Licensing free choice *any* on an existential semantics for imperatives[1]

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Abstract. This paper seeks to explain why free choice *any* is licensed in strong imperatives and weak imperatives but not under strong modals. It argues that this contrast can be accounted for on the assumption that, instead of a strong (universal) modal, strong imperatives contain a weak (existential) modal that is strengthened by exhaustification (Schwager, 2005; Oikonomou, 2016). On this view, strong and weak imperatives have an identical structure at the point where the licensing of *any* is checked.

Keywords: imperatives, free choice, *any*, strengthening.

1. The puzzle

Free choice is a strengthening effect that is available in modal environments. For example, the meaning of the sentence in (1) predicted from the meaning of disjunction and the meaning of the existential modal is the disjunction of modalized propositions given in (1a), but native speakers routinely infer the stronger conjunctive meaning in (1b). Similar facts hold for free choice *any*, as shown in (2), since existential quantification is equivalent to disjunction over the domain of the quantifier.

(1) You may read book 1 or book 2. $\Diamond(\text{read } b_1 \vee \text{read } b_2)$
  a. You may read book 1 or you may read book 2. $\Diamond(\text{read } b_1) \vee \Diamond(\text{read } b_2)$
  b. You may read book 1 and you may read book 2. $\Diamond(\text{read } b_1) \wedge \Diamond(\text{read } b_2)$

(2) You may read any book. $\Diamond(\exists b \in D_{\{b_1,b_2\}}\text{: you read read b})$
$= \Diamond(\text{read } b_1 \vee \text{read } b_2)$
  a. You may read book 1 or you may read book 2. $\Diamond(\text{read } b_1) \vee \Diamond(\text{read } b_2)$
  b. You may read book 1 and you may read book 2. $\Diamond(\text{read } b_1) \wedge \Diamond(\text{read } b_2)$

Free choice *any* has a restricted distribution; it is licensed under existential modals but not under universal modals or in unembedded environments.

(3) Licensing of *any* in declaratives
  a. You may read any book.
  b. #You must read any book.
  c. #Sam read any book (yesterday).

There is an exception to this generalization, namely the phenomenon known as subtrigging (Dayal, 1998). Subtrigging is a process whereby modification of the *any* phrase renders it acceptable in environments where it would normally be ruled out, as shown in (4).

(4) Subtrigging
  a. You must read any book that won a prize. cf. (3b)
    ⇝ You must read every book that won a prize

[1] I am grateful to Neil Banerjee, Itai Bassi, Luka Crnič, Kai von Fintel, Danny Fox, Ross Godfrey, Sabine Iatridou, Dóra Takács, to audiences at the 2019 meeting of the Canadian Linguistic Association and Sinn und Bedeutung 24, and to anonymous SuB reviewers for their judgements, comments, and suggestions. This research was supported by the Social Sciences and Humanities Research Council of Canada (Doctoral Fellowship 752-2014-2486).

Proceedings of Sinn und Bedeutung 24, vol. 1, pp.193–204. Osnabrück University.

b. Sam read any book that won a prize. cf. (3c)
$\rightsquigarrow$ Sam must read every book that won a prize

Crucially, the felicitous readings yielded by subtrigging are not free choice readings; they have a universal flavour.

Like modals, imperatives vary in force; they have both strong (e.g., command; $\Box$) and weak (e.g., acquiescence, indifference; $\Diamond$) readings, illustrated in (5) and (6)-(7), respectively.

(5) [Parent, to child:] Eat! $\Box_{imp}$

(6) a. Is it alright if I eat?
b. Sure, go ahead! Eat! $\Diamond_{imp}$

(7) a. I can't decide whether to eat or not.
b. Eat! Don't eat! I don't care. $\Diamond_{imp}$

However, unlike modals, free choice *any* is licensed in imperatives regardless of their strength (Giannakidou 2001; Aloni 2007; Kaufmann 2012, *pace* Strickland 1982; Haspelmath 1997). This is illustrated by the felicity of both the weak imperative in (8) and the strong imperative in (9).

