Excluding Imperatives

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1 Introduction

This squib discusses a puzzle regarding the interpretation of the exclusive particles *just* and *only* in imperatives, with the goal of understanding a construction which I will call an EXCLUDED IMPERATIVE (1). This construction is common and idiomatic, but it has not been studied in depth before, to the best of my knowledge. Intuitively, speakers use excluded imperatives when they want to diminishing the size of the obligation introduced by the imperative.

(1)   a.   Just do it!
          b.   Just turn left at the post office and you'll be at the theater.
          c.   Just open your eyes and look around you.
          d.   If you want to know something about me, just ask!

(2)   # Only do it!

Curiously, excluded imperatives only occur with *just* (2), while *only*—*just*'s better-studied cousin—gives rise to a very different interpretation which I will call OBLIGATED EXCLUSION. This is the main problem I will address. In my analysis I ascribe the difference in meaning to the relative scope of the exclusive and a modal imperative operator. While *just* is able to scope over the modal, *only* is trapped underneath it. I connect this inability of *only* to take wide scope to a more general property of *only* that it cannot scope over certain polarity sensitive modals.

The paper is structured as follows. Section 2 presents the central data points of the puzzle. Section 3 addresses the compositional semantics of exclusives and imperatives. A scope analysis of the difference between excluded is proposed in section 4. In section 5 I discuss the relationship between *only* and polarity sensitive modals, and in section 6 I revise the presuppositional component of analysis. Section 7 is the conclusion.

2 The Puzzle

You buy a packet of sea monkeys. These tiny brine shrimp come dehydrated and in suspended animation, but with a little water they spring back to life. On the packet instructions you read sentence (3a). The reader is encouraged that, compared with other pets, these ones require very little care and attention. Now, imagine instead that the instruction read (3b). The effect is to warn the reader not to add any other substance to the sea monkeys, or else risk of unknown consequences.

(3) a. Just add water!
     b. Only add water!

The puzzle is to explain why *just* and *only* give rise to these different two readings. The EXCLUDED IMPERATIVE reading pops out when the imperative *add water* is modified with the exclusive *just*, but the OBLIGATED EXCLUSION reading comes out with *only*.

The contrast in (3) is surprising for two reasons. First, in many other environments, *just* and *only* can be exchanged without any obvious effect on truth conditions:

(4) Why did my sea monkeys die?

     a. ... I just added a drop of whiskey to the tank!
     b. ... I only added a drop of whiskey to the tank!

Second, *just* and *only* actually give rise to similar readings in the presence of deontic necessity modals. The following sentences both closely resemble excluded imperatives.

(5) a. You just have to add water (to reanimate your sea monkeys).
     b. You only have to add water (to reanimate your sea monkeys).

The puzzle has two main sub-parts. First, how are the two readings derived compositionally from the meaning of imperatives and exclusives? Second, how is the difference between *just* and *only* in imperatives relate to more general properties of those exclusives? These questions will be addressed in sections 4 and 5, respectively.

3 The Puzzle Pieces

First, I will introduce the compositional semantics of exclusives and imperatives, the two functional parts needed to address the semantics of excluded imperatives, and imperatives with *only*.

3.1 Exclusives

On one standard analysis of the exclusive particle *only* due to Horn (1969, 2000), sentences like (4b) have both a presupposed component (P) and an at-issue component (A) and as

follows:

(6) P: I added (at least) a drop of whiskey to the tank
     A: I didn't add more than a drop of whiskey to the tank.

In my analysis of *only*, I suppose there is a function ALT of type $\langle\tau,\langle\tau,t\rangle\rangle$ which maps any expression of type τ to its set of focus alternatives. ALT is sensitive to both the compositional semantics of the expression (Kratzer and Shimoyama, 2002) and the current question under discussion (QUD; Coppock and Beaver, 2013).

