Conditional imperatives and endorsement *

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1.   Modals and imperatives: A striking contrast

Conditionals with modal and imperative consequents can both be used to give information about what is necessary to achieve a goal. Only those with modal consequents, however, can be used to give this kind of information and then be followed up with an attempt by the speaker to dissuade the addressee from pursuing the goal.

(1)   If you want to have the workshop dinner at your place, you have to / should / need to buy a bigger dining table.

    a.   So start checking out furniture stores!
    b.   So don't even think about it! (it = having the dinner at your place)

(2)   If you want to have the workshop dinner at your place, buy a bigger dining table.

    a.   So start checking out furniture stores!
    b. # So don't even think about it!

Greek has a dedicated expression for the speaker to question whether doing something is worth it. A continuation with this expression is felicitous after a conditionalized modal, as seen in (3a), but infelicitous after the corresponding conditional imperative, as in (3b).[1]

(3)   a.   Ama thes   na   prolavis   to ergo, prepi na   figis   amesos.
          If   want-2SG SUBJ be on time for the movie must SUBJ leave-2sg at once
          Ala pou   na   trehis   tora …
          But where SUBJ run-2SG now

    [1]Thanks to Christos Christopoulos for suggesting this kind of evidence from Greek.

b. Ama thes   na   prolavis   to ergo, fige   amesos.
    If   want-2SG SUBJ be on time for the movie, leave-IMP at once
    # Ala pou   na   trehis   tora …
      But where SUBJ run-2SG now

'If you want to be there in time for the film, you have to leave at once / leave at once. But why bother (rushing now)?'

These contrasts are *prima facie* surprising. On the face of it, both the conditional declaratives and the conditional imperatives convey the same factual information—that buying a bigger table is necessary for having the party at the addressee's place, and that leaving now is necessary for getting to the movie on time. But, apparently, they impose different constraints on what this information can be used for.

The different continuations clarify the intent of the speaker in uttering the conditional, which could be either to inform the addressee how he should act in order to fulfill his (potential) goal, or to dissuade the addressee from pursuing that goal. We will refer to the former as 'giving advice on how-to' and the second as 'giving advice on why-not-to'. Evidently, the conditionals with modal declaratives can be used both for advice on how-to and for advice on why-not-to, but the conditional imperatives can only be used for advice on how-to. In this paper, we investigate why this is so.

2.   Advice with modals and imperatives

In this section, we work towards a diagnosis of what is behind the contrast we just saw. In order to do so, we lay out the considerable complexity that underlies uses of (conditional-ized) modal sentences to give advice, drawing especially on Lauer & Condoravdi (2014), which focuses on the *practical reasoning* triggered by utterances of conditionals like (1), as well as on Condoravdi & Lauer (2016) for the semantics of such conditionals.

Our starting point is the observation that modals and imperatives alike can be used to give factual information on how to achieve a topical goal. For example, both responses in (4) convey the information that taking the A train is the only or best way to go to Harlem.

(4)   [Strangers on a subway platform.]
        X: How can I go to Harlem? / I want to go to Harlem.

        a. *Y*: You have to / should take the A train.
        b. *Y*: Take the A train.

In the following, we first consider how this information is conveyed with modal declaratives—both in dialogical examples like (4a) and in their conditional counterparts, *anankastic con-dititionals*—and what kinds of practical reasoning on the part of the addressee this conveyed information can feed. Then we turn to the question whether imperative responses like (4b) and their conditional counterparts, *anankastic imperatives*, come to convey this information in the same way, and can feed the same kind of practical reasoning.

2.1 Conveying factual information with priority modals

On the face of it, it might be surprising that sentences containing *priority modals* can be used to convey factual information (about public transportation, in this case). Under a premise semantics for modals, sentences with priority modals make *claims about what follows from a set of ideals*, such as an agent's goals. But of course, what is ideal need not be actual, so how does such a modal utterance convey factual information? In a version of premise semantics like Kratzer's (1981), this is possible since modals are interpreted with respect to *two* sets of premises: the modal base, containing factual propositions, and the ordering source, containing ideals. Indirectly, then, a modal statement can convey information about either premise set.

The most natural construal for (4a) is a 'teleological' one: the relevant ideals are the goals of the addressee, or more generally his action-relevant preferences, what we have called 'effective preferences' in previous work (Condoravdi & Lauer 2016). The relevant facts include X and Y's location, facts about public transportation, etc. The proposition expressed by the sentence is summarized in (5).

(5) $w \in [\![(4a)]\!]$ iff in all worlds where the relevant facts of w obtain and which best satisfy X's effective preferences at w, X takes the A train.

It is noteworthy that according to this semantics, (4a) does not say anything about a relation between going to Harlem and taking the A train. It only says that taking the A train is necessary if the addressee's preferences are satisfied as well as possible, given the facts.

In order to get to the perceived interpretation, X has to draw two pragmatic inferences. First, on the assumption that his previous utterance was taken by Y to indicate that X has an effective preference for going to Harlem, X can infer that the necessity asserted by Y is true *because* of this preference: Taking the A train is a necessity given X's effective preferences, because the latter include going to Harlem. Second, X can infer that this connection between the goal of going to Harlem and the necessity of taking the A train is due to this being the best or only means for satisfying the stated goal.

Thus, even though an utterance of (4a) appears to directly provide information about the means to an end, on reasonable assumptions about the semantics of the expressions involved, it does so only through a complex pragmatic inference process with the modal statement as a starting point.

2.2 Conveying factual information with anankastic conditionals

In a conditional of the form *If want g, must p*, a priority modal is conditionalized with an antecedent hypothesizing about an agent's goal. If such a sentence conveys, like (4a), that *p* is a necessary/best means for *g*, it is an *anankastic* conditional.[2]

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[2]In Condoravdi & Lauer (2016), we showed that conditionals of the same form can alternatively convey a variety of different relations, even on the same construal of the conversational parameters.

