

PHIL 6710: Epistemic Modality  
Weeks 3, 4 and 5

1. Last time we arrived at what I have been calling the *standard account*:
  - a. ‘Possibly S’ relative to a context C expresses, for some conversational background  $f$  determined by C, a proposition that is true at a world  $w$  iff the prejacent (i.e. the proposition expressed by S relative to C) is compatible with the propositions in  $f(w)$  (i.e. it is true in some world in which every proposition in  $f(w)$  is true).
  - b. ‘Necessarily S’ relative to a context C expresses, for some conversational background  $f$  determined by C, a proposition that is true at a world  $w$  iff the prejacent follows from the propositions in  $f(w)$  (i.e. it is true in every world in which every proposition in  $f(w)$  is true).
  - c. The kind of modality expressed (epistemic, deontic, logical, etc.) depends upon the kind of function that  $f$  is (perhaps not simply upon the kind of values that it takes).
  - d. We use phrases such as ‘for all we know’, ‘given what the regulations say’, etc., to explicitly specify  $f$ . Otherwise it is implicitly provided by the context.
2. We have a choice about what to say about modal operators such as ‘possibly’, ‘necessarily’, ‘might’, etc.:
  - a. They express 1-place functions from propositions to propositions, a possibly different function in different contexts (thus they are context-sensitive in the way ‘he’ is).
  - b. They express 2-place functions from proposition-conversational background pairs to propositions, the same function in every context (thus they are not context-sensitive, but sentences containing them are, in the way that sentences containing ‘ready’ might be).

Either way, for a given conversational background they determine 1-place functions from propositions to propositions which are duals of each other. Their duality follows from the duality of ‘every’ and ‘some’.

**Four problems addressed by Kratzer<sup>1</sup>**

3. *First*. Suppose that a father has *inconsistent* desires of his children. Then every proposition follows from his desires, and no proposition is consistent with them. So the standard account yields (incorrectly) that (on their relevant bouletic readings) the sentences in (a) express propositions that are true in his world, and the sentences in (b) express propositions that are false:

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<sup>1</sup> See Kratzer (1991, pp. 642-3). Also see Swanson (2008).

- a. You must {be in bed by 9pm, stay up until 10pm, drink beer before school} (all true)
- b. You may go to bed {before 9pm, at 9pm or later} (all false)

4. *Second.* The sentences in (a) below are scopally ambiguous between the readings in (b) and (c):

- a. If a murder occurs then the murderer must {go to jail, be knighted}
- b. If a murder occurs then **must**(the murderer {goes to jail, is knighted})
- c. **must**(if a murder occurs then the murderer {goes to jail, is knighted})

Assuming the material conditional account of ‘if’, the sentences in (b) are both true if no murder occurs, and the sentences in (c) are both true (because in every world in which the laws are obeyed, no murder occurs, and the conditionals are true). These seem to be the wrong results. (Note that this problem arises even if the laws are consistent.)

5. *Third.* We make the following sorts of claims:

- a. It is {barely, easily} possible to climb Mt. Everest without oxygen
- b. I might {just, easily} win the lottery

But compatibility is an all-or-nothing affair, so it is not clear how the standard semantics can accommodate such claims.

Note: Swanson (2008, p. 1199) claims that it is difficult if not impossible to construct examples of graded metaphysical, logical and nomological modality. Is this right?

6. *Fourth.* Kratzer claims that there is a sense in which the claim in (a) below is stronger than the claim in (b) (does she mean logically stronger?). But according to the standard semantics, (b) is stronger than (a).

- a. The keys are in the kitchen
- b. The keys must be in the kitchen

7. Here are some common claims about relative strengths (are they right?):

- a. S is stronger than ‘Possibly S’:
  - i. S entails ‘Possibly S’
  - ii. ‘Possibly S’ does not entail S
- b. ‘Necessarily S’ is stronger than S:
  - i. ‘Necessarily S’ entails S (we might say: it is *factive*)
  - ii. S does not entail ‘Necessarily S’

Note that if we assume that ‘possibly’ and ‘necessarily’ are duals then we can deduce (a) from (b) and (b) from (a).

## Kratzer's proposed fix: ordering sources<sup>2</sup>

8. Kratzer proposes that a context determines *two* conversational backgrounds: a *modal base* and an *ordering source* (both are functions from possible worlds to sets of propositions).
9. Suppose that a context  $C$  determines a modal base  $f$  and an ordering source  $g$ . At any given world  $w$ ,  $f(w)$  is a set of propositions, and this set of propositions determines a set of worlds: the worlds at which every proposition in  $f(w)$  is true. These are the worlds that are  $f$ -accessible from  $w$ .