(8) a. May I read a book?
b. Sure! Read any book! $\Diamond_{imp}(b_1) \wedge \Diamond_{imp}(b_2)$

(9) a. How do I get into your book club?
b. Read any book! $\Box_{imp}(b_1 \vee b_2) \wedge \Diamond_{imp}(b_1) \wedge \Diamond_{imp}(b_2)$

It should be noted that the acceptability of the strong imperative in (9) is not due to subtrigging; as with modals, subtrigging is available for imperatives but yields a universal reading, as in (10).

(10) Read any book that won a prize! $\Box_{imp}(b_1) \wedge \Box_{imp}(b_2)$
$\rightsquigarrow$ Read every book that won a prize!

In contrast, the strong imperative in (9) conveys a command to read a book (i.e., to read book 1 or book 2) but leaves the choice of which book to read up to the addressee; crucially, (9) does not require the addressee to read every book in the domain (see Giannakidou 2001; Aloni 2007; Kaufmann 2012).

The goal of this paper is to explain the distribution of free choice *any* in modal and imperative environments, summarized in (11).

(11) Distribution of free choice *any*
a. $\Diamond_{mod}$[...any...]
b. #$\Box_{mod}$[...any...]
c. $\Diamond_{imp}$[...any...]
d. $\Box_{imp}$[...any...]

To do this, we will need to find something that strong imperatives have in common with weak imperatives and weak modals, to the exclusion of strong modals. This paper will argue that the distribution in (11) can be explained if we assume that strong imperatives, unlike strong modals, contain the structure of their weak counterparts. The solution that I propose was independently suggested by Luka Crnič in an early draft of what became Crnič (2017), although it does not appear in the published version of that paper. In the end, we will see that existing machinery, when combined correctly, derives the attested distribution of free choice *any*.

The remainder of this paper is structured as follows: Section 2 will describe the assumptions that will be made about free choice, *any*, and imperatives; Section 3 will show how putting these tools together yields the desired result; Section 4 considers implications of the proposal for our theory of imperatives, and Section 5 concludes.

2. Toolkit

2.1. Assumptions about free choice

I will assume that free choice effects are derived by exhaustification over subdomain alternatives (Fox, 2007). I will assume the implementation of this idea proposed by Bar-Lev and Fox (2017), where strengthening is performed by a covert operator, *exh*, with the meaning in (12).[2]

(12) $[\![\text{exh}]\!]^{g,w} = \lambda C_{\langle st,t\rangle}.\ \lambda p_{\langle s,t\rangle}.\ \forall q \in \text{II}(p, C)\ [q(w)]\ \&\ \forall r \in \text{IE}(p, C)\ [\neg r(w)]$
where IE(p,C) is the set of innocently excludable alternatives for p in C
and II(p,C) is the set of innocently includable alternatives for p in C

According to this denotation, *exh* takes as two arguments: its prejacent (*p*) and a set of alternatives (*C*), which is here stipulated to contain the propositions formed by replacing the domain of the weak scalar element in p (i.e., disjunction or existential quantifier) by subsets of the original. The innocently excludable alternatives for p in C (*IE(p, C)*) are defined as the largest non-arbitrary set of alternatives that can be jointly negated without contradicting the prejacent, while the innocently includable alternatives for p in C (*II(p, C)*) are the largest non-arbitrary set of alternatives that can be jointly negated without contraditing the conjunction of the prejacent with the negation of the innocently excludable alternatives. *Exh*'s contribution is to negate all of the innocently excludable alternatives and assert all of the innocently includable alternatives.