(6)   If you want to go to Harlem, you should / have to take the A train.

Anankastic conditionals have been famously problematic (Sæbø 1985, 2001, von Fintel & Iatridou 2005, von Stechow et al. 2006, Huitink 2008, Condoravdi & Lauer 2016). From a compositional point of view, the problem is how to make the modal interact appropriately with the hypothetical environment of the conditional. As with (4a), the conditionalized teleological necessity in (6) ought to be about what follows from the addressee's goals appropriately adjusted to include the hypothesized goal, given the way the facts are. However, adding the antecedent *want g* to the factual premises of the modal base, following the standard Kratzerian analysis of conditionalized modals, is not sufficient to achieve this. Making the hypothetical assumption also needs to ensure that *g* is added to the premises of the ordering source. This problem was originally demonstrated for anankastic conditionals by Sæbø (1985, 2001) and for a different set of conditionals by Frank (1997). We termed it the *problem of conditioning on norms* in Condoravdi & Lauer (2016) and showed that it is not confined to the Kratzer framework.

    For the correct interpretation, the *if*-clause cannot restrict the overt modal. Rather it has to be part of a structure scoping over the modal, either a conditional operator or a higher covert modal. Anankastic conditionals like (6) then have a logical form as in (7).

(7)   NEC [you want to go to Harlem] [MUST[you take the A train]]

The (conditional) operator NEC allows the antecedent to interact in the right way with the ordering source of the modal in the consequent if *want* and the modal are interpreted in terms of the same sort of preferences. NEC is the same epistemic operator that is present, on a standard Kratzerian account of conditionals, in declarative conditionals that do not contain on overt modal. Its modal base consists of what the speaker knows, and the antecedent is added to this set of premises. Given this semantics, the truth-conditional content of an anankastic conditional depends on the facts known to the speaker, including the relevant agent's other action-relevant preferences in addition to the hypothesized one. As in the dialogic cases, the semantics of the conditional does not imply that the necessity is dependent on the antecedent being true (e.g., dependent on the addressee preferring to go to Harlem), but in most contexts, such a dependence will be inferred pragmatically (as an instance of 'conditional strengthening' or 'perfection', Geis & Zwicky 1971, von Fintel 2001a). And as before, once this dependence has been inferred, a necessary-means-of relation between the complement of *want* and the prejacent of the modal can be inferred.

2.3   How to take modal advice: practical reasoning

If the context is right, an addressee can reason from the utterance of a modal statement, conditionalized or not, to information about means to an end. But being given this information is one thing, making use of it is quite another. Once the addressee learns that *p* is a necessary means for his goal *g*, he can react in at least two ways. He can choose to adopt *p* as an effective preference, performing the reasoning sketched in (8). Or he might instead decide to give up his preference for the goal, engaging in the reasoning sketched in (9).

As in Lauer & Condoravdi 2014, these schemas describe practical reasoning as a dynamic process by which agents revise their overall cognitive state. What is crucial here is that these schemas can describe how an agent reasons on a particular occasion, or how agents can doxastically expect each other to reason.

(8) A simple case of practical instrumental reasoning leading to adopting the means:

    a. Agent *a* has an effective preference for *g*.
    b. *a* is indifferent about *p*.
    c. *a* learns that *p* is a necessary means for *g*.
    d. *a* believes that *p* is realizable.
    ⤳
    e. *a* forms an effective preference for *p*.

(9) A simple case of practical instrumental reasoning leading to rescinding the end:

    a. Agent *a* has an effective preference for *g*.
    b. *a* has an effective preference for $\neg p$.
    c. *a* learns that *p* is a necessary precondition for *g*.
    ⤳
    d. *a* rescinds his preference for *g*.

The reasoning in (8) relies on *indifference about p*, while the reasoning in (9) relies on a *preference for $\neg p$*. Consequently, which way an agent goes will depend on what other preferences he has besides *g*. This is why anankastic conditionals can be used both to give advice on how-to and to give advice on why-not-to, as in our original example:

(10) If you want to have the dinner at your place, you have to buy a bigger dining table.

    a. So start checking out furniture stores.
    b. So don't even think about it. (it = having the dinner at your place)

Both uses are sensible, because the speaker may hope to trigger either the reasoning in (8) or the one in (9) with her utterance, which conveys that buying a bigger table (= *p*) is a necessary precondition for having the party at the addressee's place (= *g*).

2.4 Advice with imperatives

Our initial observation about (11) indicates that anankastic imperatives differ from their declarative counterparts, anankastic conditionals, in that they can only be used to give advice on how-to, not on why-not-to.

(11) If you want to have the workshop dinner at your place, buy a bigger dining table.

    a. So start checking out furniture stores.
    b. # So don't even think about it.

The question is why. Intuitively, the conditional imperative in (11) provides the same factual information as the anankastic conditional in (10), *viz.*, that having the dinner at the addressee's place will not be feasible without buying a bigger table. Hearers that receive this information should, in principle, be able to engange in both kinds of practical reasoning seen in the previous section, and hence speakers should be free to use the conditional imperative in order to trigger either type of reasoning. But apparently, they cannot.

We take this property of advice imperatives to be connected to the following observation about imperatives more generally, due to Schwager (2006), Kaufmann (2012). Whenever a speaker utters an imperative, she endorses its prejacent in some sense. Minimally, she cannot strictly dispefer the prejacent, though in at least some contexts, imperatives seem to convey something stronger, namely that the speaker prefers the prejacent. We call the former notion 'weak endorsement' and the latter 'strong endorsement'.[3]

For some uses, such as commands or requests, endorsement may seem to be just a consequence of the illocutionary force of the utterance. It stands to reason that speakers would only make such moves if they indeed want what they command or request. But imperatives come with endorsement even on uses where this kind of reasoning does not go through, most notably when they give advice on how-to. The examples in (12) are particularly telling: (12a) and (12b) show that it is quite possible to tell someone that the only way to achieve a goal is to perform some action, while simultaneously asserting that one does not want them to do so. But the same is not possible if this information is provided by means of an imperative, as in (12c).

