

Performative uses and the temporal interpretation of modals*

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1 Introduction

1.1 Descriptive and performative uses of modals

Modal sentences can be used both to report and to bring about obligations and permissions.

Descriptive uses:

- (1) [Tax lawyer to client]
 - a. You have to declare this donation as income.
 - b. You must declare this donation as income.
- (2) [Tax lawyer to client] You may / can take this exemption.

Performative uses:

- (3) [Parent to child]
 - a. You have to be home by 7pm.
 - b. You must be home by 7pm.
- (4) [Parent to child]
You may / can have some ice cream.

Focus here: Necessity modals, as permission-granting raises orthogonal issues (*e.g.*, Lewis's (1979) 'problem about permission').

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1.2 Anti-performative modals

Observation: There are expressions with modal meanings that resist performative uses.¹

- (5)
 - a. You are obligated to be home by 7pm.
 - b. You are supposed to be home by 7pm.
 - c. You are obliged to be home by 7pm.
 - d. You are required to be home by 7pm.
 - e. You are under an obligation to be home by 7pm.
- The sentences in (5) can be used descriptively to report a pre-existing obligation.
 - But they are not well-suited as the original command that brings about the obligation.
 - I am going to refer to such expressions with a modal semantics that resist performative uses as **anti-performative modals**.

1.3 Two kinds of approaches to performative uses

'Pragmatic' approach (Kamp 1978, Schwager 2006, Kaufmann 2012)

- Modal declaratives always make claims about what is necessary/permitted.
 - where 'making a claim' = whatever is done with a garden variety utterance of a declarative sentence.
 - creating a discourse commitment / proposing to add to the common ground / ...
- When a speaker has the authority to command, then he can create an obligation by claiming that it exists.
- In so doing, an assertion of a modal claim can make the asserted sentence true.

Ambiguity approach (Kamp 1973, 1978, van Rooy 2000)

- Modals have two readings: One descriptive, one performative.
- The descriptive meaning results in the same dynamic effect as other declarative sentences.
- The performative meaning directly updates the addressee's obligations (the 'sphere of permissibility', Lewis (1979), van Rooy (2000)).

¹The issue of anti-performativity was brought to my attention by Igor Yanovich (p.c.), who made me realize that Csipak and Bochnak's (2015) observation that **be supposed to** apparently does not have performative uses generalizes to various other modal expressions.

- *Prima facie*, the pragmatic approach is very attractive.
 - It avoids stipulation of an ambiguity.
 - It allows us to maintain a uniform denotation type and dynamic effect for all declaratives, including modal ones.
- Also, at least one (recent, influential) account of imperatives takes imperatives to function as performatively-used modals do on the pragmatic account (Kaufmann 2012, formerly known as Schwager).

Why anti-performative modals are a challenge for the pragmatic approach

- Anti-performative modals like **be obligated to**, etc., usually get assigned the same kinds of meanings as **must** and **have to**.
 - Albeit with a more restricted range of 'modal flavors' (deontic only?).
- But then, the pragmatic approach predicts that they can be used performatively under the same contextual conditions as **must** and **have to**.
- But they cannot.

1.4 Goal and plot

Goal: Explore theoretical options for reconciling a pragmatic account of performative uses with the existence of anti-performative modals.

Plot:

- **Section 2** shows a way to block performative uses on the pragmatic account.
 - A range of independently plausible assumptions about the temporal interpretation of anti-performative modals ensure that performative uses are impossible.
- **Section 3** then asks how modals like **must** and **have to** are different, so as to allow for performative uses.
 - **Option 1** (Section 3.1): These modals have a more liberal temporal interpretation.
 - **Option 2** (Section 3.3): Performative uses work differently than previously assumed, but in a way that allows us to maintain the attractive features of the pragmatic account.

2 Blocking performative uses via temporal interpretation

Pragmatic accounts of performative uses have the following four features:

- On its performative use, a modal sentence 'Must(*p*)' denotes the same proposition as on its descriptive use, *viz.*, the proposition that *p* is deontically necessary.
- On a performative use, the speaker claims that this proposition is true
 - (*i.e.*, he commits to the truth of the proposition and/or proposes to add it to the conversational common ground in the sense of Stalnaker (1978)).
- In so doing, the speaker creates an obligation for *p*.
- Thereby, the proposition denoted by the modal claim is made true.

