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Iffy Endorsements

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Abstract

Theories of imperatives differ in how they aim to derive the distributional and functional properties of this clause type. One point of divergence is how to capture the fact that imperative utterances convey the speaker's endorsement for the course of events described. Condoravdi & Lauer (2017) observe that conditionals with imperative consequents (conditionalized imperatives, CIs) are infelicitous as motivations of advice against doing something and take this as evidence for an analysis of imperatives as encoding speaker endorsement. We investigate CIs in further contexts and argue that their account in terms of preferential conflicts fails to capture the more general infelicity of CIs as motivations for or against doing something. We develop an alternative in which imperatives do not directly encode speaker preferences, but express modalized propositions and impose restrictions on the discourse structure (along the lines of Kaufmann, 2012). We show how this carries over to conditionalized imperatives to derive the behavior of CIs, and conclude with a discussion of more general problems regarding an implementation of conditional preferential commitments, an issue that can be avoided on our account of imperatives.

1 INTRODUCTION

Imperatives like (1a) and modalized declaratives with second-person subjects like (1b) have much in common. Both are in some sense about the best course of action for the addressee to take. In pairs like (1), which share the same prejacent, a speaker who utters the imperative typically believes that some version of the corresponding modalized declarative is true.

(1) a. Take an apple.
b. You { should / must / ought to } take an apple.

However, imperatives and modalized declaratives also differ in important ways, especially in distribution and functional profile. For instance, while in many languages it is possible for imperatives to be embedded, the range of embedding contexts in which they can occur is typically severely constrained, whereas modalized declaratives can embed much more freely. At the same time, the range of speech acts that matrix imperatives can be used to perform is

more constrained than that of modalized declaratives. Most prominently, (1b) can be used for *assertions* about what is required, which clearly is not an option for (1a).[1]

Researchers who study the semantics and pragmatics of imperatives have to explain both their similarities and their dissimilarities with modalized declaratives. Various approaches towards this goal have been pursued. Broadly speaking, they all agree in seeking to explain both the distribution and the functional profile of imperatives in terms of three parameters: semantic content, the role of contextual parameters in the interpretation, and the update effect on the context. There is much variation, however, in the allocation of the explanatory burden between these factors and, more generally, in the specifics of the implementation.

Adjudicating between the approaches proves difficult because imperatives resist standard criteria for the evaluation of semantic theories: we cannot hold theories against intuitions about truth-conditions and verifying situations; intuitions about inferential behavior suffer from unclarity of what semantic value is supposed to be preserved, and the options for studying imperatives embedded in complex constructions are at best limited (Kaufmann, 2021). However, imperatives can occur in the consequents of hypothetical conditional clauses, like (2), which we will call *conditionalized imperatives* (CIs).

(2) If you are hungry, take an apple.

In the following, we will argue that these constructions offer valuable clues on how speakers use imperatives to endorse particular courses of action. To make this point, we will first compare a few recent theories of imperatives that take a stance on what we take to be the relevant data points. We will then examine two of them in detail, one based on a modal semantics and the other based on the notion of public effective preference. Both aim to explain endorsement and extend to CIs. We will argue that for the public preference based approach, this extension to CIs ultimately fails to capture the full range of data (Sect. 3.2), and we will offer an alternative account couched in the modal operator based theory (Sect. 4). Finally, we discuss further technical and conceptual challenges for the idea of extending a preference based account to CIs (Sect. 5).

2 THE SEMANTICS OF IMPERATIVE CLAUSES

2.1 *Theories of imperatives*

Various accounts have been proposed to capture the distribution and functional profile of imperative clauses, as well as their similarities and dissimilarities with modalized declaratives.

One proposal, due to Portner (2005), maintains that imperatives denote *properties*, not *propositions* (as declaratives do). This particular sentential denotation is associated with a distinct update mechanism when an imperative is successfully used in context: the update affects the addressee's "To-Do list", rather than (directly) the common ground. An approach along these lines is favored by Fintel & Iatridou (2017) on account of its relatively lean semantics.

1 Note that (1a) can also be used in ways that seem to correspond more closely to declaratives containing possibility modals like canand may, specifically for offersand to express acquiescence. For discussion and attempts to derive the contrasts from exhaustification via alternatives, see Kaufmann (2012), Oikonomou (2016), and Francis (2019).

Another proposal, due to M. Kaufmann (Schwager, 2005a,b, 2006a,b, 2011; Kaufmann & Schwager, 2011; Kaufmann, 2012, 2019, henceforth MOP for *Modal OPerator analysis*), is to treat imperatives semantically on a par with modalized declaratives, accounting for the differences in functional profile in terms of conventionalized felicity conditions. Thus semantically, (1a) is similar to (1b). This similarity is grounded in an assumed structural parallelism: the imperative has a covert modal operator Imp whose interpretation is of the same type as that of the overt weak necessity modals in (1b) (though not necessarily synonymous with any one of them). But in addition to its modal at-issue semantics, Imp triggers presuppositions which restrict the contexts in which it can be felicitously used. These contexts are precisely the ones in which the corresponding modal declaratives would receive a *performative* interpretation. In this way, MOP explains both the restricted distribution of imperatives and the widely shared intuition that they do not have truth conditions: their obligatorily non-descriptive use renders the underlying truth-conditions intuitively inaccessible to speakers.[2]

A third proposal, due to Condoravdi & Lauer (2012), is similar to MOP in some respects: they likewise assume that the logical form of imperatives includes a propositional operator Imp whose semantic interpretation involves prioritizing modality. The difference lies in the degree to which this semantic denotation incorporates elements that are specifically tied to canonical uses of imperatives. In particular, Condoravdi and Lauer (henceforth C&L) assume that an utterance of an imperative commits the speaker to a *Public Effective Preference* (henceforth PEP) for the truth of the prejacent – for instance, for the addressee's taking an apple in (1a). We dub this proposal 'PEP' and will say more below on its relationship to MOP.

For a fourth option, Starr (2020, 2011) also builds on imperatives as expressing preferences, but develops a genuinely dynamic account under which imperatives update a preference order on the information state of the conversation.

All of these accounts assume that imperatives crucially involve *prioritizing* (that is, deontic, bouletic, or teleological) modality. But they differ in the way in which this modality comes into play. For Portner, the locus of the modality is not the meaning of the imperative *per se*, but the discourse role of the To-Do List that the speaker manipulates by uttering it. The To-Do List records criteria that are deemed relevant for the evaluation of the addressee's future actions, hence also for the interpretation of modalized declaratives describing what is necessary or possible in the relevant sense.

For MOP, the modality is encoded in the semantic denotation. Crucial aspects of this denotation depend on contextual parameters, in line with the overall Kratzer-style approach to modality, and felicity is constrained by the presuppositions. Aside from enforcing the performativity of imperatives, these presuppositions also constrain the modal flavor in such a way that imperatives end up expressing propositions about rational courses of action for the addressee, thus taking on some of the work that Portner places into the role of

2 Gutzmann (2015) proposes an account that combines propositions as expressed by imperatives with use-conditions. The definition he offers for use-conditions makes them come out as a form of Stalnakerian pragmatic presuppositions. We thus consider the account to be related in spirit. A possible difference concerns local interpretation or filtering, both of which are generally taken to arise with presuppositions but not use-conditions. Gutzmann (2015) does not consider CIs (or other types of embedded imperatives). The data discussed in Sect. 4 might provide further insights into exactly what kind of non-at-issue meaning imperatives are associated with.

the To-Do List. In those contexts in which the imperative is felicitous, the proposition it denotes is simply added to the Common Ground; in this regard imperatives do not differ fundamentally from declaratives.

PEP is similar to MOP in that modality is part of the conventional meaning. However, for PEP the modal meaning of Imp is inherently more constrained than that of overt modals occurring in declaratives. For instance, while (1b) can be used to report the preferences of someone other than the speaker (e.g., the addressee or some third person), under PEP (1a) cannot: it is semantically tied to *the speaker's* preferences. MOP concedes that this association may be present as a (strong) preference, but insists that it is ultimately subject to pragmatic parameters, thus MOP does allow for more flexibility on this point.