The lexical entry for *only* given in (7) takes after Horn (1969) and Chierchia (2013). The prejacent P(x) is presupposed, and *only*'s at-issue contribution is to negate all the alternatives of the prejacent not entailed by the prejacent itself.[1] Based on the apparent equivalence of sentences like (4), I will assume for now that *just* shares this lexical entry.

(7) ONLY (version 1)

    a. $[\![only]\!](P)(x)$ is defined only if P(x)
        (P: x has property P)
    b. $[\![only]\!] = \lambda P\lambda x[\forall\phi_{\in ALT(P(x))}[P(x)\not\subseteq \phi \rightarrow \neg\phi]]$
        (A: None of the (non-entailed) alternatives to P(x) are true)

In (8) I illustrate how to applying this lexical entry to example (4b). Assuming the current QUD is "How many drops of whiskey did the speaker add?", the value of ALT(*add-one-drop′*) is as follows: {*add-2-drops′*, *add-3-drops′*, ...}. The at-issue contribution is to negate all the alternative not entailed by *add-one-drop′*(I), i.e. I did not add 2, 3, or more drops of whiskey to the sea monkey tank. Assuming that *add-2-drops′* entails *add-1-drop′*, the presupposition is that I did indeed add at least one drop.

(8) a. $[\![only]\!]$(*add-1-drop′*)(I) is defined only if *add-1-drop′*(I)
        (P: I added (at least) 1 drop of whiskey)
    b. $[\![only]\!]$(*add-1-drop′*)(I)
        $= \forall\phi_{\in\{add\text{-}2\text{-}drops′(I),add\text{-}3\text{-}drops′(I),...\}}[add\text{-}1\text{-}drop′(I)\not\subseteq \phi \rightarrow \neg\phi]$
        (A: I didn't add more than 1 drop of whiskey)

3.2 Imperatives

Much of the literature on imperatives focuses on the relationship between imperatives and modality. For simplicity, in my solution I will adopt Kaufmann's (2011) analysis which reduces imperatives to modal assertions.

I will suggest two pieces of evidence for Kaufmann's view. First, consider (9): the speaker's utterance of the imperative gives rise to a context in which it is mutually under-

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[1] I have deliberately chosen P$\not\subseteq$P' as the condition for excluding P', rather than P'$\subset$P. These are equivalent conditions if $\forall$P'$_{\in ALT(P)}$[P$\subseteq$P' $\vee$ P'$\subset$P], i.e. all members of ALT(P) either entail or are entailed by P. However in general the alternatives of P need not stand in an entailment relation with P, in which case it is safe to exclude all and only those alternatives which not entailed by P.

stood that the addressee has an obligation to wash the dishes (it is a deontic necessity), hence to assert otherwise is contradictory.

(9)   Wash the dishes! #You shouldn't wash the dishes.

Second, imperatives and modals like *should* allow parallel sets of interpretations, as shown by examples due to Portner (2007). Imperatives can carry a variety of illocutionary forces (10), while (performative) modal assertions with *should* can pick up a variety of ordering sources (in the framework of Kratzer (1981)).

(10)   a.   Wash the dishes! (Order)
        b.   Talk to your advisor more often! (Suggestion)
        c.   Have a cookie! (Permission)

(11)   a.   You should wash the dishes (in view of your obligations).
        b.   You should talk to your advisor more often (in view of your goals).
        c.   You should have a cookie (in view of your desires).

Kaufmann (2011) explains both of these facts by analyzing imperatives as assertions with a silent modal operator OP_{imp}, which takes a propositional argument. Simplifying slightly, the meaning of OP_{imp} is Kratzer's (1981) necessity with contextually supplied modal base and ordering source. In what follows I use OP_{imp} to refer to the silent element, and $\Box$ to refer to its meaning.

4   Deriving the two readings

With the compositional pieces in place, it is now possible to address the original contrast (repeated in (12)). In this section I will focus on the at-issue content only, returning to the presupposed content in section section 6.