When applied to a sentence like *You may read any book*, Bar-Lev and Fox's (2017) system derives the free choice reading by having this *exh* i) associate with the existential quantifier and its domain as in (13a) and ii) consult the set of alternatives in (13b), for a toy world containing only two books.[3]

(13) You may read any book. $\Diamond_{\text{mod}}$
a. LF = $[\text{exh}_{C_1}\ [\Diamond\ [\text{you read a}_{\{b_1,b_2\}_{F_1}}\ \text{book}]]]$
b. $C_1 = \left\{\begin{array}{ll} \Diamond\ [\text{you read a}_{\{b_1,b_2\}}\ \text{book}], & \text{II} \\ \Diamond\ [\text{you read a}_{\{b_1\}}\ \text{book}], & \text{II} \\ \Diamond\ [\text{you read a}_{\{b_2\}}\ \text{book}], & \text{II} \\ (\Diamond\ [\text{you read every}_{\{b_1,b_2\}}\ \text{book}]) & \text{IE} \end{array}\right\}$

[2]This denotation differs from the one provided by Fox (2007) in that, in addition to negating the innocently excludable alternatives, *exh* asserts the innocently includable alternatives. A single application of Bar-Lev and Fox's (2017) innocent inclusion *exh* has the same effect as two applications of Fox's (2007) innocent exclusion *exh*.

[3]The bracketed alternative in (13b) is sometimes called a scalar alternative to distinguish it from the subdomain alternatives (see Chierchia 2013). This alternative may be pruned; if it is not, a prohibition on reading both books will be generated.

In this case, only the strongest alternative, shown in brackets in (13), is innocently excludable; the others are innocently includable. This means that *exh* will negate the former and assert the latter, as in (14).

(14) $exh(C_1)(\Diamond \text{ you read } a_{\{b_1,b_2\}} \text{ book}) = 1 \text{ iff } \Diamond \text{ you read } a_{\{b_1,b_2\}} \text{ book}$
$\wedge \Diamond \text{ you read } a_{\{b_1\}} \text{ book}$
$\wedge \Diamond \text{ you read } a_{\{b_2\}} \text{ book}$
$(\wedge \neg\Diamond \text{ you read every}_{\{b_1,b_2\}} \text{ book})$

The resulting conjunction of the innocently includable alternatives yields the free choice inference that both the reading of book 1 and the reading of book 2 are permitted.

2.2. Assumptions about *any*

The distribution of *any* is restricted in a way that is independent of its free choice status: sentences with *any* must make a stronger contribution than sentences with a plain indefinite such as *a* (Kadmon and Landman, 1993; Lahiri, 1998). Following Chierchia (2013), Crnič (2017), and others, I will derive this restriction by embedding the basic free choice structure under a covert *even*-like operator; like *exh*, this operator will associate with *any* and act on its subdomain alternatives. I will assume that this covert operator (represented as EVEN to distinguish it from its overt counterpart) is like English *even* in having a scalar presupposition requires that its prejacent less likely, more noteworthy, or otherwise stronger than its its alternatives;[4] this will ensure that free choice *any* is only licensed when its free choice inference strengthens the meaning of the sentence that contains it. I will remain agnostic about whether EVEN also carries an additive presupposition, as *even* does.

To see how this correctly derives the distribution of free choice *any*, let us work through three examples.[5] Firstly, let us confirm that this machinery derives the acceptability of a weak modal statement like *You may read any book.* Assuming the structure in (15a), the prejacent of EVEN is identical to the free choice structure in (13a); the free choice effect is derived as in (14) using the alternatives in (15b). The alternatives that EVEN operates on are those in (15c).

(15) You may read any book. $\Diamond_{mod}$

a. $\text{LF} = \text{EVEN}_{C_2} [\text{exh}_{C_1} [\Diamond [\text{you read } a_{\{b_1,b_2\}F_1,F_2} \text{ book}]]]$

b. $C_1 = \left\{\begin{array}{l} \Diamond [\text{you read } a_{\{b_1,b_2\}} \text{ book}], \\ \Diamond [\text{you read } a_{\{b_1\}} \text{ book}], \\ \Diamond [\text{you read } a_{\{b_2\}} \text{ book}], \\ (\Diamond [\text{you read every}_{\{b_1,b_2\}} \text{ book}]) \end{array}\right\}$ II, II, II, IE

c. $C_2 = \left\{\begin{array}{l} \text{exh}_{C_1} [\Diamond [\text{you read } a_{\{b_1,b_2\}F_1} \text{ book}]], \\ \text{exh}_{C_1} [\Diamond [\text{you read } a_{\{b_1\}F_1} \text{ book}]], \\ \text{exh}_{C_1} [\Diamond [\text{you read } a_{\{b_2\}F_1} \text{ book}]] \end{array}\right\}$