$g(w)$  is also a set of propositions, and this set determines a partial order  $\leq$  on any set of worlds (in particular, on the worlds that are  $f$ -accessible from  $w$ ):  $w_1 \leq w_2$  iff any proposition in  $g(w)$  that is true at  $w_2$  is also true at  $w_1$ . Think of  $g(w)$  as a description of an ideal world, and  $w_1 \leq w_2$  iff  $w_1$  is at least as close to the ideal described by  $g(w)$  as is  $w_2$  – it is at least as  $g(w)$ -ideal as is  $w_2$ .

10. [A partial order is a binary relation  $\leq$  that is reflexive (for all  $x$ :  $x \leq x$ ), antisymmetric (for all  $x, y$ : if  $x \leq y$  and  $y \leq x$  then  $x = y$ ) and transitive (for all  $x, y, z$ : if  $x \leq y$  and  $y \leq z$  then  $x \leq z$ ). A *preorder* is a binary relation  $\leq$  that is reflexive and transitive. We really should be talking about preorders.]
11. Given this ordering on the worlds that are  $f$ -accessible from  $w$ , we can talk about the ones that are at the *bottom* of the ordering – i.e. the ones that are closest to the ideal described by  $g(w)$ , or that are most  $g(w)$ -ideal:  $\{w' : w' \text{ is a world } f\text{-accessible from } w \text{ and there is no distinct world } w'' \text{ which is } f\text{-accessible from } w \text{ such that } w'' \leq w'\}$ .
  - a. Note: these are worlds that are closest to the ideal described by  $g(w)$ , not to  $w$  itself.
  - b. Note: there may be no such worlds, but we'll ignore that (see Kratzer).

12. Then we can say:
  - a. 'Possibly  $S$ ' relative to a context  $C$  expresses, for some modal base  $f$  and ordering source  $g$  determined by  $C$ , a proposition that is true at a world  $w$  iff the prejacent is true in some most  $g$ -ideal world  $f$ -accessible from  $w$ .
  - b. 'Necessarily  $S$ ' relative to a context  $C$  expresses, for some modal base  $f$  and ordering source  $g$  determined by  $C$ , a proposition that is true at a world  $w$  iff the prejacent is true in every most  $g$ -ideal world  $f$ -accessible from  $w$ .
13. Note that if  $g(w)$  is the empty set, then  $w_1 \leq w_2$  for all  $f$ -accessible worlds  $w_1$  and  $w_2$ , so they are *all* most  $g(w)$ -ideal.
14. Swanson (2008, pp. 1199-1200) raises the following problem for Kratzer's proposal: it does not allow that the following can both be true: 'I must lie' and 'I must not lie'.

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<sup>2</sup> See Kratzer (1991, pp. 643-6) and Swanson (2008).

### How this helps<sup>3</sup>

15. *First problem*: the father with inconsistent desires. Take the modal base  $f$  to be empty function (i.e. for all worlds  $w$ :  $f(w) = \{\}$ ) (so all worlds are  $f$ -accessible from  $w$ ), and take the ordering source  $g$  to be the father's desires (i.e.  $g(w) = \{p: \text{the father desires } p \text{ in } w\}$ ). Suppose that in  $w$  the father has three desires: (i) that his kids are in bed by 9pm, (ii) that his kids will be philosophers, (iii) that his kids will not be philosophers. The worlds which are closest to the ideal described by his desires fall into two kinds: those in which (i) and (ii) are both true, and those in which (i) and (iii) are both true. Then we get the right truth values for the following:

- a. You must be in bed by 9pm
- b. You must drink beer before school
- c. You may be a philosopher
- d. You may go to bed after 10pm

See also another example Kratzer uses: 'In view of the relevant facts and your desires, you should go to the pub' (pp. 647-8).

16. *Second problem*: conditionals. Kratzer proposes that we think about conditionals in a different way: 'if' clauses act to restrict the accessible worlds, by extending the modal base. Suppose that an utterance of 'Necessarily S' in a context C determines a modal base  $f$ . Then an utterance of 'If S then necessarily S' in C determines a modal base  $f^+$ , where  $f^+(w) = f(w) \cup \{p\}$ , where  $p$  is the proposition expressed by S' in C.

