

# Detecting variable force in imperatives: A modalized minimal approach\*

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**Abstract** This paper draws attention to various environments which show that imperatives convey possibility and not necessity as widely assumed in the literature. The interaction of imperatives with other operators reveals the presence of an existential operator. At the same time however, it is shown that imperatives cannot be analysed as invariably conveying possibility. Instead, I suggest an analysis in which imperative verbal mood is semantically contentful, triggering a presupposition which results in a domain restriction for the set of evaluation worlds. Combining insights from both the modal (Schwager 2006, Kaufmann 2012) and the minimal approach (Portner 2004, 2007), I show that we can have a modalised minimal analysis if we take imperative verbal mood to be contentful at a presuppositional level. This twist allows us to capture the variable quantificational force of imperatives depending on the environment they appear in.

**Keywords:** Imperatives, verbal mood, modality, comparative possibility, scope, *only*, *even*, Free Choice Items

## 1 Introduction

It is well-known that imperatives can vary in their interpretation depending on the context (Wilson & Sperber 1988, Han 2000, Schwager 2006, Kaufmann 2012, Portner 2007, Grosz 2011, Condoravdi & Lauer 2012, von Stechow & Iatridou 2017). To mention only some of the readings, the imperative in (1), depending on the context, can express *command*, *plea*, *advice*, *permission*, *indifference* as in (1a-e).

- (1) Sign this paper.
- a. As a *command/request* from the chief to the employee.
  - b. As a *plea* from a child to her mother to sign a form which provides permission for school trips.
  - c. As *advice* to somebody who wonders how to apply for daycare.
  - d. As *permission*, although the speaker might not fully agree (...*but you should know I don't agree.*)

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- e. As *indifference*, requiring a continuation like ...*burn this paper, eat this paper...* *I don't really care...*

As I discuss in the next section, there are different ways to account for this “polysemy”, but none of the existent analyses can explain the full-range of data presented in this paper. I show that the existential character of imperatives is much more pervasive than previously thought. Primary evidence for this comes from Greek scope ambiguities with the focus particle *mono* ‘only’ as well as the scalar particle *akomi ke* ‘even’. Moreover, I discuss the distribution of Free Choice Items in imperatives showing that an all-universal analysis cannot straightforwardly account for all the data. These data indicate that imperatives, despite their apparent ‘imperative’ character, can be best analysed as expressing possibility. Yet, two questions arise. First, as one can observe from (1), imperatives express much more than possibility in e.g. *commands/requests*. Secondly, as we will see in detail in Section 4, imperatives can combine with a quantificational adverb which expresses necessity deriving an unambiguously necessity interpretation. The first puzzle, the emergence of strong readings with plain imperatives, is analysed as an implicature derived by exhaustifying over certain focus alternatives.

The second puzzle is different in nature. By applying the same tests presented in section 3, I show that, in the presence of an overt adverbial, the imperative unambiguously gets the force of the overt adverbial. This means that we cannot assume that an existential modal is an integral part of the imperative. Instead, this variability in force indicates that the imperative form does not involve an operator with a fixed quantificational force and yet it involves an operator. In order to capture this flexibility, I argue that the imperative consists of a *mood*-phrase taking as its argument a proposition (a function from worlds to truth values) with an imperative feature (+IMP) which introduces certain presupposition restrictions on the world variable, therefore resulting in a modal interpretation. By stripping the modal operator from the imperative form we are now more flexible in our attempt to explain the variability in the quantificational force of imperatives. As discussed in Section 5, an overt adverbial can determine the quantificational force of imperatives whereas in the absence of a quantificational operator existential closure applies deriving a possibility modal interpretation.

The paper proceeds as follows. In Section 2, I provide some background regarding previous approaches to imperatives focusing on their account for the observed polysemy. In Section 3, I present primary evidence mainly from Greek showing that imperatives are more *existential* in their quantificational force than we had previously thought. Section 4 discusses imperatives which involve an overt adverbial showing that an all-existential analysis cannot account for the available combinations. In Section 5, I suggest that we can account for the entire range of data by treating

the imperative as a mood-Phrase with a special imperative feature. In Section 6, we turn back to plain imperatives which can express command or request. I show that these cases can be best analysed as implicatures derived by exhaustifying over focus alternatives. Section 7 concludes and puts forward new questions raised by the proposed analysis.

## 2 Previous approaches and their perspective towards polysemy

During the last four decades at least, many studies shed light on a variety of questions regarding imperative clauses, such as their different meaning/function from declaratives, their syntax, the distinction between their semantic and pragmatic content as well as their “polysemy”. This section focuses on the latest developments in this field which of course build on previous work. The discussion is shaped on the basis of a coarse dichotomy between the so-called minimal approach according to which there is no operator in the semantics and the modal approach which argues in favor of a modal operator in the semantics. This discussion will help us test the predictions that these theories make in view of the data presented in section 3 and compare them with the proposed analysis in section 5.

### 2.1 Minimal Approach

The essence of a minimal approach to imperatives is that there is no operator in the semantics of an imperative clause (Hausser 1980, Portner 2004, 2007, Pak et al. 2008, Mastop 2005, Starr 2011, von Fintel & Iatridou 2017, Roberts 2018). The ‘directive’ force of imperatives comes from the pragmatics. The difficulty is to define the exact mechanism that is responsible for turning a property or a proposition into a ‘directive’. Here we focus on Portner’s (2004, 2007) approach but see also Starr (2011), von Fintel & Iatridou (2017).

Portner (2004, 2007) suggests that the imperative is a different clause type along with declaratives and interrogatives. Following the Stalnakerian notion of Common Ground (CG), declaratives serve as updates of the information in the CG. Portner suggests a parallel function for imperatives; imperatives add properties to another stack dubbed To-Do-List for each addressee (cf. update of the plan set in Han 2000). The denotation of the imperative is just a property which holds of the addressee (A), as shown in (2) for an imperative clause like ‘Open the window.’

- (2) Imperative is a property restricted to A:  

$$\llbracket \text{Open the window} \rrbracket = \lambda w. \lambda x: x = A. x \text{ opens the wnd in } w$$

Similarly to the way in which a declarative proposition adds its content to the Common Ground (CG), and an interrogative to the Question Stack (Q), a successfully

uttered imperative adds its content to A's To-Do-list (T). In Portner (2007), this is formalized as in (3):

(3) Pragmatic Function of Imperatives

- a. The To-Do-list function T assigns to each participant  $\alpha$  in the conversation a set of properties  $T(\alpha)$
- b. The canonical discourse function of an imperative clause  $\phi_{\text{imp}}$  is to add  $[[\phi_{\text{imp}}]]$  to  $T(\text{addressee})$ . Where C is a context of the form  $\langle CG, Q, T \rangle$ :  

$$C + \phi_{\text{imp}} = \langle CG, Q, T[\text{addressee}/(T(\text{addressee}))] \cup [[\phi_{\text{imp}}]] \rangle$$

In addition, the To-Do-list imposes an ordering on the worlds compatible with the CG as shown in (4a). The Agent's commitment principle in (4b) guarantees that the addressee will try to fulfill as many properties as he can from his To-Do-List.

(4) Ordering pragmatics for imperatives

- a. **Partial ordering of worlds:** For any  $w_1, w_2 \in \cap CG$  and any participant  $i$ ,  $w_1 <_i w_2$  iff for some  $P \in T(i)$ ,  $P(w_2)(i) = 1$  and  $P(w_1)(i) = 0$ , and for all  $Q \in T(i)$ : if  $Q(w_1)(i) = 1$ , then  $Q(w_2)(i) = 1$ .
- b. **Agent's commitment:** For any participant  $i$ , the participants in the conversation mutually agree to deem  $i$ 's actions rational and cooperative to the extent that those actions in any world  $w_1 \in \cap CG$  such that  $w_1 <_i w_2$ .

Portner (2007) makes a direct comparison between what he calls *priority* modals and imperatives. In a similar fashion that the conversational backgrounds restrict the interpretation of the ordering source in modals, imperatives depend on conversational backgrounds in the context to get their bouletic, deontic or teleological flavor. In this sense, we can think of sub-To-Do Lists for each individual (e.g. a bouletic To-Do List, a deontic To-Do List, etc.). Although, such an analysis accounts for the different imperative meanings such as *advice* vs. *command*, as Portner himself acknowledges *permission* readings cannot be derived. Portner (2010) suggests that permission readings arise from conflicting requirements on the To-Do List. Building on the general idea that permissions arise “in the context of a countervailing prohibition” (Kamp 1979), Portner argues that the context in which an imperative is interpreted as a permission typically contains a prohibition. For example, suppose that A's To-Do List before the speaker utters the imperative ‘Eat a banana’ involves a property ‘ $\neg$  eat a banana’. After the update, the A's To-Do List involves two conflicting properties: ‘eat a banana’ and ‘ $\neg$  eat a banana’. This means that the updated To-Do List is inconsistent and therefore offers a choice to eat or not eat a banana.

However, as von Fintel & Iatridou (2017) discuss there is an empirical issue with this analysis. In many cases conflicting requirements do not suggest that there is a

possibility of choosing among them. Portner (2010), himself, also acknowledges a similar problem in the following example:

- (5) Bring beer to the party tomorrow! Actually, bring wine!

The imperatives in (5) are inconsistent but they do not provide a real choice to the addressee as to whether he brings wine or beer. Portner suggests that in order to induce a choice among conflicting requirements the imperative has to be marked as being permission. In other words the default is that imperatives are interpreted as requirements but in some cases imperatives can be marked (by intonation, or by an overt expression like *if you want*, or by a morpheme in some languages) as permissions.

As von Stechow & Iatridou (2017) discuss, this idea is not without problems since in some sense by introducing an additional requirement - permission ‘feature’, the approach largely loses its advantage over analyses that assume a covert operator. A potential amendment, suggested by von Stechow & Iatridou (2017), is that the property is not added automatically to A’s To-Do List but rather “it is put on the table as a possible addition to A’s To-Do List” (see also Condoravdi & Lauer (2012) on this point). Under this view, the level of endorsement can vary in different contexts. However, as we briefly discuss in Section 6, permission readings can be independent from the level of speaker’s endorsement, i.e. appear in contexts in which the speaker clearly endorses the prejacent and yet he expresses permission.

## 2.2 Modal Approach

The common thread in modal analyses of imperatives is that they incorporate a modal operator into the semantics of an imperative clause (Han 2000, Schwager 2006, Kaufmann 2012, Crnič & Trinh 2009, Grosz 2011, Condoravdi & Lauer 2012).<sup>1</sup> The exact character of this operator as well as its position differ across the different approaches. Here we focus on Kaufmann’s (2012) approach on which the present analysis largely builds.