Let us assume that i) within each of the alternatives in (15c) the value of C_1 is calculated independently, and ii) the substitutions that EVEN makes in building its alternative set are the same as those used by *exh* (i.e., subdomains of the existential quantifier). We have already

[4] It may be necessary to restrict the flavour of *even*'s scale to entailment; see discussion in Crnič 2017.

[5] The presentation here closely follows that in Crnič (2017).

seen that the interpretation of the first alternative in (15c) (i.e., the prejacent of EVEN) is the conjunction of the first three alternatives in (15b). Since the domain of the existential quantifier in the prejacent of *exh* in the second and third alternatives in (15c) is a singleton set containing just one book, there are no subdomain alternatives for *exh* to consider. All it can do in each of these cases, then, is assert its prejacent, which is by definition innocently includable. The alternatives in (15c) are thus equivalent to (16).[6]

(16) $C_2 = \left\{ \begin{array}{l} \Diamond \text{ [you read } a_{\{b_1,b_2\}} \text{ book]} \wedge \Diamond \text{ [you read } a_{\{b_1\}} \text{ book]} \wedge \Diamond \text{ [you read } a_{\{b_2\}} \text{ book],} \\ \Diamond \text{ [you read } a_{\{b_1\}} \text{ book],} \\ \Diamond \text{ [you read } a_{\{b_2\}} \text{ book]} \end{array} \right\}$

The prejacent of EVEN, which is equivalent to the first alternative in (16), entails both of the other alternatives. Thus, the scalar presupposition of EVEN is satisfied, and *any* is correctly predicted to be licensed.

Next, let us consider the unacceptability of *#You must read any book*, where *any* is embedded under a strong modal. This sentence will have the structure in (17a).

(17) #You must read any book. $\Box_{mod}$

a. LF = EVEN_{C_2} [exh_{C_1} [$\Box$ [you read $a_{\{b_1,b_2\}F_1,F_2}$ book]]]

b. $C_1 = \left\{ \begin{array}{ll} \Box \text{ [you read } a_{\{b_1,b_2\}} \text{ book],} & \text{II} \\ \Box \text{ [you read } a_{\{b_1\}} \text{ book],} & \text{IE} \\ \Box \text{ [you read } a_{\{b_2\}} \text{ book],} & \text{IE} \\ (\Box \text{ [you read every}_{\{b_1,b_2\}} \text{ book])} & \text{IE} \end{array} \right\}$

c. $C_2 = \left\{ \begin{array}{l} \text{exh}_{C_1} \text{ [}\Box \text{ [you read } a_{\{b_1,b_2\}F_1} \text{ book]],} \\ \text{exh}_{C_1} \text{ [}\Box \text{ [you read } a_{\{b_1\}F_1} \text{ book]],} \\ \text{exh}_{C_1} \text{ [}\Box \text{ [you read } a_{\{b_2\}F_1} \text{ book]]} \end{array} \right\}$

It is perfectly consistent for one to be required to read a book without being required to read any particular book; this is, after all, what it means to have free choice. All of the non-prejacent alternatives in (17b) are therefore innocently excludable and hence negated by *exh* as in (18).

(18) $exh(C_1)(\Box \text{ you read } a_{\{b_1,b_2\}} \text{ book}) = 1 \text{ iff } \Box \text{ you read } a_{\{b_1,b_2\}} \text{ book}$
$\wedge \neg\Box \text{ you read } a_{\{b_1\}} \text{ book}$
$\wedge \neg\Box \text{ you read } a_{\{b_2\}} \text{ book}$
$(\wedge \neg\Box \text{ you read every}_{\{b_1,b_2\}} \text{ book})$

The alternatives that EVEN applies to in (17c) will thus have the meanings in (19).