Consider:

- a. If a murder occurs then the murderer must go to jail
- b. If a murder occurs then the murderer must be knighted

The ordering source  $g$  is such that  $g(w)$  is the set of laws in  $w$ . The modal base  $f$  without the 'if' clause is empty, but with the 'if' clause is such that  $f(w) = \{p\}$ , where  $p$  is the proposition that a murder occurs. So the proposition expressed by (a) is true in a world  $w$  iff in all worlds in which a murder occurs and which come closest to what the laws provide in  $w$ , the murderer goes to jail.

Suppose that in  $w$  there are two laws: (i) no murders occur, and (ii) if a murder occurs then the murderer goes to jail. Then the proposition expressed by (a) comes out true in  $w$ , and the proposition expressed by (b) comes out false (as desired).

17. Suppose that an utterance of 'If S then S' determines a modal base  $f$  and an ordering source  $g$ . Kratzer (p. 649) proposes that the proposition expressed is a:

- a. *material conditional* iff  $f$  is totally realistic (i.e. the one and only world of which all the propositions in  $f(w)$  are true is  $w$  itself) and  $g$  is empty

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<sup>3</sup> See Kratzer (1991, pp. 647-9).

- b. *strict conditional* iff  $f$  is empty and  $g$  is empty
- c. *counterfactual conditional* iff  $f$  is empty and  $g$  is totally realistic

18. *Third problem*: graded possibility. The ordering on the  $f$ -accessible worlds allows for graded possibility. See Kratzer (pp. 644-5) for details. Question: what if Swanson is right?
19. *Fourth problem*: strength. If we take the ordering source to be not empty, in such a way that in some world  $w$  the worlds that are compatible with what is known in  $w$  that are closest to the ideal do not include  $w$  (e.g.  $g(w)$  is the set of propositions that describe the normal course of events at  $w$ ), then (b) does not entail (a) – there are worlds in which (b) is true but (a) is false:
- a. The keys are in the kitchen
  - b. The keys must be in the kitchen

### **Necessary falsehoods**

20. It seems that some propositions that are metaphysically/logically impossible are epistemically possible:
- a. Someone knocks on the door. I am expecting Elton John to arrive at any minute, but it's actually not Elton John:
    - i. That might be Elton John
    - ii. He might be Elton John
    - iii. You might have been Elton John
  - b. A more convincing example:
    - i. Goldbach's conjecture might be true
    - ii. Goldbach's conjecture might be false

Since there are no possible worlds in which the prejacent propositions are true, all these modal claims come out false on the standard account.

21. Will appealing to ordering sources help? If not, maybe however we deal with this will obviate the need for ordering sources.
22. Maybe we can just allow that the worlds that are accessible to a world  $w$  can be metaphysically/logically impossible.

But then we might get that *all* claims of possibility come out true. 'You can murder' is true iff there is a world in which no one murders and you murder. Perhaps there is, if we allow metaphysically impossible worlds.

23. Note that maybe we don't get this problem on an account according to which 'Possibly  $S$ ' expresses a proposition that is true in a world  $w$  iff it is not known in  $w$  that  $p$  (the prejacent) is false, or iff  $p$  is not obviously incompatible with what is known in  $w$

(suggestions by De Rose (1991)). But then how do we extend to other kinds of possibility?

### Whose knowledge?<sup>4</sup>

24. Consider an utterance of ‘Possibly S’ or ‘Necessarily S’ in a context C. There seem to be cases in which the modal base  $f$  is such that  $f(w) = \{p: \text{the speaker in C knows } p \text{ in } w\}$ . Call these *solipsistic* uses (or readings):

An example from Kratzer: a man is approaching, you have a better view than I do. I truly assert ‘The person approaching might be Fred’, you truly assert ‘The person approaching cannot be Fred.’

Note that you and I might take ourselves to be in disagreement, which suggests that we are not using the sentences solipsistically. Presumably Kratzer is not thinking of such cases.<sup>5</sup>

Perhaps we can force solipsistic readings: ‘For all I know the person approaching might be Fred’, ‘For all I know the person approaching can’t be Fred.’

25. The relevant body of knowledge might be what the speaker in C *used* to have, not what she currently has. Why did you take your umbrella? Because it might have rained (the ‘shifty’ reading: past(possible(it rains))).

Can it be what the speaker *will* have?