(12)   a.   Just add water! (excluded imperative)
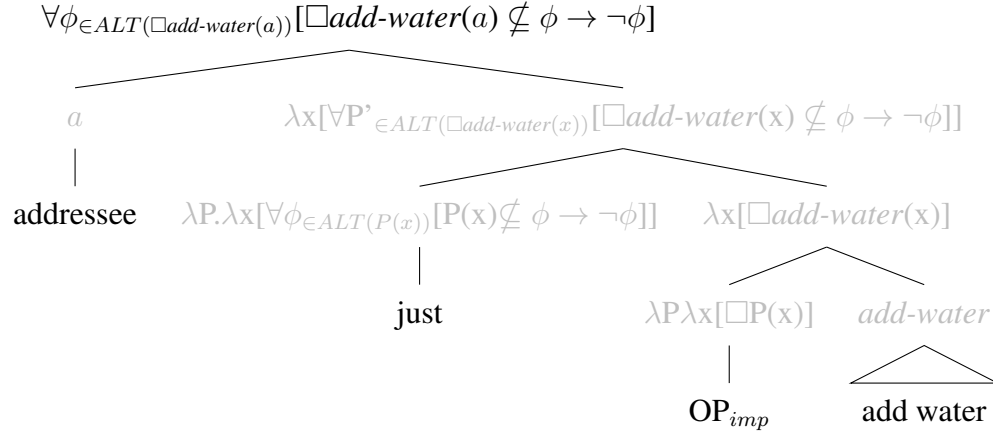   b.   Only add water! (obligated exclusion)

The difference in meaning can be attributed to the relative scope of the imperative modal operator OP_{imp} and the exclusive particle. The excluded imperative reading is obtained when the exclusive scopes over the modal (13), and the obligated exclusion reading when the exclusive scopes below (14).

4.1   Excluded Imperative

The tree in (13) shows the how excluded imperatives are compositionally derived. The alternatives that *just* sees are all the propositions equivalent to *addressee should do X*. Then, *just* negates all the alternatives (as long as they aren't entailed by the prejacent). We

can paraphrase meaning of excluded imperatives as, "out of all the alternative obligations, exclude the stronger ones".
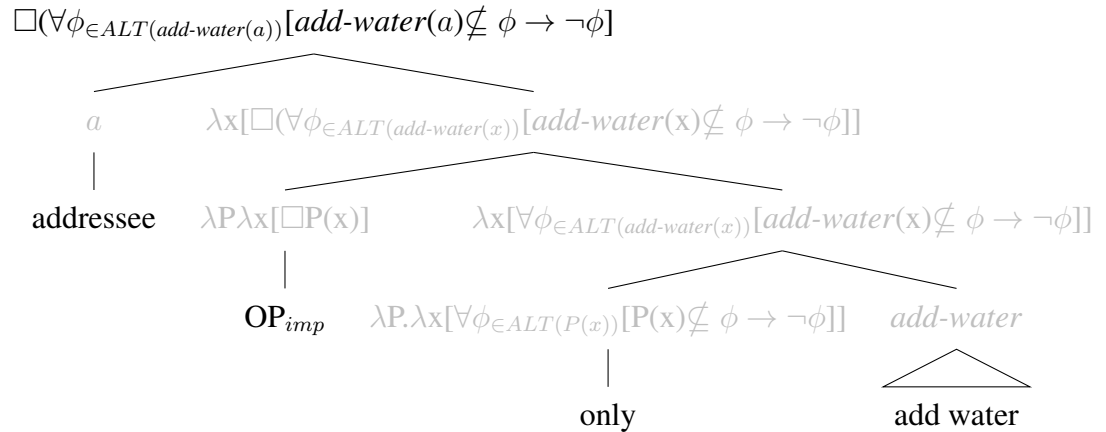
(13)   Excluded Imperative (with *just*)

$$\forall \phi_{\in ALT(\Box\textit{add-water}(a))}[\Box\textit{add-water}(a) \nsubseteq \phi \rightarrow \neg\phi]$$

a — addressee

$\lambda x[\forall P'_{\in ALT(\Box\textit{add-water}(x))}[\Box\textit{add-water}(x) \nsubseteq \phi \rightarrow \neg\phi]]$