For Starr, the non-assertive nature is captured by the fact that imperatives update a preference order imposed on the worlds compatible with what is common ground, and along standard assumptions of dynamic theories, it extends naturally to conditionalized imperatives. However, little is said about the pragmatic role of the preference order in question, which is why, as far as we can tell, the account as it stands does not rule out any of the infelicitous sequences considered in the following. Adding a pragmatic component to solve the problem would most likely add crucial new aspects to the account that might change its predictions on data it is currently devised to cover. We thus refrain from speculations and leave a comparison with Starr's account to future research. Portner's static property-based account does not extend naturally to CIs.

Thus our exploration of the desiderata resulting from CIs will focus specifically on MOP and PEP.

2.2 *Endorsement*

The issue of the speaker orientedness of the preferences has become something of a yardstick in the evaluation of competing theories. Clearly, an imperative commits the speaker to endorsing the course of events described by its prejacent in some sense. Openly committing to a strong (*effective*, in the sense of PEP) preference to the contrary results in infelicity, cf. (3).[3]

(3) #Study logic. But I absolutely don't want you to.

It is tempting to account for this phenomenon by hardwiring into the semantics of the imperative a speaker preference for the prejacent. This has in fact been proposed at least by Bierwisch (1980), Condoravdi & Lauer (2012), and Oikonomou (2016). While accounts along these lines have no problem accounting for the infelicity of (3), they are hard pressed to capture imperatives used in contexts that do not obviously support an actual

3 Conflicts along these lines are reported for the modal should by Frank (1996), who emphasizes the similarity with Moore's paradox for epistemic modality:

(i) #You should go to Paris, but in fact, I think this is not advisable. (Frank, 1996: 11a)

Schwager (2006b) (Kaufmann, 2012: 158f) discusses examples of that sort for imperatives. The existence of imperative-like effects with should is prima facie surprising in light of the overall differences between modal verbs and imperatives. It is probably best understood as indicating that, absent a contextually salient body of preferences or rules that re not anchored in the speaker and

that the prioritizing SHOULDcould anchor to, contextual settings similar to the ones required by the imperative are inferred.

speaker preference for the prejacent. Cases in point include *disinterested advice* as in (4a), suggestions, and permission(-like) uses of imperatives, e.g. (4b).

(4) a. A: How do I get to New York?
B: Take the bus.
B': #I want you to take the bus.

b. *host, offering casually:*
A: Have another cookie.
A': #I want you to have another cookie.

It is unclear to what extent the utterer of these imperatives can be said to hold an actual preference for the addressee's taking the bus (to get to New York) or having a cookie. It seems more natural to assume that they are either trying to be helpful and inform the addressee of the best strategy to resolve a practical problem (getting to New York) without themselves having any preference regarding the addressee's actions, or to remove a (perceived) obstacle standing in the way of the addressee's fulfillment of their (presumed) desire of having another cookie. In line with this, neither (4a) nor (4b), on the relevant use, can be felicitously replaced with the corresponding desiderative declarative. At the same time, even in these cases, speakers cannot express an effective preference to the contrary.

If imperatives are semantically tied to speaker preferences as they are for PEP, followups like *but I (absolutely) don't want you to* are automatically predicted to be infelicitous; but then something needs to be said to accommodate cases of disinterested advice and permission(-like) imperatives. C&L argue that these readings involve a kind of pretense on the speaker's part: the speaker treats the addresse's preferences as if they were their own, for the sake of the conversation ("cooperation by default"). For MOP, on the other hand, these uses do not pose much of a challenge, since speaker orientedness is merely the most prototypical case. What matters for MOP is that the preferences are relevant to the addresse's choices, and this is the case on these readings. In this way, both approaches have a way to account for uses on which the preferences are not (actually) the speaker's. According to PEP, however, they rely on a pragmatic strategy of adopting the interlocutor's preferences for the purposes of the ongoing conversation (a strategy C&L assume to be blocked lexically for desiderative predicates like *want*).

Conditionalized imperatives (CIs) turn out to be of particular interest with regard to the proper theoretical place of speaker endorsement. This was first pointed out by C&L, who argued that CIs provide evidence for encoding speaker endorsement in the semantics. To prepare the ground for our discussion (and ultimate rejection) of their argument, we first introduce their account in more detail.

3 WHAT CONDITIONALIZED IMPERATIVES CAN AND CANNOT DO

Modal accounts of imperatives, such as PEP and MOP, generally treat them as modal statements with added contextual restrictions. This means that in contexts in which both a modalized declarative sentence and its imperative counterpart are felicitous, they should behave similarly. Although this prediction is largely borne out, there are in fact contexts in which the two come apart. Condoravdi & Lauer (2017) discuss such a case and argue that it is particularly useful in

adjudicating between PEP and MOP. The examples they adduce involve mostly conditionalized imperatives, but we add some context to show that the issue is not limited to conditionals.

3.1 *Inference patterns*

Modal accounts of imperatives predict that pairs like (5) are semantically similar: Both the imperative in (5a) and the modalized declarative in (5b) have a modal operator with the prejacent *'you open the window'*; the modal operators may vary along certain dimensions, such as strength and restrictions on modal flavors, but controlling for variation along those lines, they should behave similarly.

(5) a. You { should / have to / must / ...} open the window.

b. Open the window.

This prediction seems to be borne out for some patterns, such as Deontic Modus Ponens, the inference from *'p'* and *'if p, O q'* to *'O q'*. (Here *'O'* is a modal operator of the relevant kind.) (6) and (7) instantiate this pattern. Intuitively, in both cases the third line is a consequence of the first two.

(6) **Deontic Modus Ponens (Modal)** B: It's hot inside.
A: If it's hot inside, you should open the window. A: So you should open the window.

(7) **Deontic Modus Ponens (Imperative)**
B: It's hot inside.
A: If it's hot inside, open the window. A: So open the window.

A similar pattern is observed when the conditional premise is *anankastic*. Simply put, these are conditionals whose antecedents name a goal or desire and whose consequents name a means towards satisfying that desire or attaining that goal (Sæbø, 2002). Condoravdi & Lauer (2016) argue that such readings arise when the desire statement in the antecedent receives an effective-preference reading and the modal in the consequent is interpreted teleologically. (8a) is a typical example of an anankastic conditional, with the modal *'have to'* in the consequent. (8b) has an imperative consequent. The effective-preference reading of the desiderative predicate in the antecedent is intended to be the same in both of (8a,b).

(8) a. If you want to do semantics, you have to study logic.
b. If you want to do semantics, study logic.

In the inference patterns below, we also assume that *'want'* has the same effective-preference reading in both premises.

(9) **Deontic Modus Ponens (Anankastic conditional)** B: I want to do semantics.
A: If you want to do semantics, you have to study logic. A: So you have to study logic.

(10) **Deontic Modus Ponens (Conditionalized imperative)** B: I want to do semantics.

A: If you want to do semantics, study logic. A:
So study logic.

In both (9) and (10), the inference from the first two sentences to the third seems to go through. Thus Deontic Modus Ponens seems valid with both overt modals and imperatives in the conditional consequent: contingent necessity turns into necessity in case the antecedent is true. The modal and imperative conclusions in these examples need not necessarily be read as advice, although such a reading is available.

Differences between overt modals and imperatives show up when we consider slightly different inference patterns. The triplets in (11) and (12) instantiate a pattern we call *Advicenot-to*, following Condoravdi & Lauer (2017). They observe that while the mini-dialog in
(11) is coherent, the imperative variant in (12) is odd.

(11) **Advice-not-to (Modal)**
B: I'm considering doing semantics.
A: If you want to do semantics, you have to study logic. A:
So don't even think about it.

(12) **Advice-not-to (Imperative)**
B: I'm considering doing semantics.
A: If you want to do semantics, study logic. A:
??So don't even think about it.

In both (11) and (12), the third sentence is best read as advice to refrain from doing semantics. This is coherent in contexts in which B is known to have an aversion towards studying logic, and where studying logic would be required if she were to do semantics. This latter necessity is explicitly stated in the conditional premise of (11) and it supports the corresponding imperative in (12). Clearly the crucial contrast in pairs like these is between modalized declaratives and imperatives in the consequent of the conditional; the patterns are identical otherwise. The question then is what difference between modals and imperatives is responsible for the contrast.

On C&L's PEP account, the culprit is the *speaker endorsement* that is optional in modals but obligatory in imperatives. Here is their story, in a nutshell. Recall that for them imperatives are always tied to speaker preferences, even in cases like disinterested advice: there, they argue that the speaker treats an addressee goal *g* as her own ("cooperativity by default"). "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* as one of her own, and that neither *g* nor anything that is necessary for realizing *g*, is in conflict with any of her existing preferences" (Condoravdi & Lauer, 2017, Sec. 3.3).