Hawthorne (2007, p. 92) seems to think that these are problem cases for the standard account, but is that right? Perhaps we can take them to be cases in which a temporal operator scopes over the modal operator.

26. Are there cases in which the relevant body of knowledge is what someone *other* than the speaker knows?
- If there {might, must} be snipers in the foliage, clear the foliage with flame throwers.
  - A: Why is Suzy looking under cup 1? B: Because the ball might be under cup 1.  
(B knows that it is not under cup 1.)

Perhaps this is a case of *projection*: I am projecting my sentence into Suzy’s mouth, or acting as a mouthpiece for Suzy. Compare a non-modal case: A: Why is Johnny hiding under the bed? B: Because there is a monster in his cupboard. Or maybe these are cases of elliptical speech: ‘Because ~~Johnny believes that~~ there is a monster in his cupboard.’

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<sup>4</sup> For a good survey see MacFarlane (2006, sec. 1-3). Also see von Fintel and Gillies (2007, sec. 2-4).

<sup>5</sup> See von Fintel and Gillies (2008, pp. 78-9).

27. Egan et. al. (2005, p. 7) give a reason to think that the speaker's knowledge *must* be included in the relevant body of knowledge (that there is a *speaker-inclusion constraint*). When Jack eats pepperoni pizza he forgets he has 10 fingers, and thinks 'I might only have 8 fingers.' Jill sees Jack eating pepperoni pizza and says, 'He might have 8 fingers.' There is no reading on which this is true, and we would expect one if it could ever be that the speaker's knowledge is not included (is this similar to Andrew's example?). Try making it sound better: Why is he doing that? Because he might have eight fingers.
28. But here is a problem for the speaker-inclusion constraint: it would mean that we cannot report certain modal claims disquotationally, which is something that we often do:

A: The keys might be in the kitchen

B: A said that the keys might be in the kitchen

Compare:

A: **I** am a philosopher

B: A said that **I** am a philosopher

A: **He** is a philosopher

B: A said that **he** is a philosopher

29. von Fintel and Gillies (2007b, p. 5) argue that the solipsistic reading is not the only one available, for then it would never make sense to say 'I don't know whether possibly S,' but it can make sense.

They should be more careful: the speaker might not know whether or not the prejacent is compatible with what she knows. What they should say is: one can truly assert 'I don't know whether possibly S' even when one knows whether the prejacent is compatible with what one knows.

They appeal to an example from DeRose (1991, pp. 582-3):

John is suspected of having cancer, and has had a test that rules out cancer if it is positive, but otherwise leaves open the possibility. After the doctors have the results, but before Jane knows them, she might truly assert 'I don't know whether John might have cancer.' This is not explained by the solipsistic reading, which is: 'I don't yet know whether it is compatible with what I know that John has cancer' (because she *does* know that it is compatible with what she knows, setting aside skeptical issues).

Here is a variant example: 'Might the person approaching be Fred?', asked by the observer further away.

30. There seem to be cases where it is the knowledge of a *group* of people that is relevant, not just a single person (call these *group* readings):
- a. Given what we know, evolution looks pretty likely
  - b. For all they know, the keys are in the kitchen

31. This raises a question: how do we aggregate the knowledge? von Fintel and Gillies (2007, pp. 8-11) discuss this. Try: for each member of the group, must be compatible with what she knows. But then we lose the idea of a modal base. Try: take what everyone knows. But then ‘might’ claims are too easily true. Try: take the common ground (I don’t understand what this is). But then ‘might’ claims are still too easily true. Try: pooling the knowledge. This is what they suggest.
32. Here is a problem for the claim that there are group readings: they are too hard to assert.<sup>6</sup> Example discussed by von Fintel and Gillies (2007, sec. 4): Alex: ‘You might have left your keys in the car’; Billy: either ‘You’re right, let me check’ or ‘No, I still had them when we came into the house’. Solipsistic reading of Alex’s utterance is no good, even under the idea that Billy is targeting the prejacent. But Alex is in no position to assert the pooled reading. (They suggest it has *both* readings.)
33. *Eavesdropper cases*. An example from Hawthorne (2007, p. 92):<sup>7</sup>

Someone is on the way to the grocery store. I hear her say: ‘Susan might be at the store. I could run into her.’ I know that Susan is away on vacation. I am inclined to judge the speaker’s assertion to be false, and the speaker is inclined to agree.