Claim: Given a few plausible assumptions about temporal interpretation, anti-performative modals will fail (iv), even when (i-iii) are true.

2.1 Some preliminaries

- Untensed sentences denote properties of intervals, construed as convex sets of (linearly-ordered) moments of time.
- The interpretation of (deontic) modals is stated in terms of a modality \Box^d , indexed to moments.
 - $\Box_m^d(\phi) \approx$ 'At moment *m*, ϕ is deontically necessary'.²
- Ontology that contains events as concrete particulars.
 - A function τ that maps each event to its 'run-time'.
- The domain of events includes utterance events, along with the events talked about.
- The denotation function $[[\cdot]]^u$ receives the current utterance as a parameter.

²How obligatoriness is cashed out is irrelevant for present concerns. For concreteness, assume that \Box_m^d universally quantifies over the set of worlds that are deontically ideal at moment *m*.

2.2 The six assumptions

Assumption I: Anti-performative modals are stative predicates.

Pick your favorite semantic representation of statives.

- Properties of intervals with the 'subinterval property'.
- Properties of Davidsonian eventualities.
- 'Kimian states' (Maienborn 2007).

For simplicity, I describe the interpretation of modal statives directly in terms of quantification over moments.

Assumption II: A stative predicate is true at an interval i if the state holds throughout i .

(*e.g.* Bennet and Partee 1972, Taylor 1977, Partee 1984, Ogihara 2007)

$$(7) \quad \llbracket \text{You be obligated to be home by seven} \rrbracket^u = \lambda i . \forall m \in i : \Box_m^d(\text{you-home-by-7})$$

Assumption III: A matrix present tense stative sentence requires that the stative predicate is true at the speech time s^* .

$$(8) \quad \llbracket \text{You are obligated to be home by seven} \rrbracket^u = 1 \text{ iff } \forall m \in s^* : \Box_m^d(\text{you-home-by-7})$$

where s^* is the speech time of u

Assumption IV: For any given utterance $u : s^* = \tau(u)$.

(*e.g.* Ogihara 2007)

$$(9) \quad \llbracket \text{You are obligated to be home by seven} \rrbracket^u = 1 \text{ iff } \forall m \in \tau(u) : \Box_m^d(\text{you-home-by-7})$$

In words: At all moments during the run-time of the utterance event u , it is deontically necessary that you be home by 7pm.

Assumption V: If a state of affairs s is a result of an event e , then s will not obtain before the final moment of $\tau(e)$.

- That is, if some state of affairs is the result of an event, the state will not obtain before the event is completed.
- Consequently, a resultant state will either temporally abut the run-time of the event, or overlap it in the final moment.

Assumption VI: On a performative use, the obligation is created as a result of the utterance of the modal sentence.

- That is, the utterance is truly performative.

Consequence:

- Assumptions V and VI directly imply that (9) would be false, even if the utterance u of **You are obligated to be home by 7pm** were to create the obligation in question.
- Because, for any non-final moment m' in $\tau(u)$, $\Box_{m'}^d(\text{you-home-by-7})$ is false.
- The obligation comes into existence 'too late' to make the denoted proposition true.
- So, self-verification is blocked for anti-performative modals.

- So, the world is once again safe for the pragmatic account.
- Except.

3 Revisiting performative uses

- Assumptions II-VI jointly imply that no present-tense stative sentence can be self-verifying.
- This turns the tables on the pragmatic approach.
 - It is no longer a puzzle why anti-performative modals do not have performative uses.
 - Rather, it is a puzzle why modals like **have to** and **must** do.

3.1 Viable Option I: Performative modals as non-stative

- Anti-performative modals ...
 - are true stative predicates;
 - hence, their temporal interpretation blocks self-verification;
 - hence, they don't have performative uses.
- Modals like **must** and **have to** ...
 - are not true statives;
 - they have a more liberal temporal interpretation, which is compatible with self-verification;
 - hence, they have performative uses.