Presumably in both (11) and (12) the idea would be that in the conditional premise the speaker takes on (hypothetically) the addressee's preference for doing semantics and states that studying logic is a necessary means towards that goal. The difference between the modal and the imperative is that the latter additionally conveys that neither the goal (doing semantics) nor the means (studying logic) conflicts with the speaker's own preferences. The third sentence then expresses a speaker preference *against* the addressee's doing semantics. This conflicts with the preceding conditional imperative in (12), but not with the preceding conditional declarative statement in (11).

3.2 *Problems with non-conflicting preferences*

Although this story may sound plausible on the face of it, we will show in Section 5 that it is surprisingly hard to formally implement, and that the specific version in Condoravdi & Lauer (2017) indeed fails to develop a satisfactory theory of conditional speaker preferences. But before we turn to more general considerations about conditional discourse commitments, we will show that the story itself is empirically inadequate because it fails to generalize beyond the specific type of examples considered by C&L.

Crucially, the pattern discussed above is not restricted to Advice-not-to. The exchanges in (13) and (14) are close relatives of those above; the only difference is that speaker A considers studying logic a good thing in its own right and is all in favor of the addressee's doing semantics for that very reason. In such a context, (13) is perfectly felicitous, yet (14) is odd.

(13) **Advice-to (Modal)**
B: I'm considering doing semantics.
A: If you want to do semantics, you have to study logic. A: So yeah, do semantics.

(14) **Advice-to (Imperative)**
B: I'm considering doing semantics.
A: If you want to do semantics, study logic. A: ??So yeah, do semantics.

PEP does not explain this contrast because it crucially relies on a conflict between implied (existing or adopted) speaker preferences; yet there is no conflict in these cases. The fact that both Advice-not-to (12) and Advice-to (14) are degraded seems to us to hint at a general problem with *Advice-whether-to*. But this does not fall out from PEP.

In fact, these patterns are not restricted to conditionals. C&L use (15) to illustrate the problem for Advice-not-to. The example is similar to the conditional case above, but it lacks an *'if'*-clause.[4]

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

Here, too, C&L's explanation for the infelicity of the second imperative following the first draws on the (purported) conflict between the speaker preferences expressed in the two. But that this is not right, or at the very least not the full story, is shown once again by the fact that Advice-to exhibits the same pattern as Advice-not-to: Suppose speaker B has for some time thought that A should get rid of his tiny dining table and get himself a bigger one, and realizes in A's wanting to have the dinner at his place a good opportunity to finally get him to act. In this context there should be no conflict between the imperatives in (16); yet the pattern is similar to (15).

4 It is debatable how different (15) is from the conditional examples, given that much of the relevant reasoning is presumably still there, just happening at the discourse level rather than in the compositional semantics. Also, it is often assumed that the proform 'then' in (15) refers anaphorically to the preceding sentence uttered by A and enters the compositional semantics of B's sentence in much the same way as an 'if'-clause (Ebert etal., 2014; Schlenker, 2004; but see Biezma, 2014). We sidestep such considerations and limit ourselves to showing that the problem generalizes to imperatives used for Advice-to in these cases as well.

(16) A: I want to have the dinner at my place.
B: (Then) Buy a bigger dining table. #So yeah, host that dinner.

We conclude again that the pattern is not restricted to Advice-not-to, but shows up more generally with Advice-whether-to. C&L's PEP does not generalize to these data.

4 IMPERATIVES AND DISCOURSE STRUCTURE

We now proceed to outline our own analysis. As noted above, several empirical and conceptual issues lead us to believe that the PEP account in terms of conflicting commitments is on the wrong track. Our own proposal instead appeals to an altogether different ingredient of the theory: the practical *decision problems* that imperatives, conditional or unconditional, address.

In a nutshell, the idea is this. MOP assumes that imperatives which are about possible courses of action for the addressee (and this is the vast majority of uses of imperatives)[5] presuppose the existence of a unique salient *decision problem* faced by the addressee, and give information that is relevant (by the speaker's lights) to solving that decision problem. This is not only true for matrix imperatives: conditional imperatives likewise give information pertinent to a presupposed decision problem. The infelicity of conditional imperatives in certain argument patterns follows from general principles of the behavior of presuppositions in conditionals—projection or (local) satisfaction—and the particular modal flavor involved in imperatives.

4.1 *The modal operator theory of imperatives*

We start with a very brief outline of the framework in which our account of conditional imperatives is spelled out. For more details and supporting arguments, the reader is referred to Kaufmann (2012); Kaufmann & Schwager (2011).

As noted above, prioritizing modals can be used descriptively or performatively. Thus (17a) can be used to *report* that leaving is obligatory or permissible, or alternatively to *issue* an order or a permission. In the literature on modals, it is generally assumed that this variability is due not to a semantic ambiguity of the modals, but rather to the interaction between an invariant semantics and contextual factors. In other words, in certain contexts, a modalized sentence like (17a) takes on the special trappings of performativity–that is, in particular, self-verification (when needed) and perceived lack of a truth value (Kamp, 1973, 1978; Lewis, 1979a). The task for semantic theory is then to determine which contextual factors are responsible for this effect and how these factors interact with the semantic denotation.

(17) a. You { must / may } leave.
b. Leave.

The basic intuition behind MOP is that imperatives are functionally similar to performatively used modals. Thus for instance, (17a) and (17b) can largely be used interchangeably in contexts in which the former has a performative use; the difference is that in contexts in which (17a) could only receive a descriptive interpretation, (17b) is infelicitous.

5 A notable exception are cases in which no individual is taken to be in control of the course of events described by the prejacent, amounting to wish-imperativesas discussed briefly in Sect. 4.1.

Pragmatically, this also means that in uttering an imperative, the speaker signals that she takes the context to be such that it is felicitous, thus imperatives are also a means for the interlocutors to coordinate their views on the context.

How does this restriction to certain contexts come about? M. Kaufmann (Schwager, 2006b; Kaufmann, 2012; Kaufmann, 2019) proposes to capture it in terms of *presuppositions*, understood here as preconditions on the input context that must be met in order for an udpate with the imperative to succeed.

Semantically, under this approach, imperatives have a fairly run-of-the-mill propositional denotation, shown schematically in (18). Kaufmann assumes a covert imperative operator Imp which is interpreted as a necessity modal with certain restrictions on the modal flavor encoded in the accessibility relation *R*. Thus Imp is basically the same kind of modal as deontic *'must'*, *'have to'*, or *'should'*, although nothing requires it to be synonymous with any particular lexical modal.

(18) '[Imp [you leave]]' ^{R}(addressee leave)

The bulk of the explanatory work in this framework is done by the presuppositions that Imp triggers, given in (19). They restrict its felicitous use to those contexts in which a corresponding modalized declarative would be interpreted performatively.

(19) Presuppositions of [[Imp]]^{c}(*R*)(*p*):

a. Speaker$_c$ has perfect knowledge regarding ^{R}; **and**

b. Speaker holds possible both *p* and ¬*p*; **and**

c. **either** no individual has control over *p*; [wish imperatives] **or** the context is *practical*; that is, [practical imperatives]

(i) the current Question Under Discussion (QUD$_c$) is a *decision problem* for the addressee; **and**

(ii) the prejacent *p* constitutes a (partial) *answer* to QUD$_c$; **and**

(iii) the modal flavor encoded in the accessibility relation *R* counts as *decisive* in *c* (relative to QUD$_c$)

Some clarification is in order. First, the contextual parameter that is crucially involved in evaluating the conditions is the common ground, defined as *mutual joint belief*; its formal representation is derivable from the discourse participants' individual doxastic accessibility relations as suggested by Stalnaker (2002). In other words, for an imperative to be felicitous in a context *c*, the participants in *c* must believe that all the conditions in (19) are met, believe of each other that they hold these beliefs, and so on.[6] In particular, a speaker using an imperative is thereby committed to believing that the utterance context meets these requirements.