Kaufmann, in her dissertation (Schwager 2006) and later in Kaufmann 2012, analyses the imperative operator as a universal modal. Under this approach the meaning of the imperative is identical to that of a universal modal as shown in (6):

- (6)  $\forall$ -Modal approach:  

$$\llbracket \text{Open the window!} \rrbracket^w = \forall w' \in \cap f(w) [A \text{ opens the window in } w']$$

<sup>1</sup> As pointed out by an anonymous reviewer, Han’s (1998) analysis can also be classified as minimal. In fact, Han (1998) proposes that there is an imperative operator at  $C^0$  with a ‘directive’ and ‘irrealis’ feature that provides imperatives with their directive force. In this respect, Portner’s (2004) account shares many insights with Han’s (1998) analysis. However, strictly speaking Han (1998) doesn’t reject the presence of an operator in the semantics. See also the discussion in Iatridou 2008.

The fact that there is a modal operator in the semantics allows Kaufmann to use all the machinery introduced by Kratzer (1981) in order to account for the variety of interpretations in imperatives. Roughly, by employing different conversational backgrounds for the ordering source, Kaufmann derives *wishes* ( $g = \text{what the speaker wants}$ ), *requests/commands* ( $g = \text{what the speaker orders}$ ) and *advice* ( $g = A\text{'s preferences, or what is considered to be generally preferred}$ ) (see Kaufmann 2012, section 4.1). However, *permission* and *acquiescence* readings once more present a puzzle because it is not a matter of a variable ordering source but of weaker force. Among the various types of acquiescence readings Kaufmann (2012) considers *For-example-advice* as in (7) the most challenging for a universal analysis.

(7) Stop buying cigarettes for example! *For example-Advice*

Examples like (7) as an answer to a question ‘How could I save money?’ clearly convey possibility and not necessity. For these cases Kaufmann suggests that the universal modal should be reduced to an existential one. The mechanism she suggests is of particular interest for us because in some sense it is the mirror image of the mechanism I propose.

In a series of works (Schwager 2005, 2006, Kaufmann 2012), Kaufmann develops an analysis of examples like (7) as inexhaustive possibilities. This means that the default imperative is analysed as an instance of exhaustive possibility. A possibility is exhaustive if it is the only possibility (e.g. *The only thing you can do to stop smoking is stop buying cigarettes*, Kaufmann 2012: 181-183)

Building on Zimmermann (2000), Kaufmann shows that an exhaustive possibility amounts to a necessity. Under this idea, an imperative is treated as a possibility which is obligatorily exhaustified thus being equivalent to a necessity. Kaufmann (2012) assumes that a covert EXH-operator combined with a possibility modal operator, constitute together the imperative operator. Under this view, when we get a possibility reading there is some mechanism which removes the covert EXH-operator. Kaufmann (2012) takes expressions like *for-example* to act as anti-exhaustifiers, removing the EXH-operator and licensing a possibility reading. As Kaufmann herself points out the nature of this exhaustive operator as well as the conditions under which anti-exhaustification occurs require further investigation. Moreover, this analysis raises the question why imperatives should always combine with an EXH-operator.

The idea I pursue here is, in fact, very similar to Kaufmann’s idea of exhaustified possibilities. The difference lies in that I take exhaustification to be the result of the general mechanism in the generation of implicatures in the presence of alternatives. Under this view, exhaustification will apply when there are certain alternatives which depend on focus marking.

Before closing this section, I will briefly introduce Condoravdi & Lauer’s (2012) approach to imperatives as *Effective Preferences*, as it differs both from the minimal

and the modal approach in that it takes imperatives to always express *preferences*. The *speaker-bouletic* nature of imperatives is a basic characteristic that the present analysis shares with Condoravdi & Lauer’s proposal.

### 2.3 Condoravdi & Lauer (2012)

Condoravdi & Lauer (2012) analyse imperatives as preferential attitudes. The general idea is that imperatives express a speaker’s preference ordered with respect to other preferences. Under this view every individual has a set of desires, moral codes, obligations, which can be ranked with respect to their importance. Condoravdi & Lauer (2012) define this as a preference structure:

- (8) A *preference structure* relative to an information state  $W$  is a pair  $\langle P, \leq \rangle$  where  $P \subseteq \wp(W)$  and  $\leq$  is a partial order on  $P$ .

Whereas a preference structure can consist of contradictory preferences, the moment an agent has to act he needs to resolve these conflicts. In other words, he needs to make his preference structure consistent. The formal definition of a consistent preference structure is given below:

- (9) A preference structure  $\langle P, \leq \rangle$  is consistent iff for any  $X \subseteq P$ , if  $\cap X = \emptyset$ , there are  $p, q \in X$  such that  $p < q$

An imperative sentence expresses the speaker’s *Effective Preference* at time  $t$  (= utterance time). An *Effective Preference* is the preference which is ranked higher in a consistent preference structure. Therefore an imperative like ‘Open the window’ is interpreted as in (10), which means that the speaker is committed to the *Effective Preference* that A opens the window in world  $u$ .

- (10)  $[[\text{Open the window}]]^c = \lambda w. [PEP_w (Sp, \lambda u [A \text{ opens the wnd in } u])]$

From this meaning a number of things follow regarding the addressee’s commitment to act as if he has the same effective preference as the speaker. However, treating imperatives as conveying ranked preferences makes it also difficult to account for cases in which imperatives clearly have an existential character.

All the analyses I have presented so far, despite their notable differences, share a common characteristic; they all suggest a *strong* meaning for imperatives. In the following section, I show that a strong meaning cannot account for a range of environments which in turn I take as evidence for the presence of a weaker operator in the semantics of imperatives.



### 3 Evidence for the existential character of imperatives

This section focuses on three different data points from Greek illustrating the existential nature of imperatives. The existential character can be detected by observing the interaction of imperatives with the exclusive particle *mono* ‘only’ and the additive scalar particle *akomi ke* ‘only’. These two environments also provide evidence for the existence of an operator in the semantics of imperatives against the minimal approach. The third argument involves the licensing of FCIs. These data converge to an existential analysis of imperatives which, in turn, raises new questions.

#### 3.1 Only and imperatives

Haida & Repp (2012) show that an imperative containing *only* as in (11) is ambiguous. Context A, facilitates the reading that *it’s O.K. to not paint the other tables* whereas context B the reading that *it’s O.K. to paint the round table but it’s not O.K. to paint the other tables*:

##### Context A

*You’ve asked me to paint those tables but I’m really tired and don’t feel like doing something really useful today.*

##### Context B

*Oh, I feel like doing something really useful today. I think I’ll paint the tables over there.*

(11) Only paint the round table.

(Haida & Repp 2012: p. 308)

I argue that the ambiguity in (11) is best explained as a scopal ambiguity.<sup>2</sup> Evidence for this comes from Greek, where overt focus movement is shown to resolve scope ambiguities. Building on the Greek data with movement, I argue that the ambiguity can be explained only if we treat the imperative modal operator as an existential modal.

##### 3.1.1 Evidence from overt movement in Greek

Although it has been observed that focus (movement) is relevant for scope ambiguities (Tsimpli 1995, Baltazani 2002, Gryllia 2009), there is no discussion regarding scope ambiguities in the presence of a focus operator like *only*. Here we discuss

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<sup>2</sup> Haida & Repp (2012) do not consider this to be a scopal ambiguity. The purpose of their paper is to evaluate Portner’s (2004) and Schwager’s (2006) account for imperatives in view of what they predict for the particular example. Notice, however, that in footnote (1), Haida & Repp (2012) mention the possibility for the ambiguity to be scopal.



these cases, showing that overt movement of the *only*-phrase results in wide scope of *only*.

Consider the following pairs with the overt existential modal in Greek, *boro* ‘can’, embedded under the same contexts A&B introduced by Haida & Repp (2012). When *only* appears with its associate in-situ (12a), the sentence is ambiguous and therefore it is felicitous under both contexts.<sup>3</sup> When the *only*-phrase is preverbal (12b) only the wide scope (*only* > *can*) survives and therefore the sentence is good only under context B. The sentence can only mean that *the only table that A is allowed to paint is the round one* (e.g. it’s not OK to paint the other tables).

- (12) a. Boris na vapsis [mono to strogilo trapezi].  
           can.2SG SUBJ paint.2SG only the round table.  
           ‘You can paint only the round table’  
           → OK in Context A:  $\diamond > \text{only}$   
           → OK in Context B: *only* >  $\diamond$
- b. [mono to strogilo trapezi] boris na vapsis.  
           Only the round table can.2SG SUBJ paint.2SG  
           ‘The only table you can paint is the round one.’  
           → Bad in Context A:  $*\diamond > \text{only}$   
           → OK in Context B: *only* >  $\diamond$

Crucially, the imperative operator interacts with *only* exactly in the same way that an existential modal does. In (14a), when the *only*-DP remains in situ, both the narrow-scope (*Imp* > *only*) and the wide-scope (*only* > *Imp*) reading is available. This is shown by the fact that (14a) is good under both contexts, just like the English example in (11). On the contrary, in (14b) where the *only*-DP undergoes focus movement only the wide-scope reading where *only* takes scope above the imperative operator survives. As we can see, (14b) is felicitous only in Context B yielding the interpretation that *A is not allowed to paint the other tables*:<sup>4</sup>

<sup>3</sup> See Crnić (2013) for independent evidence for the availability of inverse scope of *only* with modals.

<sup>4</sup> A reviewer suggested that (14b) can become felicitous under context A if we add the adverbial *tote* ‘then’ in the end:

- (13) [mono to strogilo trapezi] vapse tote.  
           Only the round table paint then.

Although, I still prefer to have the *only*-phrase following the imperative under context#A, I think the reviewer is right that there is a contrast between (14b) and (13). However, this is not because the scope facts are reversed. *Tote* ‘then’ signals the speaker is willing to update his priorities given new evidence. In this particular context, the speaker acknowledges the addressee’s difficult situation, and therefore only allow him to paint the round table. i.e. the sentence still induces a prohibition against painting the other tables. This for example would happen in a scenario in which an employer really cares for his employee and behaves as a friend. It seems that *tote* ‘then’ has in general this function.