- For example, suppose **have to** and **must** just require that the state of obligation overlap with the interval of evaluation, as in (10).
 - Might be due to a type difference, *e.g.*, anti-performative modals denote properties of Davidsonian eventualities, while **must** and **have to** denote properties of times, as in Condoravdi (2002).

(10) $[\text{You have to be home by 7pm}]^t = 1$ iff $\exists m \in \tau(t) : \Box_m^d(\text{you-home-by-7})$

- This would solve the problem of anti-performative uses rather elegantly.
- **But:** Remains stipulative, unless we can find independent evidence for the hypothesized difference in temporal interpretation.
- I have not been able to find such evidence.³

³E.g., no difference between (i-a) and (i-b).

Sidebar: Copular constructions vs. proper modals?

The examples of anti-performative modals I gave all involve copular constructions (mostly adjectival ones), while the performative ones do not:

- (5) a. You are obligated to be home by 7pm.
b. You are supposed to be home by 7pm.
c. You are obliged to be home by 7pm.
d. You are required to be home by 7pm.
e. You are under an obligation to be home by 7pm.
- On the view just considered, it is tempting to assume that this syntactic difference is responsible for the difference in temporal interpretation.
 - **But:** Not clear that anti-performativity correlates strongly with this syntactic difference.
 - Csipak and Bochnak (2015) claim that the German modal **sollen** is anti-performative.
 - Some adjectival modal expressions do seem to have performative uses, cf. (11).
- (11) a. You are now allowed to enter the building.
b. You are now permitted to enter the building.

Upshot:

- The class of anti-performative modals is not co-extensive with the class of modals that involves copular constructions.
- Makes 'Option I' even less attractive, as the difference in temporal interpretation would have to be a matter of lexical stipulation.

- (i) [Context: As long as one has a valid visa, it is not a problem if one's passport is expired—unless and until one leaves the country.]
- a. When John stepped over the border, he had to renew his visa.
b. When John stepped over the border, he was required to renew his visa.

3.2 A non-starter: Performative uses as non-performative

- Let us assume that the temporal interpretation of all modal expressions uniformly blocks self-verification.
- Can we still account for performative uses without assuming an ambiguity between a performative and descriptive meaning?
- Here is an idea that does not work. But it will be useful to contrast it with the one in the next section, which I claim does work.

The idea is this:⁴

- Maybe the intuition that it is the utterance that creates the obligation/permission is mistaken.
- Instead, the obligation/permission is created by a mental act of of an agent that has authority ('making up his mind' as to what is commanded/permited).
- The allegedly-performative utterance then only informs the addressee that this obligation/permission exists.
- On this view, performative uses are not truly performative—they are regular, descriptive uses.
- The 'timing problem' is avoided, since the speaker can make up his mind prior to $\tau(u)$.

However, this means the problem posed by by anti-performative modals is back (with a vengeance).

- On this view, it is a complete mystery why expressions like **be obligated to** cannot be used to report mentally-created obligations, while modals like **have to** can.

⁴Igor Yanovich suggested this possibility to me in conversation (without endorsing it). And the idea seems to be implicit in the version of the pragmatic account that Kamp (1978) considered (and criticized). Here is his sketch:

Suppose that *A* has authority over *B* and that this fact is common knowledge shared between *A* and *B*. Then *B* may be expected to react to *A*'s utterance: 'You may take an apple' with the reflection: 'It is up to *A* whether I may take an apple or not. Therefore he knows whether what he says is true or false. It may be assumed moreover that he is not saying what he knows to be false, as this would go against established principles of conversational propriety. So I may conclude that I have the permission to take an apple.'