(19) $C_2 = \left\{ \begin{array}{l} \Box \text{ [you read } a_{\{b_1,b_2\}} \text{ book]} \wedge \neg\Box \text{ [you read } a_{\{b_1\}} \text{ book]} \wedge \neg\Box \text{ [you read } a_{\{b_2\}} \\ \quad \text{book],} \\ \Box \text{ [you read } a_{\{b_1\}} \text{ book],} \\ \Box \text{ [you read } a_{\{b_2\}} \text{ book]} \end{array} \right\}$

The prejacent of EVEN, corresponding to the first alternative in (19), is not in an entailment relation with the other alternatives. The scalar presupposition is therefore not guaranteed to

[6] I omit the contribution of the scalar alternative in the prejacent for the sake of space.

be satisfied, and would in fact require a peculiar context to be satisfied.[7] Furthermore, if this covert EVEN is like the overt *even* in having an additive presupposition, this presupposition will not be satisfiable, because the prejacent entails the negation of both non-prejacent alternatives. We therefore predict *#You must read any book* to be infelicitous, as desired.

Finally, let us see how this approach derives the unacceptability of unembedded free choice *any*, as in *#Sam read any book (yesterday).*

(20) #Sam read any book (yesterday).

a. $\text{LF} = \text{EVEN}_{C_2}$ [exh_{C_1} [Sam read $\text{a}_{\{b_1,b_2\}F_1,F_2}$ book]]

b. $$C_1 = \left\{\begin{array}{l}\text{[Sam read a}_{\{b_1,b_2\}}\text{ book],} \\ \text{[Sam read a}_{\{b_1\}}\text{ book],} \\ \text{[Sam read a}_{\{b_2\}}\text{ book],} \\ \text{([Sam read every}_{\{b_1,b_2\}}\text{ book])}\end{array}\right\} \begin{array}{r}\text{II} \\ \\ \\ \text{IE}\end{array}$$

c. $$C_2 = \left\{\begin{array}{l}\text{exh}_{C_1}\text{ [Sam read a}_{\{b_1,b_2\}F_1}\text{ book],} \\ \text{exh}_{C_1}\text{ [Sam read a}_{\{b_1\}F_1}\text{ book],} \\ \text{exh}_{C_1}\text{ [Sam read a}_{\{b_2\}F_1}\text{ book]}\end{array}\right\}$$

Here, in the absence of a modal, the alternatives for *exh* are simply quantificational statements ranging over different domains of books. The prejacent will be innocently includable and the conjunctive alternative will be innocently excludable, as before, but now the alternatives where the quantifier ranges over singleton books are neither includable nor excludable. They will therefore be neither negated nor asserted by *exh*, as shown in (21).

(21) *exh*(C_1)(Sam read $\text{a}_{\{b_1,b_2\}}$ book) = 1 iff you read $\text{a}_{\{b_1,b_2\}}$ book
($\wedge$ $\neg$ Sam read $\text{every}_{\{b_1,b_2\}}$ book)

The alternatives that EVEN considers will have meanings equivalent to the following:

(22) $$C_2 = \left\{\begin{array}{l}\text{Sam read a}_{\{b_1,b_2\}}\text{ book } (\wedge \neg \text{ Sam read every}_{\{b_1,b_2\}}\text{ book}), \\ \text{Sam read a}_{\{b_1\}}\text{ book,} \\ \text{Sam read a}_{\{b_1\}}\text{ book}\end{array}\right\}$$

Here, the prejacent (which corresponds to the first alternative in (22)), is entailed by the other alternatives. Thus, the scalar presupposition of EVEN is not satisfied, and so we correctly predict this sentence to be unacceptable.