Context A

*You've asked me to paint those tables but I'm really tired and don't feel like doing something really useful today.*

Context B

*Oh, I feel like doing something really useful today. I think I'll paint the tables over there.*

- (14) a. Vapse [mono to strogilo trapezi].  
Paint only the round table.  
→ OK in Context A:  $\diamond > \text{only}$   
→ OK in Context B:  $\text{only} > \diamond$
- b. [mono to strogilo trapezi] vapse.  
Only the round table paint.  
→ Bad in Context A:  $*\diamond > \text{only}$   
→ OK in Context B:  $\text{only} > \diamond$

The scope ambiguity is not specific to the interaction with *only*, it is also attested with degree quantifiers such as *few*, *fewer than*.<sup>5</sup> (15a) in which *few* surfaces in-situ is felicitous in both Contexts A & B, whereas (15b), in which *few* has undergone overt movement, is only compatible with Context B. When *few* is interpreted below *Imp*, the interpretation is that *A is allowed to paint few tables (and it is O.K. to not paint all of them)* whereas when *few* takes wide scope the interpretation is that *there are few tables that the A is allowed to paint (the rest of them he is not allowed to paint)*.<sup>6</sup>

- (15) a. Vapse liga trapezia!  
Paint few tables  
→ OK in Context A:  $\diamond > \text{only}$   
→ OK in Context B:  $\text{only} > \diamond$
- b. Liga trapezia vapse!  
few tables paint  
→ Bad in Context A:  $*\diamond > \text{few}$   
→ OK in Context B:  $\text{few} > \diamond$

In what follows, I show that the scope ambiguity can be derived assuming that the imperative operator has existential as opposed to universal force, which derives the wrong meaning. If there is no operator at all, it becomes impossible to account for the scope interaction with overt movement.

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<sup>5</sup> Thanks to ... for pointing out the relevance of these data.

<sup>6</sup> ... (p.c.) observes that under this view, 'few' in (15b) is expected to have a specific interpretation. Indeed if we take *few* to undergo movement as a unit we expect a specific interpretation. However, there is also a possibility of *split-scope* interpretation which constitutes specificity judgements challenging. I leave this issue open as it is related with the analysis of *degree-expressions* in general.

### 3.1.2 Deriving the scope ambiguity

For the purposes of the discussion here, I follow a version of Horn’s (1969) analysis of *only* as a presupposition trigger; *only* takes as its argument a proposition  $p$ , presupposes that  $p$  is true and asserts the negation of all alternatives of  $p$ . Following Rooth (1992), the alternatives of  $p$  are computed by substituting the focused constituent ROUND with the relevant alternatives (i.e. SQUARE/TRIANGLE). For now we will use (16), as a working hypothesis for the meaning of an imperative clause, without being concerned about its compositional make-up. Once, we introduce our analysis it will become clear why I refrain from introducing an imperative operator with a particular meaning. The meaning in (16) conveys that there is a possible world  $w'$  in which the speaker’s desires are satisfied and the prejacent is fulfilled in  $w'$ .<sup>7</sup>

- (16)  $[[\text{Open the window}]]^{w,c} = \exists w' \in W. S_c \text{'s desires in } w \text{ are satisfied in } w' \wedge A_c \text{ opens the window in } w'$

When *only* has narrow scope, it attaches to the prejacent (below  $\exists$ ) yielding the LF in (17a) and the corresponding alternatives (*A paints the round/square/triangle table*). When *only* has wide-scope, it merges above  $\exists$ , deriving the LF in (17b) and the alternatives that  $\exists w' \in W. S \text{'s desires in } w \text{ are satisfied in } w' \wedge A \text{ paints the ROUND / SQUARE / TRIANGLE table in } w'$ :

- (17) a.  $\text{LF}(\diamond > \text{only}): [\diamond_{imp} [[\text{only}(\text{C}) \text{ round}_F \text{ table}] [\lambda x [\text{you paint } x]]]]$   
 b.  $\text{LF}(\text{only} > \diamond): [\text{only}(\text{C}) \text{ round}_F \text{ table}] [\lambda x [\diamond_{imp} [\text{you paint } x]]]$

Based on this, when *only* is interpreted below the existential operator (Context A), we get the meaning in (18a) that *there is a world consistent with S’s desires and A doesn’t paint the square/triangle table in this world*. When *only* takes scope above the existential modal (Context B), we get the interpretation in (18b) that *there is no world consistent with S’s desires in which A paints the square/triangle table*:

- (18) a.  $\exists w' \in W. S \text{'s desires in } w \text{ are satisfied in } w' \wedge \neg [A \text{ paints the SQR/TRG table in } w']$   
 $\rightarrow A \text{ is allowed to not paint the other tables.}$   
 b.  $\neg \exists w' \in W. S \text{'s desires in } w \text{ are satisfied in } w' \wedge A \text{ paints the SQR/TRG table in } w'$   
 $\rightarrow A \text{ is not allowed to paint the other tables.}$

<sup>7</sup> The meaning in (16) which involves a modal base relativised to the speaker’s desires is not uncontroversial. We will elaborate more on the modal flavor of imperatives in Section 5. At this point, even if one doesn’t agree with this meaning, the discussion focuses on the quantificational force of imperatives and therefore, to a large extent argumentation is independent from the modal flavor. That said, the meaning in (16) only serves the discussion that follows and will be revised in Section 5.

The data from Greek show that when the *only*-DP overtly moves, we get a wide scope reading. This can be explained if there is a covert existential as opposed to a universal or an ambiguous operator.

### 3.1.3 Scope facts under a universal analysis of *Imp*

Under a universal analysis of the modal operator, we can derive the expected interpretation for the examples in which *only* is in-situ, but we derive the wrong reading for the examples in which *only*-DP moves overtly. When *only* surfaces in-situ both readings are licensed for context A & B as shown in (19):

- (19) Vapse mono to strogilo trapezi!  
 Paint only the round table  
 →  $\Box > \text{only}$ : *A is required not to paint the other tables.*  
 →  $\text{only} > \Box$ : *A is not required to paint the other tables.*

When the *only*-phrase moves, only the wide scope reading ( $\text{only} > \Box$ ) is expected to survive. However, this interpretation is infelicitous under Context B (*Oh, I feel like doing something really useful today. I think I'll paint the tables over there.*), because it conveys that *A is not required to paint the other tables*, whereas the desired interpretation is that *A is required to not paint the other tables*.

Similarly, under an ambiguous analysis of imperatives (Grosz 2011), we would expect two possible readings for the example with overt focus movement:

- (20) [mono to strogilo trapezi] vapse!  
 Only the round table paint!  
 →  $\text{only} > \Box$ : *A is not required to paint the other tables.*  
 →  $\text{only} > \Diamond$ : *A is not allowed to paint the other tables.*

The absence of the reading in which *only* has wide scope above a universal modal suggests that the imperative operator must bear existential force. Unless there is some mysterious condition under which overt movement blocks the universal reading, it is hard to explain the interpretation of (20) assuming an ambiguity analysis.

## 3.2 Scope facts under a minimal approach

Assuming that there is no operator in the semantics, it is not possible to explain the facts as a scope ambiguity. Haida & Repp (2012) attempt to explain the ambiguity of the English data not as a scope ambiguity but as an ambiguity which arises by the imperative being interpreted as *command* or *permission*. However, the Greek data show that the ambiguity is scopal in nature.

The only solution would be to postulate a speech act operator (something that would be closer to Portner's approach but still an operator in the semantics). In this

case however, it is under question whether *only* could scope as high as a speech act operator (see Krifka 2001, Iatridou & Tatevosov 2016).

To summarize, the scope facts in Greek where overt focus movement resolves scope ambiguities, provide evidence in favor of a covert existential modal in imperatives and against a universal or a minimal approach. In the following, I present two more environments which reveal the existential character of imperatives; interaction with *even* and Free Choice licensing.<sup>8</sup>

### 3.3 Imperatives and *even*

Additional evidence for the existential character of the imperative comes from the licensing of the Greek scalar additive particle *akomi ke* ‘even’. The following sentence can only have a sensible interpretation if the scalar particle *akomi ke* is interpreted above a possibility modal operator.

Context: *Mary generally supports the left-wing parties and she tries to convince people to vote for a left party. However, this time there are some local elections of no importance. In this context, she can utter the imperative in (22) conveying that it’s OK for her even if A votes for the right wing party Nea Dimokratia.*<sup>9</sup>

- (22) Se aftes tis ekloges psifise akomi ke Nea Dimokratia.  
In these the elections vote.IMP even ADD Nea Dimokratia.  
‘In these elections, vote even for Nea Dimokratia.’  
↪ *In these elections, you can vote even for Nea Dimokratia...*

<sup>8</sup> In view of the treatment of *only*-ambiguities as scope ambiguities, a reviewer is wondering why we cannot detect further ambiguities i.e. with *every* and imperatives. The issue with a universal quantifier like *kathe* ‘every’ in contexts of free choice is that in some sense it “competes” with the FCIs which we discuss below. As noted already in Dayal (2004), *every* seems to resist a wide scope interpretation with overt possibility modals which makes it very difficult to test any scope facts with *every* and imperatives.

- (21) a. At this point in the race, any horse could win.  
b. #At this point in the race, every horse could win.

Dayal 2004: p.30

Whatever the explanation for the behavior of *every* is, it is equally difficult to make any claims regarding its scope with overt possibility modals as well as with imperatives. For this reason I focus on *only* and *even* which exhibit clear ambiguity depending on their surface position.

<sup>9</sup> Notice that although in this context the speaker expresses indifference, we can modify the context so that it conveys a lower level of permissibility. For example, in a context where the fascist party participates in the elections and there is danger that it gets into the parliament, Mary can desperately say (22), meaning that even voting for Nea Dimokratia is acceptable as long as the addressee doesn’t vote for the extreme right party.

*Akomi ke* can be analysed, similarly to *even*, as a propositional operator which gives rise to two presuppositions; it presupposes that i) the proposition is less likely than its alternatives (scalar presupposition) and ii) that some proposition from the contextual alternatives is also true (additive presupposition) (see Giannakidou 2007, Barouni 2018).

Crucially, *akomi ke* is not licensed with predicates like *vote* in episodic contexts. The additive presupposition cannot be satisfied because world knowledge tells us that we can vote only for one party. As a result the sentence in (23), like its English counterpart, is judged infelicitous by native speakers:

- (23) #Se aftes tis ekloges i Ana psifise akomi ke Nea Dimokratia.  
 In these the elections the Ana voted even ADD Nea Dimokratia  
 #‘In these elections, Ana voted even for Nea Dimokratia.’

However, once we add a modal operator, the additive can take wide scope and the sentence becomes fine. (24) is interpreted as providing permission or consent.

- (24) Se aftes tis ekloges boris na psifisis akomi ke Nea Dimokratia.  
 In these the elections can.2SG SUBJ vote.2SG even and Nea Dimokratia.  
 ‘In these elections, you can vote even for Nea Dimokratia.’

Assuming that in this context the possibility modal *can* provides permission and has a bouletic character (see Lauer 2015), the sentence conveys that:

- (25) a. There is a possible world compatible with the speaker’s desires in which the addressee votes for Nea Dimokratia (*assertion*).  
 b. Nea Dimokratia is the least likely party such that there is a possible world compatible with the speaker’s desires in which the addressee votes for it (*scalar presupposition*).  
 c. There is another party different from Nea Dimokratia such that there is a possible world compatible with the speaker’s desires in which the addressee votes for this party (e.g. a left-wing party) (*additive presupposition*).