(Kamp 1978, p. 275)

And there is another problem: This view falls prey to a challenge raised by Hans Kamp (1978, p. 275):

Kamp's challenge. "The problem with this explanation is that it doesn't go quite far enough. [...] Suppose *A* says to *B* 'You may take an apple', *B* then takes an apple, whereupon *A* berates him for doing so, claiming he had no permission to take an apple. In such a situation it is not just that *B* can excuse himself by pointing out that he was misled by *A*'s utterance. No, *B* can justly claim that he had the permission, in virtue of what *A* said to him. There are situations where *A* just cannot mislead *B* simply because his utterance constitutes the granting of the permission."

We may add that that this kind of account also fails to account for the fact that, intuitively, the utterance is necessary for creating the obligation or permission:

Interrupted communication. Suppose *A* and *B* are talking on the phone, *A* has authority over *B*. *A* makes up her mind that *B* should do something. She draws her breath, ready to utter the corresponding modal sentence. In that moment, the connection is cut off, which *A* notices, hence she does not say anything.

- On the account considered in this section, we are forced to say that *B* has an obligation in this case (he just does not know it).
- But it seems intuitively much more appropriate to say that *A* did not get a chance to impose the obligation, and hence that no obligation is in effect.

Summary: Assuming that allegedly-performative uses of modal sentences are really descriptive uses that report a mentally-created obligation ...

- reinstates the problematic prediction of the pragmatic account we started out with.
- fails to accord with the intuition that, it is the utterance itself that creates the obligation or permission.

3.3 Viable Option II: Performative uses as claims about preferences

We can have our cake and eat it, too.

- We can accept that modal sentences can never be self-verifying.
- But treat performative uses as truly performative, in the sense that it is the utterance itself that creates the obligation or permission.
- And we can do so in a way that predicts that anti-performative modals do not have performative uses.

What we have to give up:

- the assumption that performatively-used modals denote propositions about what is deontically required.
- Crucial inspiration comes from examples like (12) (after Condoravdi and Lauer 2009):

(12) [Parent to child]
I want you to be home by 7pm.

- (12) is a claim about the speaker's preferences.
- And yet, in the right context, an utterance of the sentence can create the same obligation that a performative use of a modal would create.

In the following, I take this observation as a starting point for an account of performative uses that meets Kamp's challenge.

3.3.1 A preference-reading for 'must' and 'have to'

- **must** and **have to** do not only have deontic readings.
- They can also express preference-related necessities.
- Here, I model this by a second necessity operator \Box^{Sp} .⁵

(13) ' $\Box_m^{Sp}(\phi)$ ' represents that ϕ is necessarily true if the speaker's preferences are optimally satisfied.

⁵See Condoravdi and Lauer (2015) for a Kratzer-style implementation of the \Box^{Sp} -reading. As we do there, I furthermore assume that the not all the speaker's preferences are taken into account, but only her effective preferences, in the sense of Condoravdi and Lauer (2011, 2012), Lauer (2013), Condoravdi and Lauer (2015). What matters for present purposes is that these are preferences that 'win out' against any conflicting desires the agent may have.

3.3.2 A commitment-based analysis of declarative force

- I assume the sentential force of declarative sentences is adequately represented by a specification of the commitments an utterance induces (Hamblin 1971, Gunlogson 2003, 2008, Beyssade and Marandin 2006, Farkas and Bruce 2010, Condoravdi and Lauer 2011, 2012, Lauer 2013, Krifka 2014, Farkas and Roelofsen 2015, Krifka t.a.).
- Commitments come in two kinds:
 - Doxastic commitments are commitments to treat a proposition as true.
 - * Represented by the operator PB ('public belief').
 - Preferential commitments are commitments to treat a proposition as desirable.
 - * Represented via an operator PEP ('public preference').

(14) DECLARATIVE CONVENTION

If a speaker Sp makes an utterance u of a declarative sentence with content ϕ he incurs the following commitment (where n is the final moment of $\tau(u)$):

$$PB_n(Sp, \phi)$$

3.3.3 Deriving the performative effect

Suppose that Sp makes an utterance u of (15), on its preference reading, and let n be the final moment of $\tau(u)$. By (14), this will result in the commitment in (16).

(15) You have to be home by 7pm.