2.3. Assumptions about imperatives

I will assume that imperatives contain a covert modal operator in their left periphery (Schwager 2006/Kaufmann 2012, i.a.). On this view, an imperative like *Read!* means something very similar to *You must read*;[8] presuppositions ensure that the imperative modal can only be read performatively, and not as a simple description of the addressee's obligations.

[7]The relevant context would be one where it is less likely that the addressee is required to read some book and given free choice as to which one than that the addressee is required to read book 1, and likewise it is less likely that the addressee is required to read some book and given free chocie as to which one than that the addressee is required to read book 2. If EVEN's scalar presupposition was restricted to an entailment-based scale, this presupposition would simply be unsatisfied here.

[8]The imperative operator is a root modal related to obligations, preferences, desires, or goals.

I will assume that the force of this modal operator is underlyingly weak ($\Diamond$), with strong readings derived by exhaustification (Schwager, 2005; Oikonomou, 2016). There are several ways of cashing out this idea formally; here, I will assume that strengthening is achieved by exhaustifying over subdomains of the imperative modal, much like the free choice strengthening discussed above. This approach mirrors that of Bassi and Bar-Lev (2016) in their account of bare conditionals as underlyingly existential modals.

For a toy context containing just two accessible worlds, w1 and w2, the strong reading the imperative *Read!* will be derived by assuming the structure in (23a) and the alternatives in (23b).

(23) Read! $\Box_{\text{imp}}$

a. LF: exh_{C1} [$\Diamond_{\{w_1,w_2\}}$ [you read]]

b. $C_1 = \left\{ \begin{array}{l} [\Diamond_{\{w_1,w_2\}} \text{ [you read]]}, \\ [\Diamond_{\{w_1\}} \text{ [you read]]}, \\ [\Diamond_{\{w_2\}} \text{ [you read]]} \end{array} \right\}$ II / II / II

The non-prejacent alternatives in (23b) are weak modal statements quantifying over singleton sets of worlds. Asserting that there is a world in a set containing just one world where you read is equivalent to asserting that you read in that world. This makes each of the non-prejacent alternatives stronger than the prejacent, but neither of them can be negated without entailing the other – that is, neither of them is innocently excludable. All of the alternatives in (23b) are innocently includable, and so the interpretation of (23) will be as in (24). Crucially, thanks to the latter two alternatives, this conjunction entails that each of the worlds in the modal's domain is a world in which you read. This is equivalent to universal quantification over the accessible worlds: a $\Box$ meaning.

(24) $exh(C_1)(\Diamond_{\{w_1,w_2\}} \text{ you read}) = 1 \text{ iff } \Diamond_{\{w_1,w_2\}} \text{ you read}$
$\qquad \wedge \Diamond_{\{w_1\}} \text{ you read}$
$\qquad \wedge \Diamond_{\{w_2\}} \text{ you read}$
$\qquad = 1 \text{ iff } \Box_{\{w_1,w_2\}} \text{ you read}$

It is important to note that the procedure just described can only strengthen an existential modal if it lacks a universal dual (Oikonomou, 2016; Bassi and Bar-Lev, 2016). If C_1 contained $\Box_{\{w_1,w_2\}}$ *you read* – the counterpart of the bracketed alternative in (15b) – the alternative in question would be innocently excludable. Because the conjunction of $\Diamond_{\{w_1\}}$ *you read* and $\Diamond_{\{w_2\}}$ *you read* is inconsistent with the negation of $\Box_{\{w_1,w_2\}}$ *you read*, the former alternatives would no longer be innocently includable. The result of applying *exh* to this four-membered set of alternatives would be therefore be the conjunction of the prejacent with the negation of the universal alternative (i.e., the conjunction [$\Diamond_{\{w_1,w_2\}}$ *you read* $\wedge \neg\Box_{\{w_1,w_2\}}$ *you read*]).