6 Stalnaker (2002) himself notes that mutual joint belief might be too strong a notion to capture the full range of actual discourse situations, and tentatively suggests a notion of acceptance (for the purposes of the ongoing conversation) which need not necessarily coincide with belief. We agree that this is probably right, but we do not pursue the question further. For our current purposes, all that is needed is a joint attitude which can be represented by a set of accessible worlds. We assume that both belief and acceptance lend themselves to this formal treatment; the difference between them is immaterial to our concerns.

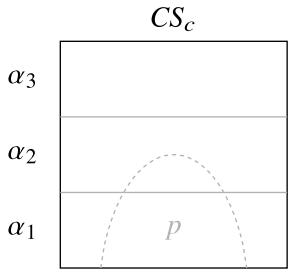


Figure 1 Decision problem as QUD: the addressee's action alternatives partition the context set CS_c into three mutually exclusive and jointly exhaustive cells. The prejacent p provides a (partial) answer to this QUD if it is consistent with at least one of them (realism) and inconsistent with at least one of them (informativity).

Secondly, the notion of "perfect knowledge" in (19a) must be understood in a somewhat restricted sense. It is not meant to require that the speaker is "omniscient" with regard to the modality, in the sense that she can tell for any proposition whatsoever whether it is possible or necessary. Rather, the notion is to be understood vis-à-vis the practical decision problem in (19b): the speaker has all the information that is relevant to the addressee's choice.

Finally, we are here only interested in *practical* contexts, ignoring the case that no individual has control over the truth of the prejacent. This latter case gives rise to pure "wish readings" of imperatives, as is natural in cases like *'Get well!'* or imperatives with settled prejacents, such as *'Please be tall!'*. Thus the first disjunct in (19c) is not applicable in the cases we are considering, and we ignore it here. What exactly makes a context practical is laid out in (i)-(iii) of (19c).

Formally, the relevant decision problem is modeled as a partition of the context set *CS* (the set of possible worlds modeling mutual joint belief); see Figure 1. The imperative gives a partial or total solution for it if its prejacent is (i) compatible with at least one of the cells in the partition and (ii) incompatible with at least one of them. We dub these two conditions *realism* and *informativity*, respectively. In the simplest case, the prejacent is contextually equivalent to one of the cells. This is the case in the examples we consider below. In terms of formal representation, the decision problem is the same kind of object as a question ("What will the addressee do?") and the requirement on the imperative amounts to the condition that its prejacent provide a (partial) answer to it.

How exactly the decision problem is modeled in a formal representation of the context is a question on which we have no strong opinion and do not take a stance. Ordinary presuppositions are typically modeled as propositions which must be entailed by the context set—usually both are sets of worlds, and the presupposition must contain the context set. A decision problem could likewise be modeled as a set of worlds (those at which the addressee faces a unique decision problem with the requisite properties) which must contain the context set. Another way would be to represent the decision problem as a set of propositions (or an equivalence relation on worlds) in its own slot in the tuple of contextual parameters, separate from the context set but with the requirement that its union contain the context set. Or, finally, one could simply represent the context set itself as a state in which the decision problem is raised as an issue, in the style of Inquisitive Semantics (Ciardelli *et al.*, 2013). In any case, we take it that nothing hinges on this

particular design choice and that the account we are developing here could be integrated with any one of them.

The last item in the definition, (19c-iii), states that the modal flavor of the imperative is mutually believed to be *decisive*. This notion is further specified in terms of the following three elements.

(20) **Decisive modality:** Kaufmann & Kaufmann (2012) Modal flavor R counts as *decisive* in context c with respect to decision problem $_a$ for agent a (*here: the addressee*) iff R is taken to encode the relevant criteria for solving it. This entails that: a. a will try to find out whether ^Rp for all $p \in_a$

b. if a comes to believe ^Rp for some $p \in_a$, then a will aim to bring about p

c. if any participant b in the conversation in c (*speaker or addressee*) holds it possible that ^Rq for any proposition q, then it is not the case that b effectively prefers that $\neg q$.

Overall, the point is that if all the presuppositions in (19) are satisfied, then the imperative has an immediate action-guiding effect: it feeds directly into the decision the addressee is facing, giving guidance that both participants take to be reliable, pertinent and uncontroversial, and which will be used without further deliberation or argument.

4.2 *The modal operator theory of conditionalized imperatives*

We assume, following earlier proposals on conditionalized prioritizing modals (Frank, 1996) and imperatives (Kaufmann & Schwager, 2011), that in a conditionalized imperative *'if p, q!'* the antecedent restricts a covert epistemic necessity modal (arguably relativized to a stereotypical ordering source) whose prejacent is the imperative *'q!'*; thus the imperative is embedded in the main clause and the imperative operator is not restricted by the *'if'*-clause.[7] This is schematized in (21), where the box stands for the covert necessity operator. (21a) is true at a world w just in case the imperative is true at all (maximally stereotypical) worlds w that are epistemically accessible from w.

(21) a. If it is hot, open the window.

b. $^{\text{epist}}{}_{\text{stereo}}$[it's hot] [Imp you open the window]

Save for the covert necessity operator, the truth conditions we assume for conditional imperatives are thus not particularly noteworthy. But since presuppositions play a paramount role in MOP, their behavior in conditionals matters a great deal and deserves some scrutiny.

In general, following standard assumptions about presuppositions in conditionals (Heim, 1983; Karttunen & Peters, 1979; Lewis, 1979b; Sandt, 1992), we expect two modes of satisfaction to be available for them, one global and one local. The pair in (22) illustrates.

(22) a. If we get home late, we'll have to clean the litter box. [global]

b. If we buy a cat, we'll have to clean the litter box. [local]

7 Condoravdi & Lauer (2016) propose an account of anankastic conditionals which is inspired by these earlier proposals and likewise assumes that the prioritizing modal is embedded in the consequent and not modified by the 'if'-clause.

In each case, the definite description in the consequent triggers the presupposition that the plural subject ("we") is associated with a unique (contextually relevant) litter box (presumably because they own a cat, though that is not entailed). In (22a) this becomes a presupposition of the entire conditional: for it to be satisfied, it must be taken for granted in the context of the conversation. If this is the case, it is inherited by the local context created in the course of the interpretation of the

conditional.[8] If it is not satisfied in the global context, it will be missing in the local context as well.[9]

In (22b), in contrast, it is implied by the antecedent, hence locally satisfied, and therefore does not become a presupposition of the whole sentence.[10] The only difference between the sentences in (22) is the content of the antecedent. In general, it is through the interaction of content and world knowledge, modulated by prosody and pragmatic factors like salience, that the distinction between global and local interpretation is drawn. Finally, of course, (global or local) *accommodation* can rescue the felicity of an utterance of either sentence in a context in which its presuppositions are not satisfied (Heim, 1983; Lewis, 1979b).

The presuppositions of interest here are those of the imperative operator, specifically the existence of a unique salient decision problem faced by the addressee. MOP does not attribute any unusual projection behavior to this presupposition, thus we predict that like other presuppositions, it can be satisfied globally or locally. It turns out that both interpretations are indeed available, and that like ordinary presuppositions, the choice between the two is driven by the interaction between content, world knowledge and pragmatic factors.

On any of the formal implementations sketched above, the decision problem is modeled as a partition of the context set, that is, a question denotation.[11] We take the decision problem in such a *practical context* to play the role of the question under discussion (QUD; Roberts, 1996) in an utterance context concerned with the exchange of factual

8 We assume a Ramseyan dynamic interpretation of conditionals which is widely adopted in the linguistic literature (Heim, 1983; Kaufmann, 2000, i.a.): in the first step, a local context is created by singling out the antecedent-worlds, in the second step the matrix clause is evaluated in this derived context.

9 That is, unless some peculiar piece of world knowledge establishes a link between getting home late and being associated with a (unique) litter box. For instance, suppose the subjects dislike cats and made a bet with their neighbor that they would get home early; if they are late, they lose and will not only have to put up with the fact that he'll get himself a cat (as he'd been wanting to for a long time), but they'll even have to the clean the new cat's litter box for a week. In such a situation, the interpretation of (22a) is similar to that of (22b).

10 There is considerable debate in the literature as to whether the globally satisfied presupposition of (22a) is itself conditional ('ifwegethomelate,weareassociatedwitha(unique)litterbox') or not ('weareassociatedwitha(unique)litterbox') (Geurts, 1996; Lassiter, 2012, i.a.). This is an important question which, however, we are not going to discuss at any length in this paper. For our purposes it is sufficient to note the contrast between global and local satisfaction, without committing to a particular stance on the exact shape of the former.