(16) $PB_n(Sp, \forall m \in \tau(u) : \Box_m^{Sp}(\text{you-home-by-7}))$

'At n , Sp is committed to the belief that $\forall m \in \tau(u) : \Box_m^{Sp}(\text{you-home-by-7})$ '

Due to a number of independently plausible consistency constraints on commitments (spelled out in Appendix B), this means he also has the following commitment:

(17) $PEP_n(Sp, \text{you-home-by-7})$

'At n , Sp is committed to preferring you-home-by-7 to be actualized.'

The final ingredient is a suitable conception of what it is to have deontic authority:

(18) An agent a is a deontic authority with respect to p iff:

$$\forall m : PEP_m(a, p) \supset \Box_m^d(p)$$

If, in the context of u , the speaker Sp is a deontic authority with respect to you-home-by-7, then (17) implies (19).

(19) $\Box_n^d(\text{you-home-by-7})$

- This is the performative effect.
- The utterance publicizes a preference.
- Thereby, it creates an obligation.

3.3.4 Meeting Kamp's challenge

- We have just derived the performative effect.
- And we have derived it in a way that meets Kamp's challenge.
 - Because according to (18) the existence of the obligation is dependent on the public commitments of speaker.
 - Hence, the obligation will come into existence regardless of whether the agent has the preference he professes to have—all that matters is whether he is committed to having it.
 - it is the utterance itself that creates the commitment (and, therewith, the obligation), and it cannot fail to do so, in virtue of the DECLARATIVE CONVENTION and the consistency constraints on commitments.
- The present proposal accounts for the intuition that it is the utterance that creates the obligation.

3.3.5 Back to anti-performative modals

- Why, then, do anti-performative modals lack performative uses?
 - Because they are lexically constrained to express deontic necessities
 - That is, unlike (15), (20) only has the reading in (20-a), but not the one in (20-b).
 - Since performative uses proceed via an assertion with content (20-b), no performative use is predicted for (20).
- (20) You are under an obligation to be home by 7pm.
- a. can mean: $\forall m \in \tau(u) : \Box_m^d(\text{you-home-by-7})$
 - b. cannot mean: $\forall m \in \tau(u) : \Box_m^{Sp}(\text{you-home-by-7})$
- Anti-performativity is due, then, to lexical constraints on the kind of necessity a modal is compatible with.
 - Unlike on the option explored in Section 3.1, we do not expect a clean separation between copular constructions and others.⁶

⁶But we may expect tendencies. As Hacquard (2013) points out, 'lexical' modals (which include the adjectival ones) tend to be more constrained with respect to the kinds of modal backgrounds they combine with than 'grammatical' ones like **must**.

3.3.6 Graded anti-performativity

- The proposal is also compatible with the possibility that anti-performativity is not always categorical.
 - For **be under an obligation to**, performative uses seem to be categorically ruled out.
 - But it has been suggested to me (by Tom Wasow, Chris Potts and Dan Lassiter) that things may be different for other predicates, especially **be required to**.
 - (Important qualifications about this judgement: Appendix A.)
- (21) You are required to be home by 7pm.
- At least some speakers can imagine performative uses for (21), even though these seem definitely dispreferred.
 - We can make sense on this by assuming that, in addition to (or instead of) categorical lexical constraints on modal backgrounds, speakers have gradable preferences for particular construals.
 - Perhaps **be required to** is not strictly incompatible with a preference construal.
 - It is just biased against it.
 - Given enough contextual pressure, speakers may be able to overcome this bias, resulting in a performative use.
 - **Nota bene:** Even if all anti-performative modals are only biased against, rather than incompatible with, performative uses, all that has been said remains relevant.
 - For on the unamended Kamp/Kaufmann approach, graded anti-performativity is just as unexpected as categorical anti-performativity.
 - The anti-performative modals all are either categorically restricted to, or heavily biased in favor of, deontic construals.
 - If performative uses proceeded via a deontic modal claim, modals like **be obligated to** should not resist performative uses, but be biased in favor of them.
 - It is less clear how graded anti-performativity would be explained on the account explored in Section 3.1.