This suggests that the relevant body of knowledge must include my knowledge. In fact, that it must include *everyone’s* knowledge (I could have been anyone), including Susan’s. But then, assuming that Susan knows whether or not she is at the store, the claim is true iff Susan is at the store, which is the wrong result. It also means that the speaker was in no position to assert what she did, but she was.

Note (this is important) that if the speaker is open to the possibility that Susan is on vacation then I am *not* inclined to judge her assertion to be false, and nor is she.

34. Something to watch out for: rejecting the prejacent as false, rather than the whole claim. Example from MacFarlane (2008, pp. 5-6):

A: It’s rumored that you are leaving California  
 B: That’s completely false!

35. How much do these problems for epistemic uses of modals generalize to other uses of modals?

### **Always knowledge?**<sup>8</sup>

36. Example from Hacking (1967, p. 148). The mate of a salvage crew makes a mistake in the calculation from an old log and declares that the wreck might be in certain waters. He

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<sup>6</sup> MacFarlane (2008, pp. 10-14).

<sup>7</sup> See also the discussion by Egan et. al. (2005, sec. 1-4).

<sup>8</sup> See Hacking (1967), Teller (1972), De Rose (1991), and the discussion in von Fintel and Gillies (2007, sec. 3.2).

later discovers by checking the log again that he was wrong – it couldn't have been there. But no matter which group we take and no matter how we aggregate their knowledge it is compatible with the knowledge of that group, and so he was *not* wrong.

Hacking and later De Rose suggest: what counts is what the group can *come* to know (Egan (2007): what is within their *epistemic reach*). But not just any old means counts. Hacking: it is *practical* investigations that count. DeRose: it is *contextually relevant* investigations that count.

But there are problems for each.<sup>9</sup> First, there are cases in which 'Possible S' and 'Possible not S' are both true, even though there is a practical way of finding out whether or not the prejacent is true. Example from Teller (1972): 'It might be a girl and it might be a boy'. Second, there are cases in which 'Possible S' and 'Possible not S' are both true, even though there is a contextually relevant way of finding out whether or not the prejacent is true. Example from von Fintel and Gillies (2007, p. 7): 'The keys might be in the car'. Checking the car is surely contextually relevant way of finding out, because the point of the assertion is to get someone to check.

MacFarlane (2008, p. 17) points out: The ship's mate might say: "It's possible that we shall find treasure here, and it's possible we shall find it farther south. Let's examine the log before we dive: maybe we can eliminate one of these locations."

37. I am deciding what to have for dinner. I say, 'I might have pasta, and/or I might have soup.' Is there anything especially epistemic about this? It would not be natural to say, 'For all I know, I might have pasta for dinner'; it would be more natural to say, 'For all I have decided, I might have pasta for dinner'. Maybe it can be claimed that this is not epistemic possibility, but rather 'decision' possibility.
38. John and I are playing a game of hide and seek with the keys. I have hidden them somewhere in the house. Before seeking he clarifies what the possibilities are:
  - a. Might they be in the kitchen? (Let's say: yes.)
  - b. Might they be in the garage? (Let's say: no.)

What do the answers to these questions depend upon? Someone's knowledge? Perhaps on the knowledge that John *will* have: it is compatible with what you will know that the keys are in the kitchen; it is not compatible with what you will know that the keys are in the garage. But then why would I say, 'No, they are not in the garage,' rather than, 'No, they can't be in the garage.'<sup>10</sup>

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<sup>9</sup> See discussion in von Fintel and Gillies (2007b, pp. 7-8).

<sup>10</sup> See Egan et. al. (2005) for a similar example.

## Evidentiality?

39. It is ok to say ‘It must be raining’ upon seeing people coming inside with wet umbrellas, but it is not ok while looking at the rain – one should say ‘It is raining’ instead.<sup>11</sup> Can we explain this in a way that is consistent with the standard semantics?
- a. Try: the former makes a weaker claim, and one should assert the stronger latter instead. Kratzer suggests how it might come out weaker if we appeal to ordering sources.
  - b. Does the former make a weaker claim? Here is a problem for this idea:<sup>12</sup> The ball is in A or in B or in C; it is not in A; it is not in B; so, it must be in C. No sense of weakness in the conclusion here. Also note:
    - i. It’s under C. In fact, it *must* be under C.
    - ii. It must be under C. In fact, it *is* under C.
  - c. They (von Fintel and Gillies) suggest: epistemic modals signal the presence of an indirect inference or deduction rather than of a direct observation. That is, they incorporate a kind of *evidential* meaning component – they are markers of *indirect evidence*. Evidential markers are expressions found in many languages that signal the source of evidence a speaker has for the prejacent claim. (What about non-epistemic uses?)  
  