11 Depending on which implementation is chosen (Sec. 4.1 above), the presupposition that the QUD is of a certain nature may be a regular (propositional) presupposition or may constitute a separate felicity condition. We assume that whichever implementation is chosen, the projective behavior follows what is known for other presuppositions.

information, and thus refer to it as such.[12] If such a partition is given in the input context, the restriction of the context set to the antecedent-worlds in the course of the interpretation of a conditional also restricts the partition to the antecedent-worlds. An imperative in the matrix clause

is then interpreted relative to this restricted partition, and is felicitous if all its presuppositions are satisfied relative to it (in particular, the conditions of realism and informativity).

To bring out the distinction between global and local satisfaction, we manipulate the pragmatic factors that (in addition to content) influence the interpretation.[13] We make the decision problem (the question under discussion) salient by prepending an explicit question to the example. Thus in the mini-dialogue in (23), it is clear that the addressee faces the predicament of what to do with the money independently of whether the antecedent is true. This makes the global satisfaction of the presupposition salient.

(23) A: What's a good way to spend this chunk of money? B: If you want to host the dinner, buy a bigger dining table. [global]

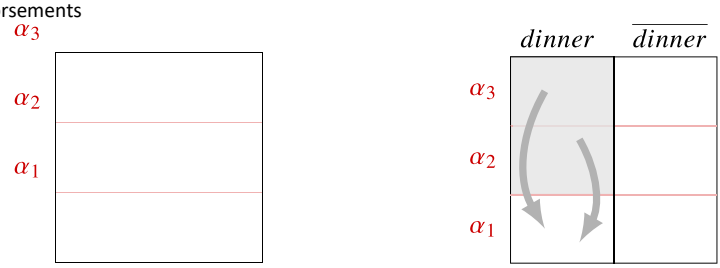
Suppose the addressee must choose between three courses of action; call them α_1,α_2,α_3, as depicted in Figure 2. The conditionalized imperative is interpreted in two steps: first, the context set is restricted to those worlds at which the antecedent is true (i.e., at which the addressee wants to host the dinner); second, the imperative in the matrix clause is interpreted relative to this restricted set of worlds. The restriction to the antecedent-worlds (the left-hand side in the figure) also restricts the decision problem *'what to do with the money'* to the hypothetical problem *'what to do with the money given that A wants to host the dinner'*, which is then addressed by the matrix imperative. Suppose for simplicity that the prejacent of the imperative, *'A buys a bigger dining table'*, is one of the choices, say α_1, as in Figure 2. Notice that the restriction of α_1 to the antecedent-worlds is realistic (i.e., overlaps with at least one action) and informative (i.e., rules out at least one action) with respect to the restricted decision problem. Thus the imperative's felicity conditions are met, and it is interpreted as giving instructions pertinent to the given decision problem. Overall, what the conditional imperative asserts in this context is that among the antecedent-worlds, those at which the prejacent is true are preferred. The conditional imperative is silent on worlds in the context set at which the antecedent is false (the right half of the picture in Figure 2b), so the advice it conveys is contingent on the truth of the antecedent.

In contrast, local satisfaction of the presupposition is available (and global satisfaction therefore not required) when the if-clause, in the given context, raises an appropriate decision problem in itself.[14] Consider the mini-dialogue in (24). The question in (24A) is conditionalized. Following Isaacs & Rawlins (2008), in turn inspired by S. Kaufmann (2000), we assume that the crucial semantic contribution of a conditional question is a

12 We do not require that the QUD partition the entire logical space. Questions can have presuppositions, and the QUD may correspond to the denotation of a presupposition-carrying question.

13 To the best of our knowledge, the interaction between QUD and hypothetical conditionals has received relatively little systematic attention in the literature. For a notable exception concerning specifically counterfactuals, see Ippolito (2003).

14 This is similar to the "filtering" of an ordinary presupposition by an 'if'-clause that entails it: an interrogative presupposition is "filtered" by an antecedent that raisesit.



(a) (b)

Figure 2 Two steps in the interpretation of (23B): (a) the decision problem faced by the addressee; (b) the conditional imperative states that within the *'dinner'*-worlds, those in α_1 outrank the others. Here and below, the arrows indicate the relative ranking of (equivalence classes of) worlds under the preference order, leading from less to more preferred ones. Shading indicates dispreferred worlds.

partition of the set of antecedent-worlds.[15] Note also that the antecedent-worlds are made salient and available for modal subordination, so that the explicit mention of the antecedent in (24B) is optional.

(24) A: What do I have to do if I want to host the dinner?
B: (If you want to host the dinner,) buy a bigger dining table.

In other words, in (24) we have a *contingent* decision problem which arises only if the antecedent is true. However, as a comparison of Figures 2 and 3 shows, the matrix imperative has the exact same interpretation in its local (derived) context. What is crucial in both cases is that the imperative, in its local context (i.e., under the supposition of the antecedent), gives a (partial) answer to the relevant (restricted) decision problem.

In (24), the (contingent) decision problem has been made salient by a conditional question. While we take this to be useful for illustration, we should note that local satisfaction may also occur in contexts in which no contingent decision problem is salient.[16] For instance, (25) may well be felicitous even if the addressee has no idea that the question whether to get on an illegal taxi will present itself if she (ever) arrives at the airport.

(25) If you (ever) come in through the airport, don't get on one of the illegal taxis that will be waiting at the curbside.

In this case the relevant decision problem is (locally) accommodated, just like other presuppositions triggered in the consequent (such as the existence of illegal taxis waiting

15 There is room for debate as to whether the propositions in the denotation of a conditional question include non-antecedent worlds or not. They do not in Isaacs and Rawlins's (2008) account, but do in early versions of Inquisitive Semantics (e.g., Groenendijk & Roelofsen, 2009). (More recent versions of Inquisitive Semantics do not define a denotation for conditional questions, but instead a special interpretation rule, an "inquisitive wrapper" around arbitrary non-inquisitive conditional connectives—e.g., Ciardelli etal., 2019. The denotation then depends on the underlying noninquisitive conditional, on which Inquisitive Semantics remains silent.) This issue is orthogonal to our concerns here. All that matters in (24) is what happens to the antecedent-worlds.

16 We thank an anonymous reviewer for bringing up this type of example.

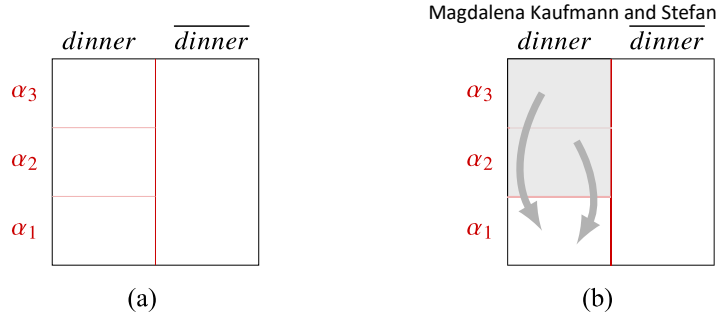


Figure 3 Two steps in the interpretation of (24B): (a) the decision problem facing the addressee in case *'dinner'* is true; (b) the conditional imperative states that among the *'dinner'*-worlds, those in α1 are best.

at the curbside). Aside from that, the other aspects of the interpretation do not differ from (24) in relevant ways.

4.3 *No advice-whether-to*

The above examples illustrated felicitous uses of conditionalized imperatives. We now turn to the main question of this paper, why conditionalized imperatives cannot be used to dispense *Advice-whether-to*. Recall the main data point, repeated here.

(26) A: I want to host the dinner.
B1: If you want to host the dinner, buy a bigger dining table.
B2: #So { don't even think about hosting it / yeah, do host it }

As we said above, our main reason for finding C&L's PEP analysis to be wanting is the fact that the purported conflict between the conditionalized imperative in (26B1) and the subsequent one in (26B2) can plausibly be expected to arise only with *Advice-not-to*, not with *Advice-to*, when in fact both are equally infelicitous. Our own analysis explains these data in terms of discourse structure.

Building on the discussion so far, we can now make our story more precise. The crucial fact, under our analysis, is that the conditional imperative cannot be used to address the question whether or not to host the dinner. This is because its antecedent is one of the choices,[17] thus restricting the context set to the antecedent worlds removes all worlds at which another choice is made. Relative to the resulting derived context, the imperative cannot address the salient question because it must of necessity be either uninformative (i.e., fail to rule out an option, in case its prejacent is consistent with the sole remining option) or unrealistic (i.e., inconsistent with the sole remaining option).