4 Conclusion

- If a pragmatic account of performative uses is to be viable, it ultimately must assume some semantic difference between anti-performative and modals like **must** and **have to**.
- This paper has investigated two possibilities for such differences in meaning.
 - **Option I** is that the two classes of modals differ in their temporal interpretation.
 - * Remains stipulative in the absence of independent evidence.
 - **Option II** is that they differ with respect to the kinds of modal backgrounds they combine with.
 - * Requires a significant revision to the pragmatic account.
 - * But this revision has desirable consequences.
- Independently from the issue of anti-performativity, this paper has demonstrated that two seemingly independent phenomena—temporal interpretation and performative uses of modals—are in fact intertwined, hence we can shed light on one by studying the other.

A Some complexities in the data

A.1 Verbal vs. adjectival passives

- In English, some of the examples I gave for anti-performative modal sentences have an irrelevant reading as a verbal passive of an explicit performative.
 - (22) a. You are (hereby) required to be home by 7pm.
 - b. I (hereby) require you to be home by 7pm.
- This reading may be disfavored (without **hereby**), but it exists.
- On this reading, the sentence can be used performatively.
- I assume that this verbal passive is semantically equivalent to the active form in (22-b).
 - The performative effect of this reading hence is accounted for on an account like that of Condoravdi and Lauer (2011), Eckardt (2012) (but see Močnik (2015) for important amendments).
 - That is, both (22-a) and (22-b) claim that there is an event that is a requiring event, and the utterance event itself serves as a witness for the truth of the asserted sentence.
- In German, the two readings are distinguished at the surface level.
 - Verbal passives are formed with the auxiliary **werden**.
 - Adjectival passives are formed with the auxiliary **sein**.
- (23) has a performative use, (24) does not.
 - (23) Sie werden dazu verpflichtet, am 23. vor Gericht zu erscheinen.
You **WERDEN** to required, on the 23. at court to appear.
'You are required (verbal passive) to appear in court on the 23rd.'
 - (24) Sie sind dazu verpflichtet, am 23. vor Gericht zu erscheinen.
You **SEIN** to required, on the 23. at court to appear.
'You are required (stative passive) to appear in court on the 23rd.'

A.2 'hereby'

- **hereby** can render anti-performative modal sentences as performative (and least for some speakers).
- For (some) English examples, we can assume that is simply because **hereby** forces the verbal-passive construal (cf. above).

- But for others, this cannot be right, *e.g.* **be under an obligation to**, cf. (25)
- (25) %You are hereby under an obligation to be home by 7pm.
- And in German, even the **sein**-version can be so used:
- (26) %Sie sind hiermit dazu verpflichtet, am 23. vor Gericht zu erscheinen.
 You SEIN hereby to required, on the 23. at court to appear.
 ‘You are hereby required (stative passive) to appear in cour on the 23rd.’
- These examples are somewhat degraded.
 - Regine Eckardt (p.c.) helpfully compares them to sentences like (27).
- (27) [Priest splashes water on a child’s head and says:]
 % Your name is hereby John.
- **Nota bene:** Without **hereby**, a performative use for (26) is excluded (or nearly so).
 - This contrasts with explicit performatives, where **hereby** is never necessary for the ‘performative effect’.

A.3 Coercion?

- On the account suggested in Condoravdi and Lauer (2011), **hereby** identifies the current utterance event and the eventuality talked about.
 - Similarly, in Eckardt (2012), **hereby** turns the current utterance into a claim about the current utterance.
 - On the account pursued here, a sentence like (26) would hence identify an event with a state (Condoravdi and Lauer) or apply a predicate of events to a state (Eckardt).
 - For this not to crash, some kind of aspectual coercion will have to occur, as in (28), on standard assumptions.
- (28) John reached the summit for three hours.
- Note that anti-performative sentences without hereby are not contradictory or involve a type mismatch (they are simply false on a performative use).
 - It is the presence of **hereby** that triggers the coercion.
 - Hence this approach would go some way to explaining why **hereby** is necessary to force the ‘performative reading’.