$\lambda P.\lambda x[\forall\phi_{\in ALT(P(x))}[P(x)\nsubseteq \phi \rightarrow \neg\phi]]$ — just

$\lambda x[\Box\textit{add-water}(x)]$

$\lambda P\lambda x[\Box P(x)]$ — OP_{imp}

add-water — add water

4.2 Obligated Exclusion

To get the obligated exclusion reading, the exclusive *only* applies first before OP_{imp}. The alternatives it sees are all the propositions of the form *addressee adds X*, and exclusion gives a proposition expressing *addressee adds no non-water thing*. This is the argument of OP_{imp}, hence the obligation. We can paraphrase obligated exclusions as, "out of all the alternative actions you might take, you are obligated to not take the stronger ones".

(14)   Obligated Exclusion (with *only*)

$$\Box(\forall\phi_{\in ALT(\textit{add-water}(a))}[\textit{add-water}(a)\nsubseteq \phi \rightarrow \neg\phi]$$

a — addressee

$\lambda x[\Box(\forall\phi_{\in ALT(\textit{add-water}(x))}[\textit{add-water}(x)\nsubseteq \phi \rightarrow \neg\phi]]$

$\lambda P\lambda x[\Box P(x)]$ — OP_{imp}

$\lambda x[\forall\phi_{\in ALT(\textit{add-water}(x))}[\textit{add-water}(x)\nsubseteq \phi \rightarrow \neg\phi]]$

$\lambda P.\lambda x[\forall\phi_{\in ALT(P(x))}[P(x)\nsubseteq \phi \rightarrow \neg\phi]]$ — only

add-water — add water

4.3 Getting the alternatives right

In both cases, to get the right result it is crucial that the alternative set seen by the exclusive is compositionally derived. Following Kratzer and Shimoyama's (2002) compositional alternative semantics the focused element introduces a set of alternatives, which grows by

element-wise function application until it reaches an alternative-sensitive operator (in this case the exclusive). Suppose focus is on *water*, then the alternatives are built as in (15).

(15)   a.   ALT(*water*) = {x: x ∈ D}
        b.   ALT(*add-water*) = {add(x): x ∈ D}
        c.   ALT(OP_{imp}(*add-water*)) = {OP_{imp}(add(x)): x ∈ D}

In excluded imperatives, (15c) is the alternative set seen by *just*. In the obligated exclusion sentence, the relevant alternatives are as in 15b.

4.4   Additional Predictions

The account outlined above predicts that it should be possible to force an excluded imperative or obligated exclusion reading simply by forcing the exclusive to scope above or below a necessity modal, respectively. Fortunately, this can be tested easily as both *just* and *only* occur in a wide variety of syntactic positions with different scope possibilities.

Both exclusives can function as DP-modifiers and exclude *water* (16a–b), where they are trapped well below the scope of OP_{imp} or an overt modal. As predicted, these sentences all give rise to the obligated exclusion reading alone. By contrast, when the exclusives precede modals like *have to*, they are forced to scope above, giving rise to the excluded imperative reading (16c).

(16)   To reanimate your sea monkeys...

        a.   Add only/just water.   □ > EXCL
        b.   You have to add only/just water.   □ > EXCL
        c.   You only/just have to add water.   EXCL > □

However, the situation is somewhat more complicated with VP-level exclusion (17). Surface scope is possible for both *only* and *just*. However, *just* appears to have the inverse scope (excluded imperative) reading as well. I will leave this as puzzle for future work. In the following section, I discuss some pertinent restrictions on the scope possibilities of *only* and *just*, but a full characterization of the syntactic positions from which the various exclusives can take inverse scope is undoubtedly too involved for the present squib.