It is not surprising, given our conclusions in the previous section, that imperatives license *akomi ke* deriving a similar interpretation as in (25).

By uttering (22) the speaker conveys that i) it is consistent with his desires for the addressee to vote for Nea Dimokratia, ii) this option is indeed the least expected for the speaker to consent and iii) there are certainly other parties that the speaker would not mind if the addressee voted for them.

Assuming that imperatives involve a possibility modal, we can account for imperatives like (22). On the contrary, under a universal modal hypothesis the

licensing of *akomi ke* ‘even’ is hard to explain. A universal modal operator is not licensed in this context. *Must*, *should* and *want* do not license *even*:

- (26) #Se aftes tis ekloges prepri/ tha-prepe / thelo na psifisis akomi  
In these the elections must /should / want.1SG SUBJ vote.2SG even  
ke Nea Dimokratia.  
and Nea Dimokratia  
a. #In these elections, you must/should vote even for Nea Dimokratia.  
b. #In these elections, I want you to vote even for Nea Dimokratia.

An ambiguity approach can also account for the licensing of *even* but as we saw in the previous section an ambiguity hypothesis is not supported by the scope facts.

English differs from Greek in the interaction of *even* with imperatives and the judgements for sentences like (22) vary among different speakers. However, it is worth mentioning that the English *even*, by virtue of its property to associate with an entire clause (broad focus), leads to the same conclusion regarding the existential character of imperatives. Francis (2019) shows that when *even* takes broad focus over the prejacent, the imperative must be interpreted as providing permission, i.e. it can only have a weak possibility modal interpretation. This is illustrated in (27)-(28). In (27), where the context foregrounds a *command* interpretation, a broad focus *even* yields infelicity whereas in (28) it is perfectly fine with a *permission*-interpretation. Context: *Prof. X is invigilating an exam and orders the students to stop writing.*

- (27) Put down your pens. [Close your exam papers]<sub>F</sub> #even.

Context: *Prof. Y is telling students who have been writing an exam that the test will no longer count toward their grades and they are free to do whatever they like.*

- (28) Put down your pens. [Close your exam papers]<sub>F</sub> even.

Francis 2019: (4)-(5)

These data provide further support for the present analysis which treats imperatives as involving an existential modal (see Francis 2019).

All in all, the evidence from the additive scalar particle in Greek and English, converges with our conclusions from the interaction of the exhaustive particle *mono* ‘only’ with imperatives. These facts present clear evidence for the presence of an operator in the semantics (otherwise scope interactions are difficult to explain)<sup>10</sup> which must be existential in nature. Further evidence in the same direction comes from Free Choice Items (FCIs) with imperatives.

<sup>10</sup> *Even* has been shown to take wide scope over speech act operators i.e. in questions as discussed by Iatridou & Tatevosov 2016. However, in this case *even* “comments” on the actual question, i.e. that the speaker is ignorant even about the question asked. Iatridou & Tatevosov’s (2016) *even* in imperatives should then yield a similar result, which is not the case as we see in the above contexts.



### 3.4 FCIs and imperatives

As it is well-discussed, imperatives license Free Choice Items (FCI) ( Schwager 2006, Aloni 2007, Kaufmann 2012 a.o.):

- (29) a. Pick any flower!  
b. Read any book!

Given that unmodified FCIs are licensed with existential (30) but not with universal modals (31), the compatibility of FCIs with imperatives can be taken as a supporting argument in favor of an existential and against a universal analysis of imperatives.

- (30) a. You may pick any flower!  
b. You may read any book!
- (31) a. \*You must/should pick any flower!  
b. \*You must/should read any book!

However, such a conclusion is disputed in the literature (Han 2000, Kaufmann 2012), arguing that in fact the data are more complex, supporting the universal approach. I briefly discuss their points showing that the first impression that imperatives behave as involving an existential modal in these contexts, is the right one.

Kaufmann (2012) argues that an imperative involving a FCI is not in fact interpreted as the corresponding sentence with an overt existential modal. In particular, she analyses an example like (29a) as having the interpretation that *the addressee must pick a flower* and that the speaker is indifferent as to which flower the addressee will pick (e.g. *you must pick a flower but I don't care which*).

However, this intuition is contradicted by the following examples in which the continuation clearly indicates that the prejacent of the imperative is not taken to be a requirement by the speaker:

Context: *A mother and her five-year-old son are visiting the botanical garden 'Jardin des plantes' in Paris. Her son, who aspires to become a gardener, wants to cut some rare kind of lilies to plant in his small garden. His mom, manages to convince him not to but he stays grumpy the entire time. When they arrive at her sister's place which has a small garden, his mom says:*

- (32) a. Here you go! Now pick any flower! Not that I'm happy with this but at least we will not end up imprisoned...
- b. Oriste! Tora kopse opjodipote luludi! Ohi oti mu aresi  
Here-you-are now cut.IMP any flower not that me.CL like.3SG  
kati tetio, omos tulahiston edo den tha mas valun filaki.  
something this but at-least here not FUT us.CL put.3SG prison

‘Here you are! Cut any flower. Not that I like this but at least here they will not put us in prison.’

In this example, it becomes clear that the parent imposes no obligation to the child to pick a flower and yet the FCI imperative is perfectly fine in this context.

The existential character of the imperative becomes even clearer when a FCI combines with an exceptive as in (33). In this example, the speaker would prefer that *the addressee doesn’t sing any song* as the continuation suggests. The meaning that we get is that the addressee is allowed to sing any song except a particular one. It cannot mean that he is obliged to sing a song.

- (33) a. Please, sing any song except this one. And even better keep your mouth shut.  
b. Se parakalo, traguda opjodipote tragudi ektos apo afto. Ke  
CL.2SG please sing.IMP any song except from this and  
tha tan akomi kalitera an den tragudages tipota.  
FUT be.PAST.3SG even better if not sing.PAST.2SG anything.

Notice that any sort of universal modal combined with an exceptive FCI sounds at least odd:

- (34) a. #You must sing any song except this one.  
b. #Prepi na tragudisis opjodipote tragudi ektos apo afto.  
must SUBJ sing.2SG any song except from this

A possibility modal is, of course, compatible and the interpretation is very similar to the one we get with imperatives:

- (35) a. You can sing any song except this one.  
b. Boris na tragudisis opjodipote tragudi ektos apo afto.  
Can.2SG SUBJ sing.2SG any song except from this

The behavior of FCIs is expected under theories of Free Choice (Dayal 2013, Chierchia 2013, Giannakidou 2001) assuming that imperatives involve an existential modal. On the contrary, if we take imperatives to involve a universal modal it is hard to account for these data.

Although we cannot do justice to the topic of Free Choice in imperatives in the scope of the present discussion, the data we saw suggest that FCI remains a good reason to doubt an all-universal analysis of imperatives (see Menendez-Benito 2005 for a similar argument in favor of an existential analysis of generic sentences).

### 3.5 Interim summary

In this section, I presented evidence from the interaction of imperatives with *mono* ‘only’ and *akomi ke* ‘even’ as well as from the distribution of FCIs in favor of the

existential character of imperatives. The question now is if we can formulate an analysis which can capture these facts without ignoring at the same time the stronger meanings of imperatives.

Stronger imperatives come in two varieties: the first type is plain imperatives which can express a request, a command, strong advice as we saw in (1). As it will be shown in the last section, this type can be derived from a primarily existential meaning. However, there is a second type of strong imperatives which cannot be captured if we analyse imperatives as always involving an existential operator. These are cases in which the imperative combines with a modal adverb expressing necessity or graded modality. In the next section, we present this type of imperatives in Greek, showing that their meaning cannot be captured by an all-existential analysis. This will lead us to Section 5, which provides an analysis for the observed variation without resorting to polysemy.

#### 4 Imperatives combined with modal adverbs

Imperatives in Greek can combine with an adverbial expressing universal force and derive an unambiguously strong (*command*) interpretation as in (36a) or with an adverbial encoding comparative preference as in (36b).<sup>11</sup> The latter has also a counterpart in English, *better*:

- (36) a. Oposdipote fige.  
           definitely leave.IMP.2SG  
           ‘Definitely leave’  
       b. Kalitera fige.  
           better leave.IMP.2SG  
           ‘Better leave.’

Interestingly, the interpretation of (36a) cannot be derived assuming an existential analysis whereas (36b) is not consistent with either an existential or a universal analysis. In what follows, we present the properties of *oposdipote*- and *better*-imperatives.

<sup>11</sup> These are true adverbials that in one way or another define the quantificational force of the imperative. They should be distinguished from certain particles in other languages, e.g. in German *bloss* and *ruhig* discussed by Grosz (2011) and Kaufmann (2012), which seem to affect the interpretation of imperatives in a similar way. I am making no claims regarding these particles in this paper but it would be interesting to see if the present analysis can explain these cases as well. Notice that like other modal adverbials they can appear in different positions but we assume that underlyingly the proposition is their complement.

#### 4.1 *Oposdipote*-imperatives

The adverbial *oposdipote* is generally used to express necessity and it is compatible both with epistemic and deontic/bouletic necessity.<sup>12</sup> In (38a) it expresses epistemic certainty. In (38b) it appears with an overt modal which expresses deontic necessity, and *oposdipote* adds more emphasis (i.e. modal concord as in Zeijlstra 2007 a.o):

- (38) a. O Nikos irthe oposdipote.  
The Nick came definitely.  
'Nick has definitely come.'  
b. Prepi oposdipote na erthis.  
must definitely SUBJ come.2SG  
'You must come definitely.'

When *oposdipote* is used with a possibility modal or even a weak necessity modal, the sentence is interpreted as involving two modal operators the possibility or the weak necessity modal and then on top of it, a necessity modal which, as shown in the following examples, expresses epistemic necessity. In this case, however, *oposdipote* must appear either in the beginning or in the end of the clause with an intonational break between *oposdipote* and the prejacent.

- (39) Oposdipote, boris na figis.  
Definitely can.2SG SUBJ leave.2SG  
'Definitely, you can leave.'

Similarly, if there is an intonational break between *oposdipote* and the imperative, we get an epistemic necessity modal on top of the existential, as predicted by our analysis. In these cases, *oposdipote* has to either precede or follow the imperative proposition.

- (40) a. Oposdipote, pigene sto parti.  
Definitely go.IMP to-the party.  
'Definitely, you can go to the party.'