B The derivation of the performative effect in (some) more detail

B.1 Preliminaries

(This is an impressionistic sketch of the formal set-up, see Condoravdi and Lauer (2011), Lauer (2013) for the details.)

Preference-readings for modals Besides their deontic interpretation \Box^d , I assume that modals have a preference-related interpretation \Box^{Sp} .

- (29) ‘ $\Box_m^{Sp}(\phi)$ ’ represents that ϕ is necessarily true if the speaker’s preferences are optimally satisfied.
- Does not mean that modals are lexically ambiguous, instead we can take modals to be underspecified in the style of Kratzer (1981).⁷

Representing commitments Models represent the commitments of interlocutors, which come in two kinds.

- Doxastic commitments are commitments to treat a proposition as true.
 - Represented via an operator PB_m (for ‘public belief’).
 - Model-theoretically, assume there is a function that assign to each agent-time pair a set of propositions that the agent is committed to believe at the time.
- Preferential commitments are commitments to treat a proposition as desirable.
 - Represented via an operator PEP_m (for ‘public effective preference’).
 - Model-theoretically, assume there is a function that assign to each agent-time pair a set of propositions that the agent is committed to prefer at the time.

Consistency constraints on commitments (can be implemented as constraints on admissible models, cf. Lauer (2013, Ch. 5.3.2)).

- (30) If ϕ entails ψ , then for all a, m :

$$PB_m(a, \phi) \supset PB_m(a, \psi)$$

⁷See Condoravdi and Lauer (2015) for a Kratzer-style implementation of the \Box^{Sp} -reading. As we do there, I furthermore assume that the not all the speaker’s preferences are taken into account, but only her effective preferences, in the sense of Condoravdi and Lauer (2011, 2012), Lauer (2013), Condoravdi and Lauer (2015). What matters for present purposes is that these are preferences that ‘win out’ against any conflicting desires the agent may have.

(31) For all moments m , agents a and propositions φ :

$$PB_m(a, \Box_m^a \varphi) \supset PEP_m(a, \varphi)$$

Declarative force = creating a doxastic commitment I assume the following convention governs the force of all utterances of declarative sentences (*cf.* Condoravdi and Lauer 2011).⁸

(32) DECLARATIVE CONVENTION

If a speaker Sp makes an utterance u of a declarative sentence with content ϕ he incurs the following commitment (where m is the final moment of $\tau(u)$):

$$PB_m(Sp, \phi)$$

B.2 Deriving the performative effect

Suppose that Sp makes an utterance u of (33), on its preference reading, and let n be the final moment of $\tau(u)$. By (32), this will result in the commitment in (34).

(33) You have to be home by 7pm.

(34) $PB_n(Sp, \forall m \in \tau(u) : \Box_m^{Sp}(\text{you-home-by-7}))$

By (30), this means that Sp also has the commitment in (35).

(35) $PB_n(Sp, \Box_n^{Sp}(\text{you-home-by-7}))$

From this, it follows by (31) that Sp also has the commitment in (36).

(36) $PEP_n(Sp, \text{you-home-by-7})$

- **Upshot:** If a speaker utters (33), on its preference reading, he thereby becomes publicly committed to a preference for *you-home-by-7*.
- The final ingredient is a suitable conception of what it is to have deontic authority:⁹

(37) **Deontic authority with respect to p**

An agent a is a deontic authority with respect to p iff:

$$\forall m : PEP_m(a, p) \supset \Box_m^d(p)$$

⁸As in Lauer (2013, Ch. 5-4), such conventions can likewise be implemented as constraints on admissible models. Here I state it informally.

⁹This conception also can be used to account for command-uses of desideratives like (12), as well as command-uses of imperatives, on either the account defended in Condoravdi and Lauer (2012, on which **Be home by 7pm!** directly induces the commitment in (36)) or a variant of the account of Kaufmann (2012, on which **Be home by 7pm!** denotes the proposition $\Box_n^{Sp}(\text{you-home-by-7})$).

If, in the context of u , the speaker Sp is a deontic authority with respect to *you-home-by-7*, then (36) implies (38).

(38) $\Box_n^d(\text{you-home-by-7})$

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