(12)   *X*: How do I get into this building?

         a.   *Y*: The only way is through this door. But I don't want you to go through there.
         b.   *Y*: You have to go through this door. But I don't want you go to through there.
         c.   *Y*: Go through this door. # But I don't want you go to through there.

Any successful analysis of imperatives will have to account for the contrast in (12), and derive the endorsement implication of bare imperatives. One might hope, then, that the same implication explains why a conditional imperative like the one in (11) cannot be used to give advice on why-not-to. However, conditional imperatives in general do not give rise to unconditional endorsement. Unlike bare imperatives, conditional imperatives only endorse their prejacent *conditional on their antecedent being true*, as (13) (after Kaufmann & Schwager 2009) illustrates.

(13)   If you get lost, call me! But I don't want to be disturbed otherwise.

And yet, the fact that anankastic imperatives cannot be used to give advice on why-not-to suggests that their speakers unconditionally endorse the goal mentioned in the antecedent.

In the rest of the paper, we investigate how these observations can be reconciled. We first lay out the basics of our analysis of imperatives and characterize the unconditional

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[3]Kaufmann & Schwager (2009) encode weak endorsement directly as an independent conventional constraint. Kaufmann (2016) takes it to be a constraint connecting bouletic and decisive modality.

endorsement implication of bare imperatives (Section 3). Then we turn to conditional imperatives, considering the question what conditional endorsement should amount to, and how our analysis can derive it with standard assumptions about the meaning of conditionals (Section 4). We conclude by briefly discussing whether and how these results could be reproduced in the modal analysis of imperatives due to Kaufmann (2012, 2016).

3. Imperatives as preferential commitments

In one way or another, recent accounts of imperatives (Schwager 2006, Portner 2007, Kaufmann 2012, 2016, Condoravdi & Lauer 2012, Roberts 2015, von Fintel & Iatridou 2017) assume that the combinatorial system of grammar yields a *denotatum*, and a separate rule, or *convention of use*, specifies a context change effect. This is the conventional force, which is crucially more abstract than any of the particular 'illocutionary forces' discussed in philosophical speech act theory (such as ORDER, REQUEST, WARNING, PROMISE, etc). This enables speakers to use sentences of a single type to perform a variety of illocutionary acts.

To illustrate, imperative sentences are functionally heterogeneous and can, in the right context, be used to order, warn, request, plead, wish, curse, permit, concede, and even to give advice on how-to.[4] The conventional force of imperatives must be *general enough* to be compatible with all these uses, but also *specific enough* so that, in a particular context, the perceived illocutionary force can be derived.

There is an emerging consensus within linguistic pragmatics that the conventional force of declaratives and imperatives should be cashed out in terms of the *commitments* that the utterance of a sentence creates as a matter of linguistic convention.[5] In the approach we build on here (Condoravdi & Lauer 2012, Lauer 2013), agents are taken to have two kinds of commitments, doxastic and preferential. Doxastic commitments are commitments to treat certain propositions as true, preferential commitments are commitments to treat certain propositions as desirable. Utterances create such commitments in virtue of the conventions of use the uttered sentence is associated with. Declaratives create doxastic commitments, while imperatives create preferential ones.

In our earlier work, we considered two options for how imperatives create preferential commitments. The first is that imperatives do so directly. On this conception, the denotation of an imperative can be the proposition expressing its fulfillment conditions, as in (14). This is what von Fintel & Iatridou (2017) call a 'minimal' semantics for imperatives, on which there is no imperative operator present in the compositional semantics.[6] The second option is to assume that imperatives induce preferential commitments only indirectly, via a doxastic commitment. On this conception, the semantic denotatum of imperatives is

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[4]The functional heterogeneity of imperatives was first appreciated by Schmerling (1982). Schwager (2006), Kaufmann (2012) brought out the importance of accounting for it in an analysis of imperative force.

[5]This consensus is particularly strong with respect to declaratives; see Hamblin 1971, Gunlogson 2003, 2008, Beyssade & Marandin 2006, Farkas & Bruce 2010, Condoravdi & Lauer 2011, Lauer 2013, Krifka 2014, 2015, Malamud & Stephenson 2015, Farkas & Roelofsen 2017, a.o.

[6]There are various alternatives to propositional denotations that are equivalent to this first option as long as one restricts attention to bare matrix imperatives. See Lauer (2013, Ch. 6.4) for extensive discussion.

more complex: it contains an operator IMP, which is interpreted as a function that creates propositions about preferential commitments of the speaker, as in (15).

(14) $[\![\text{Leave!}]\!] \approx [\![Ad \text{ leaves}]\!]$

(15) $[\![\text{Leave!}]\!] \approx [\![\text{IMP}([\![Ad \text{ leaves}]\!])]\!] = \lambda w. Sp$ is committed to prefer $[\![Ad \text{ leaves}]\!]$

In virtue of the doxastic commitment to the proposition in (15), the speaker will also incur a preferential commitment to the prejacent of IMP (see Section 3.2 below).

   One cannot decide between the two options on the basis of data from simple matrix imperatives. Only considerations about complex sentences containing imperatives could settle the issue. von Fintel & Iatridou (2017) argue that the existence and perceived interpretation of 'Imperative and Declarative' sequences with a conditional interpretation decides in favor of the first, 'minimal' option. The existence and perceived interpretation of conditional imperatives appears to us to provide an equally decisive argument for the second option. As we demonstrate below, if IMP is part of the compositional semantics, this enables an account of conditional imperatives as conditionals that have an imperative embedded in their consequent, while no alternative analysis exists for a 'minimal' semantics.