<sup>12</sup> The exact meaning of *oposdipote* is hard to define in these environments. The interpretation is something like *under all circumstances*. It is interesting that morphologically it has the same form as Free Choice Items in Greek (i.e. wh-word + the suffix *dhipote*) but it doesn't behave like the other Free Choice Items (see Giannakidou 2001). It is more accurate to describe as a necessity adverbial. Interestingly, in German, the phrase 'auf jeden Fall' seems to have a similar function deriving an unambiguously strong imperative meaning:

- (37) Komm auf jeden Fall!  
come.IMP definitely

- b. Pigene oposdipote sto parti.  
 go.IMP desinitely to-the party.  
 ‘Go definitely to the party.’  $\leadsto$  *You must go to the party.*

However, when there is no intonational break or when the adverbial appears inside the clause (40b), the imperative is interpreted as unambiguously a command, i.e. inducing a requirement. This is illustrated by applying the same tests we used in Section 3 to argue in favor of the existential character of plain imperatives.

First, when we have both *oposdipote* and *only* in a sentence, we observe that when the *only*-phrase precedes the verb and *oposdipote* as in (41), we get an interpretation that *for the other books it's not necessary that A reads them*. The compatibility of the continuation in (41a) as opposed to the continuation in (41b) shows that *only* here takes scope above a necessity modal:

- (41) Mono afto to vivlio diavase oposdipote.  
 Only this the book read.IMP definitely  
 ‘Read only this book definitely.’  
 a. Ta ala ine proeretika.  
 ‘The others are optional’.  
 b. #Ta ala tha se berdepsun ke den tha grapsis kala.  
 The others FUT you confuse and not FUT write well.  
 ‘The others will confuse you and you will not write well (if you read them).’

When *only* appears below the verb and *oposdipote*, the *b*-continuation becomes immediately felicitous and the interpretation we get is that *it's necessary to read only this book and not read the other ones*. In this case, however, when the *only*-phrase is in-situ the wide scope interpretation of *only* is also possible (especially with certain intonation) thus rendering the *a*-continuation felicitous as well.

- (42) Diavase oposdipote mono afto to vivlio.  
 Read definitely only this the book  
 ‘Definitely read only this book’

The necessity character of the modal is also clear by the fact that it doesn't license Free Choice Items as opposed to plain imperatives. To the extent that (43a) is felicitous, it is only under the reading of the existential FCI, which can be paraphrased with the numeral *one* (43b).

- (43) a. %Tragudise oposdipote opjodipote tragudi.  
 Sing.IMP definitely any song  
 ‘Definitely sing any song.’

- b. Tragudise oposdipote ena opjodipote tragudi.  
sing.IMP definitely one any song  
'Definitely sing any song.'

Similarly, a FCI combined with an exceptive phrase is not felicitous with *oposdipote*:

- (44) #Tragudise oposdipote opjodipote tragudi ektos apo afto.  
sing.IMP definitely any song except from this  
'Definitely sing any song except this one.'

It should be clear by now that *oposdipote*-imperatives pattern with universal modals. This is further shown by the fact that the scalar additive particle *akomi ke* is inconsistent with an imperative as in (45). The only way to interpret (45) is to read it as involving two sentences but in this case a long pause is necessary after *oposdipote*:

- (45) Context: Mary usually urges people to vote for a left party. In these elections however, the fascist party participates and there is danger that it gets into the parliament, Mary can desperately say (45), meaning that even voting for Nea Dimoratia (a right-wing party) is acceptable as long as the addressee doesn't vote for the fascist party.  
a. #Psifise oposdipote akomi ke Nea Dimokratia.  
Vote.IMP definitely even ADD Nea Demokratia. .  
'#Definitely vote even Nea Demokratia.'

Having shown that imperatives which combine with *oposdipote* obligatorily get a necessity interpretation, we can now turn to the interpretation we get for imperatives which combine with *kalitera* (*better*).

## 4.2 *Better* - comparative possibility

When *kalitera* 'better' combines with an imperative as in (46), it gives rise to meaning which compares two alternatives and states that one is better than the other. In particular, we get the interpretation that *the speaker believes that it's better for A to leave than stay*.

- (46) Kalitera fige.  
Better leave.IMP.2SG  
'(You) better leave.'

In more complex sentences we can see that the alternatives depend on focus alternatives. For example, in (47a) the indirect object is focused deriving alternatives

of the form *better give x the book* whereas in (47b) the direct object is focused deriving alternatives of the form *better give John x*:

- (47) a. Kalitera dose sto GIANI to vivlio.  
           Better give to JOHN the book  
       b. Kalitera dose sto Giani to VIVLIO.  
           Better give to John the BOOK  
           ‘Better give John the book.’

The alternative can also be overtly represented with a comparative *than*-phrase.

- (48) a. Kalitera dose sto GIANI to vivlio para ston Petro.  
           Better give to GIANI the book than to Peter.  
       b. Kalitera dose sto Giani to VIVLIO para to portreto.  
           Better give to John the BOOK than the portret.

Importantly, in Greek the overt alternative can involve an imperative verb:

- (49) Kalitera mine para fige.  
       better stay.IMP.2SG than leave.IMP.2SG  
       ‘Better stay than leave.’

*Better*-imperatives are different from plain imperatives as they cannot be used in *permission/invitation* contexts or in *command/requests* in which a plain imperative gets a strong interpretation. Moreover, clearly the tests that we presented for the existential character of imperatives do not work for *better*-imperatives. FCIs are not licensed and *only* scoping above *better* does not even generate a possible interpretation. Similarly, the scalar *even* cannot scope above *better* and generate a sensible interpretation.

*Kalitera* ‘better’ is different than *oposdipote* in that it is only licensed with imperatives and root subjunctives, it cannot combine with possibility (50a), necessity (50b) or weak necessity modals (50c). This is true for Greek and for English. Some speakers marginally accept *better* with weak necessity modals but they still consider them degraded using a different construction instead.<sup>13</sup>

- (50) a. \*Kalitera boris na figis.  
           Better can.2SG SUBJ leave  
           ‘\*You can better leave.’

13 Notice however that in some languages the equivalent of *better* is compatible with a weak necessity modal or even a possibility modal. Meertens & Lauer (2018) present in detail how the German and Dutch counterpart of *better* differ from each other as well as from the Greek counterpart. As Meertens & Lauer (2018) point out the crosslinguistic differences are attributed to the *better*-items and not to imperative constructions which they assume to have a unified analysis crosslinguistically.



- b. \*Kalitera prepi na figis.  
Better must SUBJ leave.2SG  
'\*You must better leave.'
- c. \*Kalitera tha prepe na figis.  
Better FUT must.PAST.2SG SUBJ leave.2SG  
'\*You should better leave.'

It should be clear by now that we deal with three different creatures:

- i. Plain imperatives → *Existential force*
- ii. *Oposdipote*-imperatives → *Universal force*
- iii. *Better*-imperatives → *Comparative modality*

This variability in meaning can be explained either assuming that imperatives are truly polysemous or under a unified analysis in which variation arises due to the presence of *oposdipote* and *kalitera* respectively. We endorse the latter option arguing that the imperative construction has a basic unified meaning which is enriched depending on the environment it appears in.

## 5 Imperatives are minimal

In this section, I develop an analysis in which the imperative form per se does not involve a modal operator. Instead, I suggest that the imperative form at least in Greek and other languages that appear to have specific imperative morphology, associates with the imperative verbal mood which has a [+IMP]-feature. Now crucially, [+IMP]-*mood* carries certain presuppositions which enforce a modal interpretation.<sup>14</sup>

So far in this paper we have presented plain imperatives as conveying possibility relativized to the speaker's desires, such that an imperative like 'Open the window' has the meaning in (16) repeated in (51).

$$(51) \quad [[\textit{Open the window}]]^c = \exists w' \in W. S_c \text{'s desires in } w_c \text{ are satisfied in } w' \wedge A_c \text{ opens the window in } w'$$

Now the question is how we can derive such an interpretation but without assuming that the existential operator is part of the meaning of the imperative.

<sup>14</sup> As pointed out to me by xxxxxthis analysis shares some assumptions with Roberts's (2015) proposal, which also combines features from both the minimal and the modal approach. Although implemented in a totally different way, similarly to what is argued in the present paper, the prioritizing component is a presupposition. However, Roberts's (2015) analysis does not end up with a existential force. See also Charlow 2014.

Taking a step back, it is necessary to consider the internal make-up of an imperative clause. Suppose that the imperative form only involves a *mood*-Phrase with an imperative feature as in (52):

$$(52) \quad [_{MoodP} Mood_{IMP} [_{TP} T [_{VP} \dots]]]$$

The meaning we get at the level of *MoodP* is the propositional content *plus* whatever the semantic contribution of *Mood<sub>IMP</sub>* is. Our next task is to define the role of *imperative mood* (*Mood<sub>IMP</sub>*) which is critical for the derivation of imperative meaning. For this, I introduce some necessary background on verbal mood.

## 5.1 Background on verbal mood

Verbal mood is usually discussed in relation to the distribution of *indicative* vs. *subjunctive* in embedded contexts. In most cases, *imperative verbal* mood either is not discussed at all or it is taken to be the verbal mood of the *imperative sentence mood*. It is not possible within the scope of this paper to review all previous theories of verbal mood (Farkas 1992b, 2003, Quer 2009, Giannakidou 2015, Schlenker 2005, Portner 1997, 2011, Portner & Rubinstein 2012, Portner 2018, Silk 2018). There are good reasons to think that imperative mood shares many features with subjunctive (as opposed to indicative) but in this paper I will not get into their relation (see a.o. Huntley 1984, Portner 1997, 2015, Stegovec 2016). Instead, I focus solely on the imperative.

There are various ways in which the contribution of verbal mood has been described. A fruitful way put forth in various works with different perspectives (Portner 1997, Schlenker 2005, Matthewson 2010, Silk 2018) is to think of verbal mood as involving a feature which triggers a presuppositional restriction. The analysis of imperative mood developed here largely builds on Schlenker's (2005) view of mood *as introducing a presupposition on world-denoting variables* (Schlenker 2005: p. 1).

### 5.1.1 Schlenker's (2005) analysis of mood

Schlenker (2005) builds on the idea that mood can be analyzed on a par with tense and pronouns (see Stone 1997, Iatridou 2000, von Stechow 2002 for earlier parallelisms of this sort) *as presuppositions on the value of certain terms or variables*. Within this framework, he analyses indicative mood as carrying a marked feature triggering a presupposition that a proposition marked with indicative *denotes a world that lies in the Context Set of the speech act*. The notion of Context Set is introduced from Stalnaker (1975) and it refers to the set of the worlds which are compatible with what the speaker presupposes. Schlenker (2005) also argues that the subjunctive in French is the default, therefore not triggering a presupposition. As I said, we are

not going to discuss the *indicative-subjunctive* debate in this paper (see [Portner & Rubinstein 2012](#) for an overview and some problems with the notion of Context Set). What is rather interesting for our purposes is Schlenker's rather short and rough account, as he himself acknowledges, of the contribution of imperative mood.