Note well that we are not saying that the conditional imperative could never be used in response to A's statement in (26). In and of itself, the sequence (26A,B1) can be felicitous. However, this happens only in contexts in which (26B1) is not taken to address the question of whether to host the dinner. For instance, it may address the locally raised issue of what

17 Literally, as (26B1) makes plain, the question is whether A should form an effective preference for hosting the dinner. We rephrase this in the interest of readability. We assume, in the spirit of C&L's (Condoravdi & Lauer, 2016) analysis of effective preferences in anankastic conditionals, that the paraphrase does not distort the picture.

dinner dinner

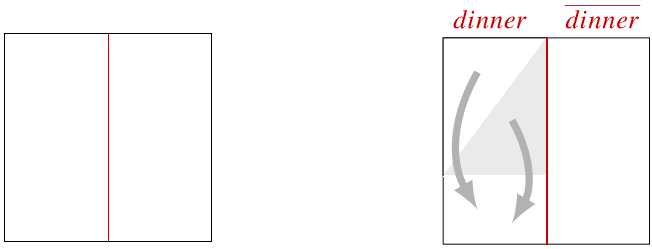


Figure 4 Conflicting demands on the context in (26): (a) the decision faced by the addressee is whether to host the dinner or not; (b) the conditional imperative does not address this question.

course of actions is required given the antecedent—again a non-trivial decision problem to which the imperative can give a (partial) answer. In (26), it is the follow-up (B2) that clarifies that this is not the intended discourse role of (26B1). In this sense, (26B2) is the point at which the oddness of the whole sequence is revealed: by forcing the whole sequence to be about the question of whether to host the dinner, it imposes a role on (26B1) which it cannot play. It is for this reason that we marked the infelicity on (26B2). Note that the imperative form of (26B2), adopted from C&L's original example, is not crucial to this argument: replacing it with *'So I {would advise against it/don't think it's a good idea}'* feels equally marked.

There are two further pieces of evidence for this analysis, in addition to the felicity of (26A,B1). First, we can look to close variants of the mini-dialogue that are felicitous. (27) shows that overt modals are perfectly compatible with the intended reading, unlike imperatives.

(27) A: I want to host the dinner.
B1: If you want to host the dinner, you have to buy a bigger dining table. B2: So { don't even think about it / yeah, do it }

C&L observed this and explained it with the absence of speaker endorsement with overt modals. Under our account, the reason for the felicity of this example is based on the same fundamental distinction, namely that overt modals, in contrast to imperatives, can be used non-performatively. But we differ from C&L in how we understand this distinction and deploy it in our analysis. We contend that it is not the absence of speaker endorsement that rescues (27), but the ability of overtly modalized sentences to enter a wider range of relationships with the question under discussion. The rhetorical point of the overall

sequence (27B1,B2) is a comparison of the (best) *dinner*-worlds to the *dinner*-worlds. As part of this argument, (27B1) is used descriptively, to state what the *dinner*-worlds are like. The imperative cannot be used in this way. In brief, imperatives presuppose that there is a unique decision problem and that their prejacent bears a particular relation to it. Modals do neither.

The second piece of evidence for the analysis is furnished by examples in which conditionalized imperatives can, after all, be used to dispense *Advice-whether*. (28) differs from (26) only in that here the third sentence (28B2) imposes a rhetorical structure under which (28B1) is not interpreted as addressing the question whether or not to host the dinner.

(28) A: I want to host the dinner.
B1: If you want to host the dinner, buy a bigger dining table.

B2: But I { would advise against it / don't think it's a good idea }

As far as we can see, the difference in felicity between (26) and (28) cannot be explained in terms of conflicting speaker preferences. It seems to be directly related to the difference in rhetorical structure, which is highlighted by the connective in the third sentence (*'so'* versus *'but'*). A conclusion introduced by *'so'* closes off a rhetorical move addressing an overarching issue, by stating what the preceding (one or more) sentences imply about that issue. In (26), the overarching issue is whether to host the dinner, and the infelicity arises from the fact that the conditionalized imperative cannot address that issue. In contrast, *'but'* in (28) indicates that the issue addressed in (28B2) is not (necessarily) the same as the one addressed in (28B1), leaving the conditionalized imperative free to address an issue which it can in fact address. Note moreover that, in this case, replacing (28B2) with an imperative (*'But don't host it (it's too much of a hassle)'*) feels rather natural, as well.

This characterization is admittedly informal and in need of further development. But doing so here would force us to introduce much additional machinery without contributing to the main point of the paper. Ultimately, a comprehensive formal implementation building on the existing work on the linguistic indicators and interpretative impacts of discourse relations like *consequence* and *contrast* (for instance, Asher & Lascarides, 2003, and Stojnic, 2016′)[18] is an important goal, which we leave for future work.[19]

5 CONDITIONAL PREFERENTIAL COMMITMENTS UNDER THE MICROSCOPE

Condoravdi & Lauer (2017) consider the fact that CIs cannot be used for *Advice-not-to* an important test case in adjudicating between PEP and MOP, especially in light of the fact that "cases of advice have so far been one of the crucial arguments for allowing contextual variation in the parameter of the imperative operator" (i.e., in favor of MOP). They note that PEP already closely resembles MOP in many other respects, and conjecture that if MOP were to be extended to account for the *Advice-not-to* facts in terms of conflicting speaker endorsements, the two accounts "would converge further."

We have argued that an account in terms of conflicting speaker preferences is on the wrong track. Instead, MOP predicts not only C&L's data, but also the parallel cases in which speaker preferences are not in conflict; moreover, it does so building solely on ingredients that had been proposed independently to capture the non-descriptive behavior

18 Toosarvandani (2014) offers a unified account for intersentential but that derives different implications associated with it from the discourse structure (the QUD, specifically). It remains to be seen if an account along these lines can be extended to cases that, like (28), seem to contrast at the level of conversational moves rather than content, as for instance also with interrogatives, consider 'Yes, I'm50butwhoneedstoknowmyrealageanyway?' (from `www.ft.com`).

19 We are indebted to an anonymous reviewer for inquiring about the difference in clause type in the concluding moves of the dialogues in (26) and (28). While many details still remain to be filled in, we take these data to provide further support for our account.

of imperatives. Thus C&L's Advice-not-to data do not in fact provide an argument in favor of hardwiring speaker preferences into the semantics of imperatives.

Researchers inclined towards PEP for independent reasons might be interested in exploring the option of extending it with explicit requirements on the discourse structure as a fix for this particular challenge, leaving the rest of the account intact. To evaluate this strategy, it is worth taking a broader look at how PEP fares when extended to conditionalized imperatives, independently of the Advice-whether-to data. It turns out that the specific assumptions about how conditional and unconditional preferential commitments are supposed to interact and the mechanism behind the interpretation of conditionalized imperatives are surprisingly problematic. We want to highlight some of these problems, because we consider them instructive regarding the challenges that must be overcome by any account that encodes speaker commitments in the semantics of imperatives and interprets conditionals in terms of conditional speaker commitments.

Since this section deals with issues arising from C&L's formal implementation, we start by introducing the relevant details of their account of imperatives in general (Sec. 5.1) before discussing its application to conditionals (Sec. 5.2). We conclude with a discussion of some open problems with the application of the account to CIs (Sec. 5.3).

5.1 *Imperatives as expressing public effective preferences*

According to C&L, imperatives semantically encode a *public effective preference* on the part of the speaker. Thus in uttering an imperative '*p*!' with prejacent *p*, the speaker is publicly committing themself to having an effective preference for *p*.

Formally, C&L define a *preference structure* to be a pair $\mathbf{P},\prec$ where $\mathbf{P}$ is a set of propositions and $\prec$ is a strict partial order, ranking the propositions in $\mathbf{P}$ by priority. No further constraints are imposed on preference structures in general. Thus the propositions may be (pairwise or jointly) inconsistent, or inconsistent with the information available to the relevant agent (the speaker in the cases of interest here), meaning that they are unattainable, at least for all the agent knows.