3.1   Commitment states

In this section, we set up the formal basics of a system in which we can express our theory of imperatives. We first define the notion of a *commitment state*, which represents both the doxastic and preferential commitments of an agent (at a given time, in a given world):

(16)   A **commitment state** is a pair $C = \langle C_{PB}, C_{PEP} \rangle$, where
   a. C_{PB} is a non-empty set of possible worlds.
   b. C_{PEP} is an effective preference structure (Condoravdi & Lauer 2012, 2016).[7]

C_{PB} is the set of worlds compatible with everything the agent is committed to believe. It can be thought of as the public belief state of the agent. Likewise C_{PEP} can be thought of as the public preferential state of the agent. We define doxastic and preferential commitments in terms of these components, via two support-relations for commitment states: $C \vDash_{PB} p$ represents that the agent of C is doxastically committed to p and $C \vDash_{PEP} p$ represents that the agent is preferentially committed to p.

(17) $\langle C_{PB}, C_{PEP} \rangle \vDash_{PB} p$ if and only if $C_{PB} \subseteq p$

(18) $\langle C_{PB}, C_{PEP} \rangle \vDash_{PEP} p$ if and only if $p \in \max(C_{PEP})$

As a system of formal pragmatics, the models we employ not only represent the reality

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[7]Effective preference structures are required to be *consistent* and *realistic*, in the sense defined in Condoravdi & Lauer (2016, Section 5.2).

talked about, but also the conversation itself.[8] As a consequence, different possible worlds in the model (in which potentially different conversations take place) will differ with respect to what the interlocutors are committed to. We assume that any agent a, at a given world and time, has a unique commitment state, which we denote as $C_a(w)$, and define the following operators that form propositions about doxastic and preferential commitments.

(19)   For any agent a and proposition p:

    a. $\text{PB}_a(p) := \{w \mid C_a(w) \vDash_{\text{PB}} p\}$ b. $\text{PEP}_a(p) := \{w \mid C_a(w) \vDash_{\text{PEP}} p\}$

Finally, we define a notion of *admissibility* for commitment states, ensuring a correspondence between 'meta-commitments' and simple commitments.

(20)   If C is the commitment state of agent a, then C is **admissible** only if:

    a. If $C \vDash_{\text{PB}} \text{PB}_a(p)$, then $C \vDash_{\text{PB}} p$ b. If $C \vDash_{\text{PB}} \text{PEP}_a(p)$, then $C \vDash_{\text{PEP}} p$

We assume that for any agent a and any world w, $C_a(w)$ is admissible. Then, the following two introspection principles are ensured:

(21)   a. $\text{PB}_a(\text{PB}_a(p))$ entails $\text{PB}_a(p)$ b. $\text{PB}_a(\text{PEP}_a(p))$ entails $\text{PEP}_a(p)$

3.2   Updating commitment states

Since we assume that both declaratives and imperatives create doxastic commitments by convention, we only introduce a notation for doxastic update: $C + p$ represents that p is added to the agent's doxastic commitments, and necessary adjustments are made so that the new commitment state is admissible. We don't define the update operation here (but see Lauer 2013, Chapter 5 for one possibility). We only assume the following throughout:

(22)   **Constraints on doxastic update**
    If $\langle C_{\text{PB}}, C_{\text{PEP}} \rangle + p = \langle C_{\text{PB}}^+, C_{\text{PEP}}^+ \rangle$ then:

    a. $C_{\text{PB}}^+ \subseteq C_{\text{PB}}$ (monotonicity)
    b. $C_{\text{PB}}^+ \subseteq p$ (success)

The constraint in (22b) ensures that for any commitment state C and any proposition p: $C + p \vDash_{\text{PB}} p$. As for the content of imperatives, we can now rewrite (15) as (23).

(23) $[\![\text{IMP}(Ad \text{ leaves})]\!]^c = \text{PEP}_{Sp}(\lambda w. Ad \text{ leaves in } w)$, where Sp is the speaker in c.

The utterance of an imperative like *Leave!* results in the current commitment state of the speaker C_{Sp} being updated to C_{Sp}^+ as follows:

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[8] The need for this has been stressed, in a different setting, by Stalnaker (1978, 1998, 2002, a.o.).

(24) $C_{Sp}^{+} = C_{Sp} + \text{PEP}_{Sp}(\lambda w. Ad$ leaves in $w)$

The admissibility constraints ensure that $C_{Sp}^{+} \models_{\text{PEP}} \lambda w. Ad$ leaves in w. Hence, utterances of imperatives are *self-verifying* in the way explicit performatives are according to Condoravdi & Lauer (2011): Whenever an imperative is uttered in a world w, w is an element of the proposition denoted by the imperative, i.e., the proposition that the speaker is preferentially committed to the prejacent of the imperative.

3.3   Advice uses and endorsement

On this account, endorsement amounts to preferential commitment, which is the main content of imperatives. Thus, imperatives come with *strong* endorsement on all their uses. One might wonder whether this isn't too strong, in particular for advice uses: In the context of (4), is it appropriate to say that Y commits to a preference for X taking the A train? Intuitively, we would not expect Y to have any specific preferences about a total stranger. And indeed, an *I want*-assertion in place of the imperative seems odd in such a case.[9]

(25)   [Strangers on a subway platform.]
        X: How can I go to Harlem? / I want to go to Harlem.
        Y: ?? (Then) I want you to take the A train.