(17)   a.   You have to only add water.   □ > EXCL
        b.   You have to just add water.   □ > EXCL, EXCL > □

5   The Low Scope of *only*

In this section suggest an explanation to the second half of the puzzle: Why is *only* unable to scope over OP_{imp}? Briefly, there are some necessity modals which do not allow *only* to scope above them. These modals have been argued to be positive polarity items (Iatridou and Zeijlstra, 2013). If this analysis is headed in the right direction, then perhaps OP_{imp}

is also a positive polarity item. I will also discuss briefly what it means to be a positive polarity item in an alternative-based framework like the present one. This section is inspired by von Fintel and Iatridou's (2007) discussion of a construction closely related to excluded imperatives which they call the Sufficiency Modal Construction (18).

(18)   To get good cheese, you only have to go to the North End.

von Fintel and Iatridou (2007) point out that the modals *ought to*, *should*, and *must* cannot scope below negation, while *need* and *have to* do scope below negation by default (19). Iatridou and Zeijlstra (2013) seize on this and other observations to argue that *ought to*, *should*, and *must* are positive polarity items.

(19)   a.   You don't have/need to do the dishes. $\neg > \Box$
        b.   You ought not to/mustn't/shouldn't do the dishes. $\Box > \neg$

Crucially for the present discussion, von Fintel and Iatridou also notice that the positive polarity modals cannot scope below *only*, while other necessity modals can (20). As I discuss further in section 6, von Fintel and Iatridou (2007) explain this fact by decomposing *only* into two separable components, one of which is negation.

(20)   a.   *To get good cheese, you (only) ought to/must/should (only) go to the North End.
        b.   To get good cheese, you only have/need to go to the North End.

I suggest that, just like *ought to*, *should*, and *must*, OP_{imp} cannot scope under *only* because it is a positive polarity item. For evidence, consider how negation behaves in imperatives: 21 expresses that the addressee has an obligation to not add water, it does not express a lack of obligation. This is just what we expect if OP_{imp} is a positive polarity item.[2]

(21)   Don't add water!

For this explanation to explain the difference between *only* and *just*, it must be the case that *just* is actually able to scope over positive polarity modals (i.e. there should be an excluded imperative-ike). This only partly works out: (22) shows that *should* and *ought to* can indeed scope under *only* as expected, while *must* cannot. Still the proposal is perfectly consistent with there being some additional reason why *just* cannot scope over *must*.

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[2]There are some cases like (i) in which negation appears to scope over OP_{imp} in an imperative. However, these concession uses of imperatives can also be analyzed as giving permission. So instead of negation over necessity, (i) expresses possibility over negation. In Kaufmann's (2011) view, OP_{imp} is not lexically ambiguous between necessity and possibility uses; she argues that the permission uses arise via pragmatic reasoning.

(i)   Fine, don't get out of bed today!

(22) a. You should just add water.   *just* > □
      b. You ought to just add water.   ? *just* > □
      c. You must just add water.   * *just* > □

The analysis of OP$_{imp}$ as a positive polarity item is a promising piece of the puzzle, but ultimately cannot explain the difference between *just* and *only* in excluded imperatives. Iatridou and Zeijlstra (2013) do not commit to a semantic analysis of what goes wrong when these modals are embedded under *only*.[3] Future work should look for a way to tweak the lexical entry of *just* so that, unlike *only*, it is not problematic when combined with positive polarity items.

6 More on Presuppositions

In section 4, the naive approach to exclusive semantics (7) worked well for capturing the at-issue content of excluded imperatives. This section shows that this naive approach fails to deliver the correct presupposition, and considers an alternative proposed by von Fintel and Iatridou (2007) in which the lexical entry for *only* is decomposed into separable components. However, at the end of the section, I cast doubt on whether this is a problem for excluded imperatives at all.

6.1 The Prejacent Problem

Consider the excluded imperative reading in (13): the prejacent of *just*, and thus the predicted presupposition, is □(*add-water*(a)), i.e. the addressee should add water (to reanimate the sea monkeys). This appears to be incorrect. That sentence certainly does convey that adding water is one way to reanimate your sea monkeys, but it does not exclude the possibility that adding other substances instead will work just as well. Otherwise, we would not expect (23) to be coherent.

