *Adverbs*:
'possibly', 'necessarily', perhaps: 'perhaps', 'probably', 'certainly', 'apparently',
'supposedly', 'allegedly'³
 - e. Perhaps *suffixes*:
'-able', '-ible' ('The glass is breakable', 'Some thoughts are not expressible')
 - f. Perhaps *covertly*:
'This car goes 160 mph'⁴
 - g. Perhaps using *conditionals*:
'If the light is on, Sandy is home'⁵

One approach

7. Here is one way to think about how we make modal claims: a sentence that we use to make a modal claim contains an expression (typically a sentence) that we use to express a proposition (sometimes called the *prejacent* proposition), and an expression with which we modify this first expression and express a function from propositions to propositions, which maps this proposition to a new proposition.

This is particularly suggested by the following formulations:

- a. *It is possible that the keys are in the kitchen*
 - b. *It is a possibility that the keys are in the kitchen*
 - c. *The keys are possibly in the kitchen*
8. So on this approach, we use 'it is possible that', 'it is a possibility that', and 'possibly' as sentence operators to express functions from propositions to propositions.
9. Background on propositions and possible worlds.

³ von Stechow (2006)

⁴ Kratzer (1991)

⁵ von Stechow (2006)

10. In some cases there are tricky issues to do with tense and aspect:

- a. The keys might be in the kitchen
- b. Might(the keys be in the kitchen)

Question: does the tenseless ‘the keys be in the kitchen’ express a proposition?

11. This approach is not obviously right. Perhaps in ‘The keys are possibly in the kitchen’ we use ‘possibly’ to modify the predicate ‘in the kitchen’ to obtain a new predicate ‘possibly in the kitchen’, and we use ‘possibly’ to express a function from properties to properties.

Perhaps the sentence is ambiguous between the two.

But: ‘(Possibly) the keys (possibly) are (possibly) in the kitchen (possibly)’

Duality

12. It is typically claimed that ‘it is possible that’ (or ‘possibly’) and ‘it is necessary that’ (or ‘necessarily’) are *duals*, by which is meant that the functions they express, call them f and g , are duals, by which is meant that $f \equiv not \circ g \circ not$ and $g \equiv not \circ f \circ not$.

What this amounts to is that ‘it is possible that’ and ‘it is not the case that it is necessary that it is not the case that’ express equivalent functions, so that ‘it is possible that the keys are in the kitchen’ and ‘it is not the case that it is necessary that it is not the case that the keys are in the kitchen’ express propositions that have the same truth value (in every world).

Later we will see a possible problem for this idea.

Interaction with tense

13. We also modify sentences using the expressions ‘it was the case that’ and ‘it will be the case that’:

- a. It was the case that the keys are in the kitchen
(The keys were in the kitchen)
- b. It will be the case that the keys are in the kitchen
(The keys will be in the kitchen)

14. A question: why not the following?

- a. The keys are pastly in the kitchen
- b. The keys are futurely in the kichen

15. We sometimes modify a sentence by both a temporal operator and a modal operator:

- a. It is possible that it was the case that the keys are in the kitchen

- (The keys might have been in the kitchen)
- b. It was the case that it is possible that the keys are in the kitchen
(The keys might have been in the kitchen)
16. Notice that the more natural ‘The keys might have been in the kitchen’ is scopally ambiguous between the two readings. It has a reading on which the tense takes wide scope (Hawthorne (2007) calls this a *shifty* reading), and a reading on which it takes narrow scope. The two readings are truth-conditionally different. Sometimes it makes no truth conditional difference: if the operators are ‘it is possible that’ and ‘it is the case that’.
17. Hawthorne (2007, p. 99, fn. 5) claims that ‘The ball must have been under cup 1’ has no shifty reading – no reading on which the tense operator takes wider scope than the modal operator.
18. Sometimes an analogy is drawn between ‘possibly’/‘necessarily’ and ‘sometimes’/‘always’. ‘Sometimes’ and ‘always’ differ in their *temporal force*, and are dual operators.

Note that it is not clear that ‘sometimes’ and ‘always’ are temporal – perhaps we use them to quantify over *cases*, where cases can be times, but also many other things. This raises a question for later: can we use them to do the job of ‘possibly’ and ‘necessarily’, and if not why not?