In Condoravdi & Lauer (2012), we suggested the following view: Imperatives can be used in such cases because the speaker can be expected to take on an effective preference of another agent, if it is not in conflict with any of her own. The bulk of an agent's effective preferences will correspond to those of her personal desires, inclinations, appetites, etc., that she has decided to act on. We call these the agent's *self-motivated* effective preferences. Crucially, however, not all effective preferences need to be self-motivated. In particular, agents also form effective preferences according to the following principle.

(26)   *Cooperation by default* An agent a is cooperative-by-default if she adds any topical goal g of another agent she learns about to her effective preference structure EP_a, in such a way that for no self-motivated preference $p \in EP_a : p < g$.

This is an extremely weak requirement, as the preference for g will be dominated by any conflicting preference of the agent, and even when not dominated, it will be bounded by the speaker's other preferences. For example, in the context of (4), Y will have various self-motivated preferences (e.g., getting to work on time) that will prevent her from actively helping X to get to Harlem (e.g., accompanying them on the train to make sure they do not miss their stop), and this is perfectly consistent with the principle in (26).

By uttering an imperative in such a context, the speaker signals to the addressee that she has taken on the addressee's preference for g (in the limited way required by (26)) as one

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[9]von Fintel & Iatridou (2017) point out that the same is true for permission uses. We think that what we say about advice uses below can be extended to cover permission uses as well.

of her own, and that neither *g*, nor anything that is necessary for realizing *g*, is in conflict with any of her existing preferences. This is why, even on a disinterested advice use, an imperative is incompatible with an assertion that the speaker does not want the agent to act on the piece of advice, as we saw in (12c). This is also why a bare imperative is not suitable for giving advice on why-not-to:

(27)   *A* : I want to have the dinner at my place.
        B : (Then) Buy a bigger dining table. # So forget about it.

For *want*, we can assume that, while it has a reading on which it refers to effective preferences (Condoravdi & Lauer 2016), the verb is further lexically restricted to self-motivated preferences. This explains why *I want*-assertions do not work for giving advice, without affecting the explanation of why imperatives are incompatible with *I want you not to do it*. Even if the imperative preference is motivated by cooperation-by-default, it cannot be in conflict with any self-motivated preference which would verify *I want you not to do it*.

3.4   Pragmatic reasoning for advice imperatives

It follows that the way in which information about means to an end is conveyed with imperatives is quite different from the way the same information is conveyed with modals (discussed in Section 2.1). Modal advice proceeds via reasoning based on an assertion about what follows from the effective preferences of *the addressee*. Imperative advice, by contrast, proceeds via a commitment to an effective preference of *the speaker*.

In a context like (4), pragmatic reasoning 'bridges' speaker and addressee preferences. In virtue of (26), after *X* has informed *Y* of his goal of going to Harlem, *X* can assume that *Y* will share this goal (in a limited way). *X* can then reason as in cases where there is a truly shared goal:[10] *Y* just committed to having a preference for *X takes the A train*. Presumably, *Y* would only do that if she actually has such a preference. Given the context, *X* can conclude that *Y* has this preference because taking the A train is a necessary means for going to Harlem. That is, *X* assumes that the preference that *Y* commits to is the result of instrumental reasoning of the type in (8) on the part of *Y*.

In a nutshell, imperative advice on how to reach a goal *g* proceeds as follows. The speaker commits to a preference for *p*. This informs the addressee that the speaker has a preference for *p*. By running the speaker's practical reasoning 'backwards', the addressee can conclude that *p* is a necessary means for their shared goal *g*.

4.   Conditional imperatives

On our account, bare imperatives commit their speakers to prefer the prejacent. Conditional imperatives should differ from bare ones in that they induce a *conditional commitment* instead. For example, with (28a), the speaker should be committed to preferring that the addressee call her *conditional on the addressee getting lost*.

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[10]See Lauer (2013, Ch. 6.3.1) for a more formal way to spell out this reasoning.

(28) a. (Don't disturb me unless necessary, but) If you get lost, call me!
     b. If John was at the meeting yesterday, ask him what was decided.

But what exactly is a conditional commitment? Here are two observations that a notion of conditional commitment suitable for conditional imperatives should help explain.

First, conditional commitment is weaker than unconditional commitment. In virtue of an utterance of (28a), the speaker does not become automatically committed to preferring being called, and with (28b) the speaker does not automatically become committed to preferring that the addressee ask John. Relatedly, while unconditional commitments have to be consistent, conditional commitments can have contradictory contents, as seen in (28a).

Second, conditional commitments can function as *guarantees* that enable the coordination of future actions under various contingencies. All commitments arguably have this function, but the conditional preferential commitments induced by conditional imperatives do it in a particular way. In virtue of an utterance of (28a), the addressee can rely on the speaker being fine with being called as soon as the addressee is lost (but not otherwise).

Different notions of conditional commitment arise depending on what has to be the case for it to become actual. We consider the three options outlined in (29). Which of these is the appropriate one for conditional imperatives?[11] The answer to this question will constrain the choice of an appropriate semantics.