(23) To reanimate your sea monkeys, just add water. If you prefer, you can add tea or chicken broth instead.

von Fintel and Iatridou (2007) notice that this problem, which they call "The Prejacent

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[3]There is an interesting proposal by Nicolae (2012) that positive polarity like *someone* items evoke alternatives that are strictly weaker than the assertion. Hence they are highly informative in positive contexts, and uninformative (in fact, contradictory on the account) in negative ones. This parallels the account of NPIs developed by Kadmon and Landman (1993); Krifka (1994); Chierchia (2013), which says that NPIs evoke stronger alternatives alternatives, leading to contradictions in positive contexts, and high informativity in negative ones. So the alternatives of a positive polarity modal like *must* or OP$_{imp}$ is the set of weaker modals, which could possibly be obtained by narrowing the modal base (for a necessity modal). For example ALT(*must*$_{f,g}$) = {*must*$_{f',g}$: ∀w[f'(w) ⊆ f(w)]}. On Nicolae's (2012) account, the alternatives must be exhaustified by a silent version of *even*.

Problem", is in issue for the sufficiency modal construction (18).[4] Clearly, this sentence can be felicitously uttered in a context where there are many ways to get good cheese without going to Boston's North End. But as 24 shows, the prediction is that the prejacent is presupposed.

(24)   a. $\llbracket$only$\rrbracket(\Box(\textit{you-go-to-the-North-End}))$
         b.   P: You have to go to the North End.
                A: You don't have to do anything else.

6.2   A Solution

von Fintel and Iatridou (2007) propose solving this problem by decomposing *only* into two separable components: negation and an exceptive. The analysis is inspired by the translation of the sufficiency modal construction into French, Greek, and Irish, all of which involve an exceptive. In unembedded cases like (26), the reformulation of *only* gives the same result as the preliminary version, i.e. to presuppose the prejacent and assert the negation of all the non-entailed alternatives.

(25)   ONLY (version 2)

         a. $\llbracket$only$\rrbracket = \lambda P \lambda x[\ \neg\text{EXCEPT}(P)(x)\ ]$
         b. $\text{EXCEPT} = \lambda P \lambda x[\ \exists\phi_{\in ALT(P(x))}\ [\ P(x) \not\subseteq \phi \wedge \phi\ ]\ ]$
                $\text{EXCEPT}(P)(x)$ is defined iff $\exists\phi_{\in ALT(P(x))}[\ \phi\ ]$

(26) $\llbracket$Betsy only added water$\rrbracket = \neg\exists\phi_{\in ALT(\textit{add-water}(b))}[\ \textit{add-water}(b) \not\subseteq \phi \wedge \phi\ ]$
         $\llbracket$Betsy only added water$\rrbracket$ is defined iff $\exists\phi_{\in ALT(\textit{add-water}(b))}\ [\ \phi\ ]$

Embedded under modals (18) or in excluded imperatives the new lexical entry for *only* gives the desired reading when a necessity modal splits the scope of the two components of *only*, as in (27). This is why von Fintel and Iatridou (2007) find it necessary to decompose *only* as such.[5]

(27) $\llbracket$to get good cannolis, you only have to go to the North End$\rrbracket$ ...
         $= \neg\Box(\text{EXCEPT}(\textit{go-to-the-North-End}(a)))$

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[4]Recall from 5 that an excluded imperative-like reading with *only* is possible with necessity modals like *have to*.

[5] It is not immediately obvious that (27) does entail that going to the North End is sufficient for getting good cannolis. Below I show that from this presupposition and the exceptive assertion, one can infer that it is possible to get good cannolis by going to the North End and doing nothing else. The proof, in prose, says: from the assertion (1,3), you know that there are some worlds where you get good cannolis but you take no action that isn't going to the North End (4). From the presupposition (2,5) you know that in such a world you had to do *something* to get the cannolis (6,7), but the only course of action remaining is going to the North End (8). Therefore, in those worlds, you went to the North End, and that alone was sufficient to get good cheese (9,10).