An agent may entertain more than one preference structure simultaneously. However, in order to draw on their preferences in solving a concrete decision problem, they have to make up their mind and choose a specific preference structure as the *effective* one (for the given decision problem). A preference structure $\mathbf{P},\prec$ can be an effective one only if it is (for all the agent believes) *realistic* and *consistent*. Realism is the requirement that none of the propositions in $\mathbf{P}$ is ruled out by the information available to the agent. Consistency requires that any subset $X \subseteq \mathbf{P}$ is either consistent with the agent's information, or else non-trivially ranked by the relation $\prec$ (thus at least the set $\max(\mathbf{P},\prec)$ of top-ranked propositions is jointly consistent with the agent's information). This ensures that an agent's effective preferences are attainable, for all they know.[20] If the designated preference structure for a given decision problem is not yet realistic and consistent, the agent makes it so. How exactly they do this is

20 Phillips-Brown (2019) shows that this is insufficient to capture intuitions about the truth of anankastic conditionals (see Sect. 3.2) as aimed at by Condoravdi & Lauer (2016). This issue is

independent of the ones to be discussed in the following, and we will therefore ignore it for the purpose of our discussion.

not of importance here. (According to C&L, the agent manipulates the order $\prec$ demoting or promoting propositions.)

The central ingredient in the formal implementation of Condoravdi & Lauer (2017) is an agent's *commitment state*, formally modeled as a pair $C = C_{PB}, C_{PEP}$, where C_{PB} is a non-empty set of possible worlds representing the agent's public doxastic commitments (i.e., what the agent is committed to believing) and C_{PEP} is a preference structure (as defined above) representing the effective preferences that the agent is publicly committed to having.

Conditions on these ingredients and the relationships between them are listed in (29) and (30).[21]

(29) a. $C_{PB}, C_{PEP} \mid_{PB} p$ if and only if $C_{PB} \subseteq p$ [their (17)]

b. $C_{PB}, C_{PEP} \mid_{PEP} p$ if and only if $p \in \max(C_{PEP})$ [their (18)]

(30) For any agent a and proposition p:

a. $PB_a(p) := \{w \mid C_a(w) \mid_{PB} p\}$

b. $PEP_a(p) := \{w \mid C_a(w) \mid_{PEP} p\}$

The denotation of an imperative is spelled out in terms of these notions. For example, the imperative *'Leave!'* has the logical form in (31) and denotes the proposition that the speaker *Sp* has a public effective preference for the proposition that the addressee leaves.

(31) $[[\text{Imp [you leave]}]]^c = PEP_{[Sp]}(\lambda w[A \text{ leaves in } w])$ where Sp is the speaker in c

$= v \mid C_{Sp}(v) \mid_{PEP} \lambda w[A \text{ leaves in } w]$

[redacted]$[A \text{ leaves in } w] \in \max C_{Sp}(v)_{PEP}$

C&L's account is restricted to *admissible* commitment states, which are those in which the agent's higher-order doxastic public commitments match their actual public commitments: thus if the agent is publicly committed to being publicly committed to believing p, then they are in fact publicly committed to believing p; and if the agent is publicly committed to having a public effective preference for p, then they do in fact have a public effective preference for p.

(32) Agent a's commitment state is admissible only if:[22]

a. $PB_a(PB_a(p))$ entails $PB_a(p)$ [their (21a)]

b. $PB_a(PEP_a(p))$ entails $PEP_a(p)$ [their (21b)]

5.2 *Updating commitment states and preferential consistency*

The extension of the analysis to conditionalized imperatives relies on a notion of *conditional preferential commitment*, which in turn draws on a dynamic *update* operation on commit-

21 Specifically, "C |PBprepresents that the agent of C is doxastically committed to p and C |PEPp represents that the agent is preferentially committed to p" (Condoravdi & Lauer, 2017, 192). Note that C&L use expressions like 'PBa(p)' and 'PEPa(p)' for both translations of natural language sentences and their model theoretic interpretation, and |PB as well as |PEP as relations between commitment states and sets of possible worlds. We follow their conventions.

22 In modal logic terms, (32a) is axiom C4, which corresponds to the property of density. C&L define admissibility in terms of the model-theoretic relations |PB and |PEP (their (20)) which, as they point out, ensure the entailments as reproduced here.

ment states. C&L do not actually define the latter; they only impose two constraints on how it affects the public doxastic commitments:

(33) If $C_{PB}, C_{PEP} + p = C^{+}_{PB}, C^{+}_{PEP}$ then: [their (22)] a. $C^{+}_{PB} \subseteq C_{PB}$ (monotonicity)

b. $C^{+}_{PB} \subseteq p$ (success)

Together with the admissibility conditions and the denotations illustrated in (31) above, these constraints ensure that utterances of simple (non-conditional) imperatives are *selfverifying*—that is, they introduce a public effective preference of the speaker for the prejacent.[23,24]

Conditional preferential commitment is defined as preferential commitment in the state resulting from an update with the condition:

(34) An agent with commitment state is committed to prefer q conditionally on p iff $(C{+}p) \mid_{PEP} q$. [their 30]

The infelicity of Advice-not-to is now derived along the following lines: "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 $\neg q$" (p. 199). C&L assume furthermore that indicative conditionals commit their speakers to taking the antecedent to be possible, in the sense that their commitment state is admissible only if it can be consistently updated with the antecent. With that, C&L argue that "[i]t follows that

23 C&L do not provide a detailed proof of self-verification; we take it to proceed along the following lines. Let $C = C_{PB}, C_{PEP}$ and $C{+}[[\text{IMP [you leave]}]]^{c} = C^{+} = C^{+}_{PB}, C^{+}_{PEP}$.

a. $C^{+}_{PB} \subseteq PEP_{Sp}$(A leaves) [success]

b. therefore $C^{+} \mid_{PB} PEP_{Sp}$(A leaves) [def. of |PB, (29a)]

c. now consider an arbitrary world w_* such that $C^{+} = C_{Sp}(w_*)$ (intuitively w_* is the world at which the utterance has taken place). Then $w^{*} \in PB_{Sp}(PEP_{Sp}$(A leaves)). [def. of PB, (30b)] d. thus $w_* \in PEP_{Sp}$(A leaves) [admissibility, (32)]

e. so $C_{Sp}(^{w}*)$ |PEP A leaves [def. of PEP, (30b)]

f. hence [redacted]$_{PEP}$ A leaves (c),

24 While we find it convincing that this account predicts that imperatives cannot be used to express falsities, it is less clear to us what blocks a use of imperatives as (descriptive) reminders of wellestablished speaker preferences (compare: 'Asweallknow:{ a.I(absolutely)wantyoutoleave., b.Iintendforyoutoleave.,c.#Leave!}'), or with discourse particles that, like German ja, mark preestablished information (Kaufmann & Kaufmann, 2012).

25 As mentioned in the quote, the dynamics of an agent's public effective preferences are constrained only indirectly, through the monotonicity of doxastic update (33a) and the one-way entailment from PB(PEP(p)) to PEP(p) (33b). Jointly, these conditions ensure that any public effective preferences thatthespeakerisdoxasticallycommittedtobeforetheupdate, remain public effective preferences (that the speaker remains doxastically commited to) after the update: If C |PB PEP(p) and C+ is derived from C by update, then C^{+} |PEP p. No similar preservation constraint is imposed on public effective preferences that the speaker is not doxastically committed to.

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" (p. 199). Both claims involve the interaction of public and private speaker doxastic operators with each other and the PEP-operator (as well as the pragmatic principle of cooperativity-by-default for the case of disinterested advice),[26] and the paper stops short of spelling out how this works in detail. But granting that the necessary details can be filled in (see Sec. 5.3 for some assumptions that need to be added in order to make the derivation of conditional preferential commitments go through as intended), we remain doubtful as to whether it is indeed desirable to impose these particular constraints.

Conditionalized imperatives can in fact be used to relate contingency plans for dispreferred circumstances. Specifically, this concerns imperative versions of a kind of scenario known in deontic logic as *Contrary To Duty Obligation* (Chisholm, 1963; McNamara, 2019; i.a.). An intuitively felicitous example is given in (35).

(35) Don't quit your job. But if you really can't stand it anymore, do it politely at least.

It seems to us that an imperative semantics that rests on speaker preferential commitments and their conditionalization faces a serious challenge from sequences like (35), at least if it is committed to the constraints quoted at the beginning of this section. We note in passing that sequences like (35) do not present any special challenges for MOP, which does not tie imperatives semantically to speaker preferences.