(29) **Three options for conditional preferential commitment**
      An agent a is committed to prefer q conditionally on p if and only if:
      a automatically becomes committed to prefer q, ...

      a. ...if/once p is true.   (strong)
      b. ...if/once a comes to believe/know that p is true.   (intermediate)
      c. ...if/once a comes to be committed to believe that p is true. (weak)

(29a) is the strongest notion: the commitment becomes actual if/when the antecedent becomes true. Thus, for (28a), the speaker's preferential commitment for being called becomes actual as soon as the addressee gets lost. This strong notion is not only appealing in its (apparent) simplicity, it also directly explains why conditional imperatives can function as guarantees. If the addressee gets lost, he can rely on the speaker being fine with being called because the speaker is (at this time) committed to prefer being called. On the other hand, assuming that conditional imperatives give rise to such a strong conditional commitment has some counterintuitive consequences. Consider what happens if a sentence like (28b) is uttered in a context where neither speaker nor addressee know whether the antecedent is true or not. Assuming that John was in fact at the meeting, on the strong notion, the speaker becomes immediately committed to preferring that the addressee ask John—

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[11]Several authors have proposed notions of 'projected' or 'contingent' commitment in the analysis of special types of declaratives (e.g., Gunlogson 2008, Malamud & Stephenson 2015). These commitments do not become actual right away, and they are, in a sense, 'conditional commitments'. It is important to note that the notion of conditional commitment relevant for conditional imperatives and these other phenomena need not be the same. Moreover, in the case of conditional imperatives, the conditionality of the commitment should follow compositionally from the conditional make-up of the sentence.

but neither the speaker nor the audience *knows* about this commitment being in effect, and hence no one can act according to the commitment.[12]

Considerations like this may make the intermediate option (29b) seem more attractive, as the preferential commitment does not become actual until the speaker *learns* that the antecedent is true. On this conception, a conditional commitment can still function as a guarantee, since an addressee can rely on the preferential commitment even before it becomes actual. This is so because once the addressee knows that the antecedent is true, he has at his disposal a way to trigger the preferential commitment when necessary, *viz.* by informing the speaker of the truth of the antecedent.

The weakest option may appear too weak to explain why conditional imperatives can function as guarantees. According to it, the speaker of (28a) could prevent the conditional commitment from becoming actual by refusing to doxastically commit to the antecedent. And yet, at least in cooperative contexts, it can function as a guarantee in much the same way as on the intermediate option. For example, it is plausible to assume that, in even mildly cooperative contexts, a speaker is expected to accept (and hence doxastically commit to) the content of claims by the addressee about matters that he is knowledgeable about. Similarly, in many cooperative contexts, a speaker will be expected to publicize (and hence doxastically commit to) the antecedent if she privately knows it to be true. If the addressee is confident that the speaker will abide by these norms of cooperativity, he can rely on the preferential commitment even when it has not (yet) become actual.

Thus, the weakest form of conditional preferential commitment can function much like the intermediate one under certain plausible assumptions of cooperativity. The strong notion, however, is properly stronger than both, since on this conception, whether a preferential commitment becomes actual depends only on whether the antecedent is true, not on whether the interlocutors know about or commit to it.

4.1   Deriving conditional preferential commitments

We do not settle here which of the three options is the best one, but confine ourselves to noting that the weakest option, together with plausible assumptions about cooperative contexts, is sufficient for what we aim to explain. Our account is, in principle, compatible with the stronger notions. It would be quite possible to give an analysis of conditional imperatives in our setting that predicts that they give rise to a conditional commitment in the sense of (29a,b). Doing so would require a different semantics for the conditional, most likely in a dynamic setting à la Veltman (1996) or Krifka (2014, 2015) that, moreover, allows reference to both commitment states and facts of the world.[13]

We will show that the third option (29c) fairly straightforwardly follows from our ac-

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[12]Though counterintuitive at first blush, this property may be ultimately desirable. Utterances of conditional imperatives generally tend to create an incentive to find out whether their antecedents are true (at least when they are assumed to be settled). If conditional imperatives have the potential to create commitments that the interlocutors are unaware of, this may explain why this incentive exists. Agents arguably have a vested interest in finding out what they are committed to, so that they can act in accordance with their commitments.

[13]Theories that represent discourse structure and commitments separately from the facts talked about would arguably face a challenge capturing the strongest notion of conditional commitment.

count together with standard assumptions about the semantics of conditionals. (30) characterizes the weak notion in our system.

(30)   An agent with commitment state C is committed to prefer q conditionally on p iff

$$(C + p) \vDash_{\text{PEP}} q$$

We assume, following Kaufmann & Schwager (2009), that the imperative operator is under a higher operator and not restricted by the *if*-clause. The logical form (31a) is as in (31b), which also introduces some useful names for the propositions involved.[14]

(31)   a. If you get lost, call me.
         b. $\text{NEC}[\underbrace{\text{you get lost}}_{\text{Lost}}][\text{IMP}(\underbrace{\text{you call me}}_{\text{Call}})]$

NEC is the same operator discussed in Section 2.2 in connection with the semantics of anankastic conditionals. For reasons that will become clear below, we deviate from Kaufmann & Schwager (2009) and assume that NEC is a strict epistemic necessity operator, as assumed, for instance, by Kaufmann (2005) in the context of a Kratzerian analysis of indicative conditionals. That is, we assume that the ordering source of NEC is empty.

(31) expresses the proposition that in all worlds compatible with what the speaker knows where Lost is true, the speaker is preferentially committed to Call. If a speaker Sp utters (31a), she becomes doxastically committed to this proposition, that is, the update in (32) occurs. With this update, Sp does *not* get doxastically committed to $\text{PEP}_{Sp}(\text{Call})$, and hence, assuming Sp did not have any commitments about Call in C_{Sp}, she will not have any such preferential commitments in C_{Sp}^+.

(32) $C_{Sp}^+ = C_{Sp} + \text{NEC}[\text{Lost}][\text{PEP}_{Sp}(\text{Call})]$

Thus, as desired, there is no automatic preferential commitment in virtue of the utterance of the conditional imperative. As a consequence, the update in (32) is compatible with another update with a conditional imperative utterance with a contradictory prejacent, as in (28a). The commitment state in (33) is a consistent commitment state.

(33) $C_{Sp}^+ + \text{NEC}[\neg\text{Lost}][\text{PEP}_{Sp}(\neg\text{Call})]$

At the same time, we derive conditional commitment of the type in (30), as the new doxastic commitment sets Sp's commitment state up for a future preferential commitment. For $C = C_{Sp}^+$, or any state descended from it by monotonic updates, we have (34a) and hence, by the constraints on admissible commitment states, (34b).