According [Schlenker \(2005\)](#) *imperative mood* introduces a presupposition on the value of a term  $w$  indicating that the term  $w$  denotes a world which is compatible with *what the speaker requires* at the time and in the world of utterance ([Schlenker 2005](#): p. 12).

In addition, he assumes that there is a covert operator in imperatives roughly meaning  $I(=speaker)$  *require that*  $p$ . Under this view, the meaning of an imperative clause with the contribution of the presupposition will be that *each world compatible with what the speaker requires at the time and in the world of utterance is compatible with... what the speaker requires at the time and in the world of utterance*. As [Schlenker \(2005\)](#) points out this is vacuously true but the presupposition is satisfied.

For the rest of this section, I invite you to consider what would happen if there is no covert operator at first place as part of the imperative clause and instead we only have a presupposition triggered by the imperative mood, similar to the one suggested by [Schlenker \(2005\)](#).

## 5.2 Imperative mood as triggering a presupposition

First I present the basic idea in a nutshell and then I address one by one the issues arising by the analysis.

Under the present view (common to many analyses), special imperative morphology is associated with imperative verbal mood which carries a special [+IMP] mood feature. Following [Schlenker's \(2005\)](#) insight, I argue that imperative mood triggers a presupposition restricting the reference of the world term  $w$ . In particular, *imperative mood* restricts the reference of the world term to worlds consistent with what the speaker desires at the utterance context  $c$ , which is defined by a quadruple containing a speaker  $S_c$ , an addressee  $A_c$ , a time  $t_c$  and a world  $w_c$ :

$$(53) \quad [[mood_{IMP}]]^c = \lambda p \in D_{\langle st \rangle}. \lambda w': S_c \text{'s desires in } w_c \text{ at } t_c \text{ with respect to the } A_c \text{'s actions are satisfied in } w'. p(w') = 1$$

$Mood_{IMP}$  is then a propositional operator which contributes only a presupposition. The meaning we derive now at the level of  $mood_{IMP}P$  is a partial proposition from world to truth values:

$$(54) \quad [[mood_{IMP} p]]^{w,c} = \lambda w': S_c \text{'s desires in } w \text{ with respect to the } A_c \text{'s actions are satisfied in } w'. [[p]](w').$$

Now at the level of  $mood_{IMP}$  there are different possibilities for the interpretation of the world term. One of these possibilities is for the world variable to be restricted by the world of the utterance context  $c$ , which is usually the actual world. This would mean that it is presupposed that the speaker's desires are satisfied in the actual world and the prejacent holds in the actual world. However, we want to exclude this reading because as we know imperatives cannot express statements about the actual world. To illustrate, consider the contrast in (55):

- (55) a. #Stay! I know you will.  
b. I know you will stay and I want you to stay.

On the contrary, the speaker needs to encounter both the prejacent and its negation to be viable possibilities. This is formalized in Kaufmann (2012) as the *Epistemic Uncertainty Condition*:

- (56) An utterance of an imperative  $p$  in context  $c$  is felicitous only if the speaker takes both  $p$  and  $\neg p$  to be possible.

Although there are different ways to incorporate this intuition into the contribution of imperative mood, following Kaufmann's original intuition, I model this as an additional presupposition triggered by  $mood_{IMP}$ :

- (57)  $[[mood_{IMP} p]]^c = \lambda w'$ :  
-  $S_c$ 's desires in  $w_c$  with respect to the  $A_c$ 's actions are satisfied in  $w' \wedge$   
-  $(\exists w_1 \in Bel'_{S_c}(w) \wedge \exists w_2 \in Bel'_{S_c}(w)) \wedge [\neg p(w_1) \wedge p(w_2)]$ .  $[[p]](w')$ .

Now given the second presupposition in (57), we can exclude the possibility that the world variable is evaluated in the actual world, since this would amount to an assertion of  $p$  which is contradicted by the presupposition (the speaker takes both  $p$  and not  $p$  to be possible).<sup>15</sup>

Since the world variable cannot be evaluated in the actual world, we need some way to interpret the sentence. By default, existential closure applies to bind the

<sup>15</sup> The idea that the world variable in directive forms cannot be anchored to the actual world is definitely not new in the literature (Farkas 1992a). For example, Huntley (1984) characterizes imperatives as moodless, therefore lacking a world variable altogether (see Mastop for a constructive criticism of this idea). In another context, Reis (2003) suggests that the modal character of German root infinitives can be derived from their lack of anchoring with respect to time and the factual world (due to lack of tense/mood specification) which in turn leads to modal anchoring in order to fulfill the communicative force of the utterance (see Reis 2003: p. 183-184 for details). Gärtner (2014) builds on this idea and suggests an analysis of German root infinitives as involving existential closure of the world variable because it cannot be deictic to the actual world. Although Gärtner (2014) abandons this proposal for independent reasons, the idea I present here is very similar with the difference that non-anchoring to the actual world is guaranteed by the uncertainty condition.

world variable similarly to the existential closure in other cases (e.g. event variable, individual variable in passives).<sup>16</sup>

Therefore, if there is no other operator to bind the world variable, the meaning we get for an imperative like ‘*Stay*.’ is that *there is a world  $w'$  where the addressee stays in  $w'$* . The presuppositions will ensure that all the worlds in which the addressee stays are worlds in which the speaker’s desires regarding the addressee’s actions are satisfied and in addition via the uncertainty presupposition it is ensured that the speaker considers both alternatives (*A stay,  $\neg$ stay*) possible.

- (58)  $[[mood_{IMP} [A \text{ stay}]]]^c = \exists w'$ :
- $S_c$ ’s desires in  $w_c$  with respect to the  $A_c$ ’s actions are satisfied in  $w' \wedge$
  - $(\exists w_1 \in Bel'_{S_c}(w) \wedge \exists w_2 \in Bel'_{S_c}(w)) \wedge [\neg p(w_1) \wedge p(w_2)]$ .
- $A_c$  stays in  $w'$ .

Many questions arise from the current proposal. Some of them constitute long-standing puzzles in the literature of imperatives, like the modal flavor of imperatives or their performative character. However, before addressing those, I would like to elaborate on an issue specific to the present analysis, namely the way the presupposition of the imperative mood projects (Heim 1983, 1992, Schlenker 2011). Empirically it is clear that the presupposition needs to be locally accommodated, i.e. it is presupposed that there is some world which satisfies S’s desires. Otherwise we would get the impossible reading that all possible worlds are consistent with the speaker’s desires.

The issue of presupposition projection from quantified sentences is still quite debated.<sup>17</sup> Even empirically it is difficult to decide whether there is global or local accommodation and there seems to be considerable variation among linguists as well as native speakers (Sudo et al. 2012). In addition to this, there have been observed differences depending on the type of quantifier (Chemla 2009). In the case of existential quantifiers like *Some of the students drive their car to school*, the tendency is to prefer local accommodation, therefore inferring a weak presupposition that *only some of the students have a car*. Therefore, in the case of (58) it is not hard to argue that the presupposition is locally accommodated (Sudo et al. 2012).

However, it is also possible that the weak inference we get is not due to local accommodation but rather due to an implicit domain restriction enforced by the presupposition. Since contextual domain restriction in quantifiers is highly frequent especially when the domain is broadly defined, a presupposition can join the domain restriction of the quantifier. To illustrate, in a sentence like *Every child who walks*

<sup>16</sup> Grateful to — who raised the possibility of having existential closure in imperatives at a very early stage of this work.

<sup>17</sup> Under the Discourse Representation Theory (DRT, Geurts 1999, Beaver 2001), we expect local or intermediate accommodation in all cases.

*her dog...*, we don't get a presupposition that *every child has a dog* rather we restrict the domain of quantification into children who have dogs. Similarly in the case of imperative mood, I will assume from now on that the presupposition results in contextual domain restriction, such that we now quantify over worlds that are consistent with the speaker's desires.<sup>18</sup>

Now we can turn to the actual content of the presupposition. Although various researchers have argued for the bouletic character of imperatives (Bierwisch 1980, Wilson & Sperber 1988, Condoravdi & Lauer 2012), there are uses of imperatives which posit a challenge (Kaufmann 2016). The dialogue in (59) can be an example of disinterested advice, in which the speaker (S) has no interest or preference for the addressee (A) to take the train:

- (59) A: How can I get to Nuremberg from Berlin?  
S: Take the train.

Condoravdi & Lauer (2012) explain cases like (59) by general pragmatic principles. According to a general cooperative principle, the speaker adopts the addressee's goals/preferences as long as they do not contradict his own (cf. Kaufmann 2016). Consider the example in (60), which also starts out as disinterested advice but ends up in different opinions between B and A, such that B doesn't seem willing to adopt A's view, despite not having a particular interest or preference in the given situation.

- (60) A. How do I cut the expenses of my company?  
B. Fire all the employees who take high salaries.  
A. But you know I'd rather go bankrupt instead of doing this.  
B. I know but this is my opinion. In any case, I don't care. You can do whatever you want.

The above example shows that disinterested advice is not always as innocent as it appears to be and that, as Condoravdi & Lauer argue, even when a speaker provides disinterested advice, she can adopt the addressee's goals/preferences only to the extent that they do not contradict her own opinion, general views, ethics, etc.<sup>19</sup> This is further explicated in the following example from Condoravdi & Lauer (2012):

- (61) A: How do I get into the building?  
B: Officially, you are not allowed to but just go through this door.  
B': #I don't want you to but just go through this door.

<sup>18</sup> I would like to thank two anonymous reviewers as well as xxx for extensive discussion on this matter.

<sup>19</sup> Additional evidence for speaker anchoring in imperatives is provided in Stegovec (2019). Drawing evidence from obviation effects in Slovenian, Stegovec (2019) shows that imperatives involve perspectival agreement which in matrix contexts amounts to speaker anchoring whereas in questions there is perspectival shift to the addressee.

B’’: The only way is through this door. But I don’t want you to go / you are not allowed to go through this door.

[C&L 2012; p.42]

A second puzzle is how to derive their performative character. This is especially challenging for modal approaches to imperatives which are truth-conditional like the one developed here. As it has long been noticed we cannot judge an imperative as true or false. We can challenge an imperative (62a) but not directly target its truth or falsity with an expression like *This is not true* / *You are lying*, etc. (62b).

(62) Invite Meli!

- a. Wait a minute! I thought you don’t want me to invite Meli.
- b. #This is not true. / #You are lying. You don’t want me to invite Meli.