(i)   let NE = {w: you go to the North End in w},
         let GC = {w: you get good cannolis w}

$$= \neg\square(\ \exists\phi_{\in ALT(\textit{go-to-the-North-End}(a))}[\textit{go-to-the-North-End}(a)\not\subseteq \phi \wedge \phi]\ )$$

... is defined only if $\square(\ \exists\phi_{\in ALT(\textit{go-to-the-North-End}(a))}[\ \phi\ ]\ )$

(where $\square$ has a circumstantial modal base, and an ordering source which at the present world returns the singleton set containing the proposition that you get good cannolis)

6.3   A Wrinkle

Notice that (27) the presupposition must include the modal to give the intended reading. This does not immediately follow from the lexical entry in (25). The presupposition is that there is a true alternative of the prejacent EXCEPT, which in this case is merely the proposition that the addressee goes to the North End. von Fintel and Iatridou hint that the presupposition can pick up the modal under the "Karttunen/Stalnaker/Heim" account of presuppositions.

It is not trivial to flesh out this suggestion. Note that (28) do not presuppose that you must be a dog owner or a smoker to rent the apartment. Suppose that in the spirit of Karttunen (1974), there were a rule like (29). The domain of $\square$ in (27) is the set of worlds in which the addressee gets good cheese, so this rule would predict the correct presupposition. What about (28)? If we assume that the modal base of $\square$ is realistic, and it maps the present world to a set of propositions including the presuppositions, then $\square$(*you-have-a-dog*) is vacuously true. In other words, if we are only considering worlds that resemble the actual one in that you do have a dog, then it is true but boring to presuppose that to rent the apartment, you must have a dog.

(28) a. To rent this apartment, you don't have to give away your dog.
      b. To rent this apartment, you don't have to stop smoking.

(29) Context X satisfies the presuppositions of $\square\phi$ just in case every world in the domain of $\square$ the presuppositions of ϕ are true.

6.4   The prejacent problem in imperatives

Recall that excluded imperatives, like sufficiency modal sentences, suffer from the prejacent problem. In other words, (30) fails to entail that going to the North End is a necessary

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(1)	$\neg\square_{g(w)=GC}(\exists p[p\neq NE \wedge p])$	assertion
(2)	$\square_{g(w)=GC}(\exists p_{\in ALT(NE)}[p])$	presupposition
(3)	$\neg\forall w_{\in GC}\ [\exists p_{\in ALT(NE)}[p\neq NE \wedge w \in p]]$	from (1) by definition of $\square$
(4)	$\exists w_{\in GC}[\neg\exists p_{\in ALT(NE)}[p\neq NE \wedge w \in p]]$	from (3)
(5)	$\forall w_{\in GC}\ [\exists p_{\in ALT(NE)}[w \in p]]$	from (2) by definition of $\square$
(6)	let w_i be s.t. $w_i \in GC \wedge \neg\exists p_{\in ALT(NE)}[p\neq NE \wedge w \in p]$	from (4) by $\exists$
(7)	$\exists p_{\in ALT(NE)}[w_i \in p]$	from (5) and (6)
(8)	$w_i \in NE$	from (6) and (7)
(9)	$\exists w_{\in GC}[\neg\exists p_{\in ALT(NE)}[p\neq NE \wedge w\in p] \wedge w\in NE]$	from (6) and (8)
(10)	$\Diamond_{g(w)=GC}(\neg\exists p_{\in ALT(NE)}[p\neq NE \wedge p] \wedge NE)$	by definition of $\Diamond$

step for getting cannolis (30).

(30)   To get good cannolis, just go to the North End.