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[14]In the rest of this section, to avoid notational clutter, we will occasionally use English expressions and sketches of logical forms to stand in for the propositions we take them to express.

(34)   a. $C + \mathsf{Lost} \vDash_{\mathrm{PB}} \mathrm{PEP}_{Sp}(\mathsf{Call})$ b. $C + \mathsf{Lost} \vDash_{\mathrm{PEP}} \mathsf{Call}$

In the move from (32) to (34), we relied on the assumption that NEC is a strict necessity operator. A more standard choice, in line with Kratzer (1981, on declaratives) and Kaufmann & Schwager (2009, on conditional imperatives) would be to assume that it is a *variably strict* one, with an ordering source representing what is 'normal'. With NEC construed this way, we would need additional assumptions for this move to be valid. The speaker of (31a) would only become committed to prefer Call if she is also in general committed to the world being as normal as possible, given her beliefs. Perhaps this is a plausible assumption to make for rational agents, in which case we could just as well adopt a variably strict analysis. If not, we would have to stick with a strict analysis.[15]

4.2   Conditional commitment and endorsement

Even though the utterance of a conditional imperative only induces conditional commitment, it immediately puts some constraints on the speaker's commitment state: Given that doxastic update is monotonic, an admissible commitment state should support commitment q conditional on p only if the agent is not already unconditionally committed to $\neg q$.

There is a natural way to ensure this, which we only sketch here. Assume that the speaker of an indicative conditional not only incurs a doxastic commitment to the proposition expressed, but also commits to taking the antecedent to be possible.[16] We do not define 'commitment to a possibility' here, but assume the following, inspired by Veltman (1996)'s *might* operator: If an agent is committed to take a proposition to be possible, then her commitment state is admissible only if it can be consistently updated with that proposition.

It follows that a speaker cannot consistently utter a conditional imperative *if p, q*! if she is already committed to prefer $\neg q$. Likewise, once the conditional imperative has been uttered, she cannot consistently take on a preferential commitment to $\neg q$ afterwards. This captures the fact that conditional imperatives come with a weak endorsement implication: their speaker cannot publicly disprefer the prejacent of the imperative.

4.3   Anankastic imperatives and endorsement

Anankastic imperatives are like any other conditional imperative except that the antecedent hypothesizes about the addressee's preferences. (35a) has the content in (35b), triggers the update in (36a), and thus creates the conditional commitment in (36b).

(35)   a.   If you want to have the party at your place, buy a bigger table.
       b. $\mathrm{NEC}[\mathrm{want}_{Ad}(\text{party at } Ad\text{'s place})][\mathrm{PEP}_{Sp}(Ad \text{ buys bigger table})]$
            $\approx$ 'If *Ad* has a preference for *party at Ad's place*, then *Sp* is preferentially committed to *Ad buys bigger table*.'

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[15]It might have to be a dynamic one, as von Fintel 2001b's and Gillies 2007's analyses of counterfactuals, since Kaufmann & Schwager 2009 point out failures of 'Strengthening of the Antecedent' with conditional imperatives. The same issue arises with anankastic conditionals (Condoravdi & Lauer 2016, Section 6.2).

[16]This is a version of the standard assumption that a speaker can felicitously utter an indicative conditional only if the antecedent is a 'live possibility' in the context.

(36)   a. $C^+_{Sp} = C_{Sp} + \text{NEC}[\text{want}_{Ad}(\text{party at } Ad\text{'s place})][\text{PEP}_{Sp}(Ad \text{ buys bigger table})]$
       b. $C^+_{Sp} + \text{want}_{Ad}(\text{party at } Ad\text{'s place}) \vDash_{\text{PEP}} Ad \text{ buys bigger table}$

As before, the conditional imperative induces a conditional commitment and hence weak endorsement: The speaker cannot have (or later adopt) a public preference for *Ad not buying a bigger dining table*.

Advice on how-to.   Recall (from Section 3.4) that *Ad* can infer a means-end relationship from an utterance involving a speaker preference by (i) assuming that the speaker adopted *Ad*'s goal and (ii) running the speaker's instrumental reasoning backwards in order to establish the correct relationship between the goal and the preference to the imperative prejacent.

In the conditional case, the speaker only conditionally commits to a preference for the means. But the reasoning 'bridging' addressee goals and speaker preferences can go through even under the mere supposition that the addressee prefers the goal. Accordingly, (35a) can provide information about a means to a hypothetical addressee goal. If the speaker is willing to adopt the hypothetical goal (in case the addressee indeed has it), she hence can use the anankastic imperative to give advice on how-to in the same way as in the dialogic cases discussed in Section 3.4.

Advice on why-not-to.   We now have everything in place to explain why anankastic imperatives cannot be used to give advice on why not to pursue the hypothetical goal and why their speakers seem to unconditionally endorse both the prejacent (here: buying a bigger table) and the goal talked about in the antecedent (here: having the party at *Ad*'s place).

Recall that advice on why-not-to, like advice on how-to, proceeds by conveying that the prejacent is a means to the (hypothetical) goal. As we just saw, the addressee can infer such a relationship only on the assumption that the speaker is willing to take on the hypothetical goal if the addressee indeed has it. But then, the speaker cannot intend to dissuade the addressee and at the same time intend to convey a means-end relation (in order to do so).

We do not predict that conditional imperatives are *generally* ill-suited for giving advice to rescind a goal. The explanation above exploits the assumption that, in order to make sense of the speaker's utterance, the addressee must recover a means-end relationship between the goal and the prejacent. Hence, the account only excludes uses that give advice to rescind a potential goal by pointing out that the goal requires some unpalatable means. If the prejacent of the imperative does not concern a means to the mentioned goal, advice to rescind the (hypothetical) goal is unproblematic. This is of course desirable:[17]

(37)   a.   If you want to / are planning to have the party at your place, forget about it.
       b.   If you want to eat / have a craving for chocolate, think of something else to take your mind off it.