Problem (which they discuss): when one reads in a book that so and so, it would be wrong to say ‘It must be that so and so.’
  - d. Note that there might be a problem here for the idea that ‘must’ is the dual of ‘might’: it is not ok to assert ‘it must be raining’, but it *is* ok to assert ‘it is not the case that it might not be raining’. What about ‘It can’t be not raining?’
40. It is also not great to assert ‘Possibly S’ when the prejacent is part of what one has to go on, on a solipsistic reading (it is ok on non-solipsistic readings).

## Other phenomena

41. Some curious facts:<sup>13</sup>
- a. Deontic uses of ‘ought to’ and ‘have to’ somehow differ in strength:
    - i. You ought to call your mother, but you don’t have to
  - b. Deontic uses of ‘should’ and ‘must’ differ as to whether one can admit that the right thing will not happen:
    - i. I should go to confession, but I’m not going to

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<sup>11</sup> This is discussed in Moore (1962, p. 188).

<sup>12</sup> von Fintel and Gillies (2007, p. 38).

<sup>13</sup> Discussed in von Fintel (2006). He claims that many of these facts have resisted systematic treatment.

- ii. #I must go to confession, but I'm not going to<sup>14</sup>
  - c. Deontic uses of 'may' scope inside negation, but epistemic uses scope outside:
    - i. He may not have any cake
    - ii. He may not be at home
  - d. English 'must' scopes outside negation, German 'müssen' scopes inside:
    - i. He must not have any cake
    - ii. He must not be at home
  - e. 'Can' does not easily allow an epistemic reading, but 'cannot' does:
    - i. Sandy can be at home
    - ii. Sandy cannot be at home
  - f. The following differ in whether or not they are scopally ambiguous:
    - i. Most of our students must get outside funding
    - ii. Most of our students must be home by now
  - g. A nonstative prejacent typically does not allow epistemic readings, while a stative prejacent does:
    - i. He has to see his doctor this afternoon
    - ii. He has to be in his office
42. An interesting question. 'Sometimes' and 'always' have non-temporal uses – they can be used to quantify over all sorts of *cases* (e.g. numbers). According to the standard account we use modal operators such as 'might' and 'must' to quantify over worlds. So can we use 'sometimes' and 'always' to do the same thing?:
- a. The keys might be in the kitchen
  - b. The keys are sometimes in the kitchen
  - c. If someone murders he must to jail
  - d. If someone murders he always goes to jail.
43. *And/or*. The following seem to be close in meaning:
- a. The keys might be in the kitchen {and, or} they might be in the bedroom
- This seems surprising on the standard account, because they mean (roughly):
- b. There is a world in which the keys are in the kitchen {and, or} there is a world in which the keys are in the bedroom.
44. *For all I know*. We need to think more about what we do with 'For all I know', 'For all John knows', etc. Compare:

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<sup>14</sup> Also see Swanson (2008).

- a. The keys are in the kitchen
- b. For all I know, the keys are in the kitchen

These express different propositions (can think of a case to show this). So we would expect the following to express different propositions as well:

- c. The keys might be in the kitchen
- d. For all I know, the keys might be in the kitchen

Indeed, that does sometimes seem to be the case: suppose I think the keys are either in the kitchen or the bedroom, when in actual fact they are nowhere to be found. Then (c) is false but (d) is true.

But we have been assuming that (d) is used to clarify which proposition is expressed by (c), not to express a different proposition. Is this wrong, or do we use 'For all I know' in two different ways?

And how do these two compare?:

- e. For all I know, the keys are in the kitchen
- f. The keys might be in the kitchen

45. Something to keep an eye on: *Moore's paradox*. There are cases in which we might be tempted to think that knowledge is involved in truth conditions, when really it is involved assertibility conditions:

- a. #The ball is under cup 1, but I don't know that it is.

It would be a mistake to conclude that it is a necessary condition on the ball being under cup 1 that I know that it is, as the following shows:

- b. The ball is under cup 1, but Wylie doesn't know that it is

An alternative explanation of (a): there is a norm of assertion which says: assert  $p$  only if you know  $p$ . So knowledge gets into the assertibility conditions, not the truth conditions.