Puzzlingly, this does not appear to be just a problem when exclusives are involved. Even 31 does not entail that the addressee must go to the North End to get cannolis. This is due to the fact that this imperative is most naturally understood as a suggestion. To my knowledge, Kaufmann (2011) does not explicitly discuss how imperatives give rise to suggestion speech acts, but in general she derives the variety of illocutionary forces associated with imperatives as a consequence of the flexibility in choosing a modal base and an ordering source for OP_{imp}. Granting that the suggestion can be paraphrased as in 32, the modal base may be constrained by the speaker's beliefs, and the ordering source is the proposition that the addressee get cannolis in an optimal way.

(31)   To get good cannolis, go to the North End.

(32)   In view of what the speaker believes, to get good cannolis in an optimal way, you must go to the North End.

If (30) is also a suggestion, then the prejacent problem for imperatives evaporates even with the naive lexical entry for *only*. The prejacent is simply that going to the North End is necessary for getting cannolis *in an optimal way, according to the speaker*. However it is not problematic to adopt the updated *only*.

7   Conclusion

The interpretation of excluded imperatives, and more generally the interaction of exclusives with imperatives and modals, has proven to be a rich topic at the interface of two complex areas in compositional semantics. The primary contribution of this squib has been to identify not only that different exclusives have surprisingly different behavior in these environments, but also to show that fully accounting for these differences depends on many interesting and still unsolved problems

While the scope analysis presented in section 4 goes a long way to clarifying the nature of the problem, the big question of the squib remains unanswered: what is the difference between *just* and *only*. Coppock and Beaver's (2013) detailed work on the heterogeneous world of exclusives may hold some untapped answers for the future. In a tantalizingly brief section they mention a similar puzzle: in 33, these two exclusives give rise to vastly different interpretations.

(33)   a.   Just the thought of him sends shivers down my spine.
         b.   Only the thought of him sends shivers down my spine.

The sentence with *just* in (33) gets what Coppock and Beaver (2013) call the "minimal sufficiency reading". I doubt it is a coincidence that "sufficiency" is also featured in the

name of von Fintel and Iatridou's (2007) construction. This connection may prove to be important, but, along with the rest, will have to wait for future work.

References

Chierchia, Gennaro. 2013. *Logic in Grammar*. Oxford University Press.

Coppock, Elizabeth and David I Beaver. 2013. Principles of the exclusive muddle. *Journal of Semantics* 31(3):371–432.

Horn, Laurence. 1969. A presuppositional analysis of only and even .

Horn, Laurence R. 2000. Pick a theory, not just any theory. *Negation and Polarity. Syntactic and semantic perspectives* 147–192.

Iatridou, Sabine and Hedde Zeijlstra. 2013. Negation, polarity, and deontic modals. *Linguistic Inquiry* 44(4):529–568.

Kadmon, Nirit and Fred Landman. 1993. Any. *Linguistics and Philosophy* 16(4):353–422.

Karttunen, Lauri. 1974. Presupposition and linguistic context. *Theoretical linguistics* 1(1-3):181–194.

Kaufmann, Magdalena. 2011. *Interpreting imperatives*, vol. 88. Springer Science & Business Media.

Kratzer, Angelika. 1981. The notional category of modality. In H. R. Hans J. Eikmeyer, ed., *Words, Worlds, and Contexts: New Approaches in Word Semantics*. Blackwell Publishers Ltd.

Kratzer, Angelika and Junko Shimoyama. 2002. Indeterminate pronouns: The view from japanese. In *Paper presented at the 3rd Tokyo Conference on Psycholinguistics*.

Krifka, Manfred. 1994. The semantics and pragmatics of weak and strong polarity items in assertions. *Semantics and Linguistic Theory* 4:195.

Nicolae, Andreea. 2012. Positive polarity items: An alternative-based account. In *Sinn und Bedeutung*, vol. 16, 475–488.

Portner, Paul. 2007. Imperatives and modals. *Natural Language Semantics* 15(4):351–383.

von Fintel, Kai and Sabine Iatridou. 2007. Anatomy of a modal construction. *Linguistic Inquiry* 38(3):445–483.