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[17](37a) arguably involves an antecedent that is about effective preferences, while (37b) involves an antecedent about a 'mere desire'. On that distinction, see Condoravdi & Lauer (2016).

Because of the indirectness of the contribution of the imperative meaning, our account of advice uses of imperatives appears, at first sight, to be more complicated than it needs to be. As we have shown, however, this indirectness gives our account true purchasing power. The reasoning bridging speaker and addressee preferences is precisely what explains the striking contrast between anankastic imperatives and modalized anankastic conditionals.

5.   Anankastic imperatives in the modal theory

The account we have laid out employs crucial features of our analysis of imperatives, in particular the fact that imperatives always create a commitment for a speaker preference, and, *a forteriori*, that advice uses rely on complex back-and-forth reasoning connecting speaker and addressee preferences. In this section we briefly consider how well an otherwise similar analysis that lacks these two features is equipped to handle anankastic imperatives, *viz.*, the modal analysis of Kaufmann (2012, 2016), Kaufmann & Schwager (2009).

This analysis is like the one used here in that it assumes that imperative sentences have the same dynamic effect as declaratives, that imperative logical forms contain an operator IMP, and that in conditional imperatives, this operator is embedded under a higher operator NEC. In contrast to our account, Kaufmann assumes that IMP has the semantics of a Kratzerian necessity modal, which is underspecified in the usual way. On the crucial cases—advice uses—she takes the modal ordering source to be constituted by the addressee's goals. Consequently, on Kaufmann's account, anankastic imperatives have exactly the same at-issue content as the corresponding anankastic conditionals. Accordingly, it is to be expected that both kinds of sentences can be used to give advice on how-to. The question is whether the modal analysis can also account for our observation that anankastic imperatives cannot be used to give advice on why-not-to.

Kaufmann assumes that, besides their modal nature, imperatives come with a number of conventional felicity constraints ('pragmatic presuppositions') that limit the range of uses imperatives can have and capture a notion of endorsement. It is these presuppositions that would have to exclude advice on why-not-to. In order for this to work, two main issues have to be resolved. The first is how these presuppositions project when IMP is embedded under a conditional operator, so as to ensure that conditional imperatives only come with conditional endorsement. On our account, this issue does not arise, as endorsement is carried by the main at-issue content of imperatives, hence conditionalizing the imperative straightforwardly conditionalizes the endorsement implication. The second issue for Kaufmann's account, which is specific to anankastic imperatives, is why they appear to endorse the goal mentioned in the antecedent, and hence cannot be used to give advice on why-not-to. On our account, this is because advice uses require reasoning bridging speaker and addressee preferences, but on Kaufmann's no such reasoning is required. Hence, the goal endorsement must arise in a different way, on the basis of the (projected) presuppositions.

Of course, Kaufmann would have the alternative option to assume that, even on advice uses, the imperative modal is interpreted in terms of speaker preferences and to rely on the same kind of pragmatic reasoning that we laid out in this paper. With this, our two accounts would converge further, as cases of advice have so far been one of the crucial arguments for allowing contextual variation in the parameters of the imperative operator.

6.　　Conclusion

Our initial observation was that there is a subtle but striking contrast between anankastic conditionals with modals and anankastic imperatives. The former, but not the latter, can be used to dissuade the addressee from pursuing the goal mentioned in the antecedent, by pointing out that it requires dispreferred means. This contrast, perhaps surprisingly, turns out to reveal something crucial about the semantics of imperatives and to provide evidence for an indirect account of advice uses that, despite appearances, starts from a strong endorsement component in the meaning of imperative sentences.

We have distinguished three varieties of (conditional and unconditional) endorsement, all of which we have shown to play some role in the semantics and pragmatics of imperative sentences. While *weak endorsement* for a proposition p is the absence of a dispreference for p and *strong endorsement* is the presence of a preference or p, the third one could be called *self-motivated endorsement*, which is strong endorsement in cases when the preference for p is self-motivated. According to our analysis, unconditional imperatives come with *unconditional strong endorsement* that is not necessarily self-motivated, conditional imperatives with *conditional strong endorsement* which implies *unconditional weak endorsement*. A predicate like *want*, on its effective preference reading, makes a claim about self-motivated endorsement. Given that self-motivated effective preferences are a special kind of effective preferences, this implies a consistency constraint between imperatives and *I want*-assertions.

A number of open questions remain. One is whether the kind of conditional commitment we derive (the weakest of the three options we discussed at the beginning of Section 4) is suitable for conditional imperatives more generally. We have argued that it works for utterances of conditional imperatives that serve as guarantees of some kind or other, such as cases of permissions and permission-like advice uses like (28a). But more investigation is needed to see whether it is also suitable for more directive uses, as well.

Another issue is whether the version of our account that we employed here (which assumes that IMP is part of the compositional semantics, rather than the convention of use) can be made to cover all cases of imperatives in complex sentences. As we mentioned in Section 3, conditional imperatives constitute only one horn of a dilemma. The other is constituted by 'Imperative and Declarative' sequences that receive a conditional interpretation. von Fintel & Iatridou (2017) argued that these call for a 'minimal' semantics of imperatives that keeps IMP out of the system of semantic composition. We have argued here that conditional imperatives (and anankastic imperatives in particular) call for a non-minimal semantics (by demonstrating how such a semantics can derive the facts). A semantics that deals with both phenomena at once is still lacking. We consider this issue the most urgent challenge for theories of imperatives going forward.

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