In order to account for performativity, I follow Kaufmann (2012, 2016) who argues that performativity of modal verbs such as *must* and the imperative should be treated in tandem and derived from the context they appear in.<sup>20</sup> In particular a performative interpretation arises when i) a priority modal provides an answer to a Question under Discussion (QUD) that expresses a *decision problem*<sup>21</sup> and ii) the speaker has epistemic authority over the issue. In this case, it is expected that the addressee will follow the advice provided for the decision problem, therefore resulting in the addressee taking action. What is crucial for the difference between typical deontic modals and imperatives is that imperatives presuppose (i) and (ii), therefore guaranteeing that they are always performative. Adapting Kaufmann (2012)’s analysis into the present analysis, we can integrate the requirement for a *practical context*

20 Kaufmann (2012) calls this context a *practical context*, defined in (63). The context is an octuple of the form  $\langle S, A, w, t, CS, \Pi, f, g \rangle$ , where S = speaker, A = Addressee, w = world, t = utterance time, CS = Context Set and f is the modal base and g the ordering source.  $\Pi$  represents the QUD.

- (63) A context  $c$  is practical for an agent  $\alpha$  (written a-PRACTICAL( $c$ )), iff
- a.  $\Pi c$  is a decision problem for  $\alpha$ , written  $\Pi_{\alpha}^{\Delta}$ , and
  - b.  $g_c$  represents a set of rules, preferences, or goals.
  - c. The salient modality in  $c$  is decisive, that is, CS entails that  $f_c, g_c$  characterize the modality relevant to resolve  $\Pi_{\alpha}^{\Delta}$ .

21 According to Kaufmann (2012, 2016), a *decision problem* for an agent  $\alpha$  is a set of non-overlapping propositions where each cell represents a future course of events that is choosable for  $\alpha$ . Condoravdi & Lauer’s notion of *effective preferences* shares a similar intuition, that the speaker needs to prioritize over future possible actions. However the implementation is different since it is part of the definition of the imperative operator.



as a presupposition, such that  $mood_{IMP}$  is defined only if it occurs in a practical context.<sup>22</sup> Now that we have tackled the basic issues with the meaning of imperatives we turn to the analysis of imperatives which involve an overt adverbial.

### 5.3 *Oposdipote*-imperatives

As we saw in Section 5.1, imperatives combining with *oposdipote* ‘definitely’ yield an unambiguously necessity reading. Given that *oposdipote* on its own is analysed as an adverbial conveying necessity, it is natural under the present analysis to analyse it as a quantificational operator which upon merging with the imperative binds the world variable and yields a universal reading.

In particular, *oposdipote* combines with a partial proposition from worlds to truth values and universally quantifies over the world variable. The domain condition guarantees that domain restriction will be as defined for  $p$ .

$$(64) \quad [[\text{oposdipote}]]^c = \lambda p_{st}. \forall w': w' \in \text{dom}(p). p(w')=1$$

Now if *oposdipote* combines with a  $mood_{IMP}P$  as in (65), it universally quantifies over the world variable, yielding the meaning in (66b).

- (65) *Oposdipote* fige!  
 definitely leave.IMP  
 ‘Definitely leave!’

- (66) a. [*oposdipote* [ $mood_P$   $mood_{IMP}$  [TP A leaves]]]  
 b.  $[[\text{oposdipote} [\text{mood}_{IMP} [A \text{ leave}]]]]^c = \forall w' \in W: S_c$ ’s desires in  $w_c$  are satisfied in  $w'$ .  $A_c$  leaves in  $w'$ .

Under this analysis, *oposdipote* is treated as a quantificational adverbial quantifying over worlds. As we said above, the presupposition enforces a domain restriction to worlds consistent with the speaker’s desires.

<sup>22</sup> Given that the present paper focuses on the variable force of imperatives I will not go into details about the role of imperative mood in performativity. However, I would like to point out that the performativity puzzle seems to be more general than just the performativity in imperatives. In Greek all matrix sentences with non-indicative mood (i.e. subjunctive and imperative) are performative suggesting that there is a close connection between verbal mood and sentence mood. Investigating the two in tandem might be a fruitful path to understanding the performative character of imperatives (see Portner 2018, 2016). It is possible for example that non-indicative mood always involves an *expressive* operator in the sense of Grosz (2012) such that the whole proposition cannot be characterized as true or false. Any hypothesis however should involve a detailed study of matrix non-indicative clauses which goes well beyond the scope of this paper.

## 5.4 Better-imperatives

The adverbial *kalitera* ‘better’ is different from *oposidpote* in that it involves a comparison between two alternatives, suggesting that one is better than the other. Formalizing this intuition, *kalitera* can be analysed as a comparative operator which takes two propositions,  $p$  and  $q$ , as its arguments and establishes a comparative relation between the two.<sup>23</sup> Notably, *better* seems to have a modal flavor on its own, since it always gives rise to prioritising modal interpretations. Therefore, we assume that a doxastic modal base  $f$  and a bouletic ordering source  $g$  is part of its meaning. Otherwise, we would expect *kalitera* ‘better’ to be consistent also with an epistemic interpretation (like *oposidpote*) which is never the case.

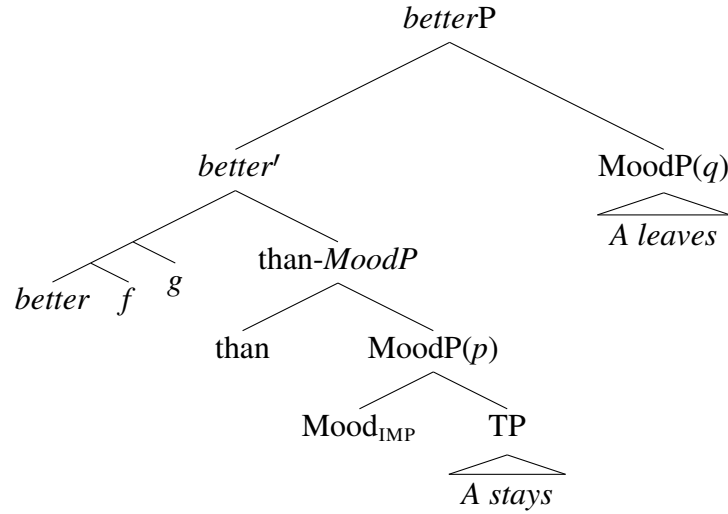
Syntactically, a *better*-imperative involves two clauses, with the *than*-clause being realized overtly or covertly as shown in (67) repeated from (49). As shown in (68) *kalitera* combines with two *mood*<sub>IMP</sub>*Ps*, which is evident from the fact that a morphological imperative can appear in the *than*-clause.

- (67) *Kalitera fige*            *para mine*.  
       better    leave.IMP than stay.IMP  
       ‘Better leave than stay.’

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23 *Better* can be analysed in different ways. One possibility would be to assume that it is derived compositionally from the degree adjective *good* combined with the comparative morpheme *-er* which would take as its restrictor the *than*-proposition  $p$ , stating a relation between  $p$  and the main clause  $q$ . However, since an ordinary *good*-adverbial is not licensed cross-linguistically, in such constructions, I follow a different path, treating *better* as a non-compositional chunk. The meaning of *better* follows the notion of comparative possibility in Kratzer 1981, 2012. Recent works on graded modality (Portner & Rubinstein 2016, Herburger & Rubinstein 2018, Lassiter 2017) highlight alternative and probably more efficient ways to derive gradability in the modal domain. However, for this paper, I try to remain as close as possible to Kratzerian view of modality focusing more on the ways quantificational force is defined in imperatives.

(68) *better-imperatives*



(69)  $[[\text{better}]]^w = \lambda f. \lambda g. \lambda p_{\langle st \rangle}. \lambda q_{\langle st \rangle}. \neg \exists u (u \in \cap f(w)) [p(u) = 1 \ \& \ q(u) = 0]$   
 $\& \exists v (u \in \cap f(w)). [q(v)=1 \ \& \ p(v)=0] \ \& \ u <_{g(w)} v$

Given the bouletic character of the ordering source, the meaning in (69) states that:

✓ *There is no world  $u$  such that  $u$  is compatible with the  $S$ 's desires and  $p$  is true in  $u$  and  $q$  is false in  $u$*

✓ *There is a world  $v$  such that  $v$  is compatible with  $S$ 's desires and  $p$  is false in  $v$  and  $q$  is true in  $v$*

✓  *$v$  is ranked higher with respect to  $S$ 's desires than  $u$*

In other words, *for every world  $v$  compatible with  $S$ 's desires in which  $q$  is true and  $p$  is false and for every world  $u$  compatible with  $S$ 's desires in which  $p$  is true and  $q$  is false, then  $v$  is ranked higher than  $u$  with respect to the speaker's desires.*

The bouletic presupposition conveyed by  $\text{Mood}_{\text{IMP}}$  is still present and consistent with the meaning of *better*, it is simply redundant since it is entailed by the meaning of *better*.

This meaning correctly predicts that cases in which both alternatives are true might be equally good (70a), better (70b) or worse (70c) compared with the worlds in which only the prejacent is true.

(70) Better dance with Peter than John.

- a. But if you want, you can dance with both of them.
- b. Of course, if you can dance with both even better!

- c. But make sure you don't dance with both of them.

Furthermore, the meaning in (69) captures the intuition that by uttering (70) the speaker doesn't say that he necessarily wants the addressee to dance with Peter. This is shown with the continuation in (71):

- (71) Better dance with Peter but it's even better if you don't dance at all.

To sum up, we see that by removing quantificational force from the imperative form, we are able to capture the different interpretations which arise when the imperative merges with different adverbs, such as *kalitera* 'better' and *oposdipote* in Greek. Now, we turn to stronger meanings of imperatives which emerge without the presence of an overt operator.

## 6 Strengthened readings of imperatives

Turning to plain imperatives again, the present analysis predicts that in the absence of an overt operator a possibility meaning is derived via existential closure. Under this view, we have to account for the stronger readings (i.e. *command/request*) which are very common especially in *out-of-the-blue* contexts. It is especially these *out-of-the-blue* environments which derive by default a *command/request* interpretation that has lead grammarians throughout the years to associate imperatives with a strong 'imperative' meaning.

I show that this correlation between a *command/request* reading and an out-of-the-blue context, is explained once we consider what the focus alternatives are in these contexts. I present the mechanics for the derivation of the stronger interpretation, showing that it is derived as an implicature based on two conditions: i) the lack of a stronger counterpart and ii) exhaustification over certain focus alternatives.

### 6.1 Condition I: Lack of a stronger scalar counterpart

It has long been observed that a sentence with an overt possibility modal as in (72) resists a stronger universal inference. This is due to the derived scalar implicature considering the fact that the speaker didn't use the stronger scalar counterpart of *can*, the universal modal *must*.

- (72) You can open the door.  $\nrightarrow$  You must open the door.