In the following, we will turn to conditional preferential commitments as such and the question of how they are derived from commitment state updates and the semantic meaning of (conditionalized) imperatives. We will argue that, independently of contrary to duty obligations, the options for defining conditional preferential commitments considered by C&L and the proposed mechanism to derive the most plausible one of them are problematic in and of themselves.

5.3 *Conditional denotations and conditional preferential commitments*

Condoravdi & Lauer (2017) assume that the *'if'*-clause of a conditionalied imperative restricts a covert epistemic

necessity operator Nec (quantifying over all worlds that are consistent with what the speaker knows). They illustrate with (36):

(36) a. If you want to have the party at your place, buy a bigger table. [their 35a] b. NEC[want$_A$(A hosts the party)] [(PEP$_{Sp}$A buys a bigger table)] [their 35b]

C&L argue that given their assumptions about propositional updates and the interaction between doxastic and preferential discourse commitments, an unconditional commitment to (36) amounts to a conditional preferential commitment to the imperative's prejacent, given the antecedent. Thus the claim is in effect that after a successful update with a conditionalized imperative, a further update with the antecedent will result in a state in

26 Independently of how exactly the update proceeds, C&L could also argue that a speaker willing to commit publicly to an effective preference against hosting the dinner could not have taken on the addressee's hypothetical goal of hosting the dinner for the sake of cooperation by default, and thus could never have truthfully uttered the conditional imperative in the first place. This pragmatic aspect of the problem is not discussed in the paper and we will set it aside here, too.

which the speaker has a public effective preference for the imperative's prejacent. In the case of (36), this means that (37) is derived.

(37) ((C$_{Sp}$ + (36*b*)) + want$_A$(A hosts the party)) |$_{PEP}$ A buys a bigger table

To derive this effect, Nec is interpreted as a *strict* (epistemic) necessity modal. As a result of the update with (36b), the speaker ends up committed to believing that either A does not have an effective preference for having the party at his place, or that the speaker themself has a public effective preference for A buying a bigger table, or both (here B$_{Sp}$ stands for speaker belief and EP$_A$ expresses the addressee's effective preferences):[27]

(38) If C$_{PB}$,C$_{PEP}$ + [redacted], then
C$^+_{PB}$ ⊆B$_{Sp}$(¬EP$_A$(A hosts the party) ∨ PEP$_{Sp}$(A buys a bigger table))

Semantically, this update ensures that the speaker has a public effective preference for A's buying a bigger table (that is, the right disjunct in the scope of in (38)) in at least at *some* worlds in C$^+_{PB}$.[28]

We note in passing that this argument does not go through without additional assumptions about the interplay between private belief (the modality expressed by Nec and represented as B) and public doxastic commitments. As it stands, we can conclude PEP$_{Sp}$(*p*) from PB$_{Sp}$(PEP$_{Sp}$(*p*)), but not from B$_{Sp}$(PEP$_{Sp}$(*p*)). Adding a further admissibility constraint that allows us to turn an agent's public doxastic commitment to a private belief *p* into a public doxastic commitment to *p* as in (39) would close the gap in the derivation:

(39) For any admissible commitment state *C* and agent *a*: If *C*$_a$ |$_{PB}$ *B*$_a$*p*, then *C*$_a$ |$_{PB}$ *p*

As the constraint is not part of PEP, we cannot be sure it preserves the original intentions.

We are now ready to see how the semantic effect of this update amounts to the intended notion of conditional preferential commitment (which is, in particular, taken to figure in the blocking of Advice-not-to, see Sec. 5.2 above). Condoravdi & Lauer (2017) consider three possible formal

implementations of the notion of conditional preferential commitment before settling on the weakest one (listed in (40c), also (34) above) to illustrate their account. They explicitly refrain from taking a stance on this choice, though.

(40) Agent *a* is *committed to preferring q conditionally on p* iff *a* automatically is committed to preferring *q*,...[their (29)] 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 believing that *p* is true. Weak

27 Like C&L we assume that 'want' always expresses effective preferences in these cases. Overall, our interpretation of the LF in (36) follows the prose in Condoravdi & Lauer (2017) and fills any gaps according to the treatment of anankastic conditionals in Condoravdi & Lauer (2016).

28 If the addressee has previously announced his wanting to host the party, as the case in the examples we used above, the speaker probably believes this at all worlds in C^{+}_{PB} (in which case the right disjunct would be true throughout C^{+}_{PB} as well). But not all of the relevant examples are of this kind:
C&L's (Condoravdi & Lauer, 2017) own (i) is a case in point.

(i) If you want to have the workshop dinner at your place, buy a bigger table. #So don't even think about it!

First of all, it is worth noting that on the account proposed, which purportedly rests on the weakest notion, conditional commitment is derived via commitment to the proposition that reflects the strongest one (40a): the speaker commits themself to believing that either *p* is false, or they have a public effective preference for *q* (cf. (38)). If worries about ignorance regarding one's actual preferential commitments (C&L's main issue with the strong notion) drive us to settle for a weaker version of conditional preferential commitment, it seems counter-intiutive to derive a weaker version through a mechanism that relies, in the intial step, on the speaker becoming publicly committed to a proposition that entails that they are ignorant about their actual preferential commitments (unless they already know the antecedent to be true).

More generally, in view of the way C&L seek to derive conditional preferential commitment via update with the propositional content of CIs, we find all three of these notions deeply unintuitive. This is due to a common underlying problem which shows up in different guises: C&L predict that in a typical context in which a CI is true, the speaker is uncertain about (some of) her public effective preferences. We take it that however one understands the notion of public effective preference, at the very least it should be *public* and *effective*. The former is usually taken to mean, or imply, that the preference is known to all the relevant agents in the context, including the speaker themself. The latter means, by C&L's own definition, that the speaker has adopted the preference to inform their decisionmaking in the context. We take it that a preference that is public and effective at some but not all of the speaker's belief-worlds cannot be said to meet either of these conditions, on pain of trivializing the theoretical notions.

It is telling in this regard that C&L (2017), in developing their story about CIs and conflicting endorsements, drop an important ingredient from their theory which, if kept on board, would have ruled out this kind of uncertainty. Recall that their conditions on *admissible* commitment states, listed in (32) above, include the requirement that public belief about public effective preferences is

factive, repeated here as (41a). C&L (2011) also imposed the converse of this condition, given here as (41b), which they dubbed "positive introspection for preference commitment" (p. 8):

(41) a. $PB_a(PEP_a(p))$ entails $PEP_a(p)$ [= (32b) above] b. $PEP_a(p)$ entails $PB_a(PEP_a(p))$ [C&L 2011, absent in C&L 2017]

Assuming that public belief implies belief by each of the agents, including the speaker, (41b) would rule out speaker uncertainty about their own preferential commitments. We take (41b) to be just as plausible as (41a), so plausible in fact that any theory that is at odds with it should be eyed with suspicion.[29]

29 We note at this point that at least some of the awkwardness of the idea of uncertainty about one's own public commitments could perhaps be alleviated by taking the temporal dimension more seriously. C&L's use of 'if/once' in (40) is suggestive of the possibility that the condition and the resulting public commitments can lie in the future. This could indeed be a path worth pursuing. A modal-temporal account of the underlying conditional construction along the lines of S. Kaufmann's (2005) analysis would seem to be compatible with the idea.

6 CONCLUSIONS

Conditionalized imperatives used to give advice concerning the antecedent provide valuable insights into the fine points of how the denotation of imperatives interacts with context. Condoravdi & Lauer (2017) deserve credit for bringing this issue to the fore and proposing an analysis in their framework. Even though their approach ultimately turns out to be unworkable, the data and the proposal were instrumental in discovering new patterns in the discourse behavior of imperatives (conditional and otherwise). Like them, we conjecture that integrating the correct account of the phenomena, whatever that may be, will make theories of imperatives converge further. Unlike C&L, we believe that the correct account should not depend on conflicting speaker endorsements. Instead, we take the data to provide strong support for a theory of imperative clauses that pays close attention to the discourse structure in which they can occur and analyzes conditionalized imperatives as expressing unconditional endorsement of conditional optimality. We take it as an important goal for future research to work out in more detail the linguistic marking of discourse structure specifically in the non-descriptive and action-guiding exchanges that imperatives and performative modals participate in.

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