The exact mechanism for the derivation of the implicature depends on the theory one follows. For now, it is not important whether one favors a pragmatic (neo-Gricean) (Spector 2007, van Rooij & Schulz 2004, Sauerland 2004, Chemla 2008)) or a grammatical (Chierchia 2006, 2013, Chierchia et al. 2012, 2009, Fox 2007)

view for the derivation of scalar implicatures. For ease of exposition I stick to the grammatical approach as outlined in Chierchia et al. (2009).

Under this approach, there is an Exhaustivity operator (EXH) that negates the alternatives and is responsible for the generation of the implicature. The EXH-operator states that the proposition  $S$  is true and that the only members of ALT that are true are those entailed by  $S$  (Chierchia et al. (2009); p.4). The formal definition is given in (73):

$$(73) \quad [[\text{EXH}_{ALT}(S)]]^w = 1 \text{ iff } [[S]]^w = 1 \text{ and } \forall \phi \in ALT (\phi(w) = 1 \rightarrow ([[S]] \subseteq \phi))$$

The alternatives in the case of the example in (72) will be the propositions derived by substituting *can* with its Horn-scalemate *must*. By applying EXH to the alternatives, we derive the implicature that *it's not the case that you must open the door*.

Now the question is why imperatives, since they are also analysed as expressing possibility, do not give rise to a similar implicature. The notion of scalar implicature relies on the existence of scalar alternatives. Since the possibility reading in imperatives is derived via existential closure, there is no actual possibility modal to substitute. The absence of scalar alternatives in this case is what prevents the derivation of an implicature along the lines in (72). This in turn licenses the emergence of a stronger interpretation. The idea that in the absence of scalar alternatives, stronger meanings can be derived, therefore giving rise to variable quantificational force is not new. In the domain of modality, Deal (2011) suggests that modal suffixes in Nez Perce are existential in character but they are not part of the Horn Scale, they do not have a stronger counterpart (cf. Rullmann et al. 2008). According to Deal (2011) the absence of an implicature is a key-point in explaining why these suffixes can be used in contexts where a universal modal could appear. This idea has been employed in explaining other instances of quantifiers with apparently ambiguous force (Meyer 2013, 2016, Bowler 2014, Bar-Lev & Margulis 2013, Bassi & Bar-Lev 2016a).

## 6.2 The importance of focus alternatives

So far, we have seen that the lack of a stronger scalar counterpart licenses a stronger interpretation. However, this doesn't explain what enforces a stronger interpretation in certain contexts. I argue that the *command/request* interpretation is the result of an implicature derived when there are certain focus alternatives. In particular, when the alternatives involve the negation of the prejacent.

Following Rooth (1992), the alternatives of  $p$  can be any proposition of type  $\langle st \rangle$ . When an imperative  $mood_{IMP} p$  is uttered in an *out-of-the-blue* context I take the only

contextually salient proposition to be  $mood_{IMP} \neg p$ ,<sup>24</sup> thus deriving the alternatives in (75) for an imperative sentence like ‘Open the window’:<sup>25</sup>

$$(74) \quad [[Open\ the\ window]]^c = \exists w': S_c's\ desires\ in\ w_c\ with\ respect\ to\ the\ A_c's\ actions\ are\ satisfied\ in\ w'.\ A_c\ opens\ wnd\ in\ w'.$$

$$(75) \quad [[Open\ the\ window]]^{c,F} = \left\{ \begin{array}{l} \exists w' \in W: S_c's\ desires\ in\ w_c\ satisfied\ in\ w' \wedge A_c\ opens\ wnd\ in\ w' \\ \exists w' \in W_c: S's\ desires\ in\ w_c\ satisfied\ in\ w' \wedge \neg[A_c\ opens\ wnd\ in\ w'] \end{array} \right\}$$

The focus alternatives are then evaluated by the EXH-operator, introduced above, and all non-weaker alternatives are negated, thus deriving the implicature in (76):

$$(76) \quad \neg \exists w' \in W: S_c's\ desires\ in\ w_c\ are\ satisfied\ in\ w' \wedge \neg[A_c\ opens\ wnd\ in\ w']$$

By exhaustifying the alternatives we get the interpretation that *there is no world that is compatible with S's desires in which A does not open the window*. This is equivalent to saying that *A must open the window*, thus capturing the strong-reading of the imperatives when they are intended as *commands, requests, wishes*, etc.

The reader can see now how this analysis presents the mirror picture of the analysis presented in Kaufmann (2012). For her, the imperative operator is a universal modal composed from an existential modal and an exhaustifier. In certain contexts (e.g. *for-example-advice*) the exhaustive operator is removed resulting in a possibility meaning. Under the present analysis, the imperative involves just a possibility modal. Exhaustification applies in certain environments upon the emergence of alternatives. There is nothing special to be said about this exhaustification mechanism because

24 As one can notice, the present proposal raises a question regarding the complexity of alternatives. Fox & Katzir (2011) suggest a theory for the computation of alternatives which does not allow alternatives which are structurally more complex than their prejacent. Clearly, the negation of a proposition  $p$  is structurally more complex than  $p$ . Fox & Katzir's analysis provides a way out of this problem. In the definition for the calculation of alternatives, Fox & Katzir allow more complex alternatives as long as they are imposed by the context as relevant alternatives. I argue that the negation of a proposition  $p$  is always a contextual salient alternative when  $p$  is broadly focused. This not only allows us to derive the right meaning for strong imperatives but it also captures the intuition that in out-of-the-blue contexts an imperative expresses a preference between  $p$  and  $\neg p$  (cf. Starr 2011). For a detailed discussion see Author, pp.

25 A different issue concerns the nature of alternatives. Namely, a reviewer raises the possibility that the entire proposition with the existential operator is negated. This, however, would be a case of verum focus realized with a NPA on the verb and yielding a possibility reading since the only alternative contradicts the assertion. These are the permission cases I discuss below. An alternative question is why the universally quantified sentence cannot be an alternative. The idea is that since there is no lexical item bringing in existential force but rather just an operation of existential closure, we cannot substitute an item with another, therefore as I said above we exclude the possibility of a stronger alternative.

it is a mechanism that is independently available for the derivation for all sort of implicatures.

Clearly, under the present analysis prosodic marking plays a key role in the interpretation of imperatives. When the prejacet is broadly focused, we get a necessity interpretation.

This predicts that imperatives which convey pure *permission* bear a distinct prosodic pattern from *command/request*-imperatives. In Greek, *permission*-imperatives are associated with a Nuclear Pitch Accent (NPA) on the verb followed by deaccenting which is clearly different from broad focus marking attested in *commands/requests*. This pattern is attested not only in permissions which appear in the context of a countervailing prohibition but also in offers/invitations (e.g. *Have a chocolate, have a sit*, etc.) where there is no previous context suggesting that *p* is not permitted.

Other prosodic patterns, such as narrow focus on a constituent can have either a permissive or a directive interpretation depending on the context. For example, the imperative in (77) with narrow focus on *vanilla* provides permission to the child to eat vanilla ice-cream but it also conveys a prohibition against eating other ice-cream flavors (e.g. chocolate ice-cream).

- (77) Context: *A child asks for ice-cream at 10p.m. His mother desperately says:*  
O.k... Eat VANILLA ice-cream... Although, you shouldn't eat any ice-cream.  
→ *You are not allowed to eat chocolate, brownie, etc.*

On the other hand, in (78), where it is already established that a window must be opened, the imperative clause conveys that *A can open the front window but not the back window*.

- (78) Context: *It stinks in here.. You should open a window..*  
Open the FRONT window!  
→ *You are not allowed to open the back window, etc.*

Crucially, in addition to focus marking, there seem to be more prosodic cues which the speakers use in order to disambiguate an imperative, presenting a field for future exploration. Our understanding of the role of intonation in the interpretation of imperatives is still very preliminary. Recent experimental work by Jeong & Condoravdi (2018b,a) shows that there are indeed many different prosodic cues which affect the interpretation imperatives. Under the current analysis, focus is one of them indicating the possible alternatives. As Jeong & Condoravdi (2018b,a) point out it seems that imperatives do not have a distinct prosodic pattern, we simply employ general prosodic cues which are available in language in order to differentiate between different types of imperatives.



## 7 Concluding remarks and further questions

The present paper examines imperatives in different environments showing that we cannot account for their interpretation assuming an all-universal or an all-existential analysis or even an ambiguity analysis. Scope facts with *only* and *even* suggest an existential analysis whereas the stronger meanings that we get when imperatives combine with *kalitera* ‘better’ or *oposdipote* ‘definitely’ in Greek suggest otherwise. Given this apparently ‘conflicting’ evidence, I analyse imperatives as mood-Phrases with an imperative mood feature (IMP), without a modal operator. The modal interpretation arises in the course of the derivation due to the presupposition contributed by imperative mood, restricting the reference of the world term to worlds consistent with the speaker’s desires.

In the absence of an overt operator, existential closure applies deriving a possibility meaning for imperatives. Under this view, we can explain how the stronger readings are derived in plain imperatives. Since, there is no possibility modal at first place, there is no scalar implicature of the *can-must* type, that will prevent a stronger meaning from arising. A stronger interpretation is derived as an implicature by exhaustifying over focus alternatives. In the case of broadly focused imperatives uttered in *out-of-the-blue* contexts, the only contextually salient alternative is the negation of the prejacent. In this way, by doubly negating a possibility we end up with a necessity interpretation.

On the other hand, stronger readings of imperatives in the presence of the adverbials *kalitera/better* and *oposdipote* cannot be derived as implicatures, since they are independent of the prosodic pattern of the clause and they are unambiguous irrespective of the environment they appear in. The ‘minimal’ analysis allows us to treat *oposdipote* as a universal which quantifies over the world variable and *better/kalitera* as a comparative operator.

Overall, the present account is in some sense a combination of a modal and a minimal approach, in that it treats the imperative as modalless but eventually it ends up with a modal interpretation. In addition, it differentiates between strong readings of plain imperatives treating them as implicatures versus strong readings which emerge in the presence of certain adverbials which are responsible for the stronger meaning. Adopting a minimalized approach for imperatives can also facilitate our understanding of non-canonical uses of imperatives such as IaDs (cf. von Fintel & Iatridou 2017) and difficult imperatives (Demirok & Oikonomou 2018).

Finally, the idea that in the absence of an overt operator, existential closure applies is possibly extendable to other cases of covert modality. For instance, dispositional middles have been shown to have an existential meaning which could be derived in a similar way (see Menendez-Benito 2005). Another instance of covert modality, is the conditionals. Herburger (2015), Bassi & Bar-Lev (2016b) provide arguments

in favor of an existential analysis. If this is true, we can formulate a hypothesis that in the absence of an overt modal operator, existential closure applies in modal environments deriving a possibility reading which can undergo strengthening in the absence of a scalar implicature. From what we know so far, several patterns of covert modality have variable force depending on the environment they appear in, making it worth-investigating a hypothesis along these lines.

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