3. Proposal

To capture the distribution of *any*, all that is needed is to combine the tools outlined in the previous section. Assuming that the imperative operator is underlyingly an existential modal, with strong readings derived by the application of *exh*, allows us to replace the distribution of free choice *any* from (11) with (25).

(25) Distribution of free choice *any* (revised)

a. $\Diamond_{mod}$[...any...]
b. #$\Box_{mod}$[...any...]
c. $\Diamond_{imp}$[...any...]
d. exh $\Diamond_{imp}$[...any...]

It is now clear what the relevant difference between strong modal statements and strong imperatives is: only the former contains a universal modal operator. In contrast, weak modals, weak imperatives, and strong imperatives all contain an existential modal operator.[9]

We have already seen how existing tools derive the acceptability of free choice *any* in weak modal statements. The acceptability of free choice *any* in weak imperatives follows in exactly the same way; the LF and alternative sets in (26) are identical to those in (15).

(26) Read any book! $\Diamond_{imp}$

a. LF = EVEN_{C_2} [exh_{C_1} [$\Diamond$ [you read $\text{a}_{\{b_1,b_2\}F_1,F_2}$ book]]]

b. $$C_1 = \left\{\begin{array}{l} \Diamond\ [\text{you read } \text{a}_{\{b_1,b_2\}} \text{ book}], \\ \Diamond\ [\text{you read } \text{a}_{\{b_1\}} \text{ book}], \\ \Diamond\ [\text{you read } \text{a}_{\{b_2\}} \text{ book}], \\ (\Diamond\ [\text{you read } \text{every}_{\{b_1,b_2\}} \text{ book}]) \end{array}\right\} \quad \begin{array}{l} \text{II} \\ \text{II} \\ \text{II} \\ \text{IE} \end{array}$$

c. $$C_2 = \left\{\begin{array}{l} \text{exh}_{C_1}\ [\Diamond\ [\text{you read } \text{a}_{\{b_1,b_2\}F_1} \text{ book}]], \\ \text{exh}_{C_1}\ [\Diamond\ [\text{you read } \text{a}_{\{b_1\}F_1} \text{ book}]], \\ \text{exh}_{C_1}\ [\Diamond\ [\text{you read } \text{a}_{\{b_2\}F_1} \text{ book}]] \end{array}\right\}$$

Just like a weak modal statement, this imperative states that the addressee is permitted to read book 1 and permitted to read book 2, as shown in (27) (cf. (15)).

(27) $$exh(C_1)(\Diamond \text{ you read } \text{a}_{\{b_1,b_2\}} \text{ book}) = 1 \text{ iff } \begin{array}{l} \Diamond \text{ you read } \text{a}_{\{b_1,b_2\}} \text{ book} \\ \wedge\ \Diamond \text{ you read } \text{a}_{\{b_1\}} \text{ book} \\ \wedge\ \Diamond \text{ you read } \text{a}_{\{b_2\}} \text{ book} \\ (\wedge\ \neg\Diamond \text{ you read } \text{every}_{\{b_1,b_2\}} \text{ book}) \end{array}$$

To capture the acceptability of free choice *any* in strong imperatives, all that is needed is to assume that the *exh* that strengthens the imperative operator is located above the *exh* that derives free choice and the covert EVEN that checks *any*'s licensing condition. This will ensure that strong imperatives with *any* contain the structure of their weak counterparts; this is shown in (28a), where the underlined portion of the structure is identical to the structure in (26a).

(28) Read any book! $\Box_{imp}$

a. LF: exh_{C_3} [$\underline{\text{EVEN}_{C_2} [\text{exh}_{C_1} [\Diamond_{\{w_1,w_2\}F_3} [\text{you read a}_{\{b_1,b_2\}F_1,F_2} \text{ book}]]]]}$

b. $$C_1 = \left\{\begin{array}{l} \Diamond\ [\text{you read } \text{a}_{\{b_1,b_2\}} \text{ book}], \\ \Diamond\ [\text{you read } \text{a}_{\{b_1\}} \text{ book}], \\ \Diamond\ [\text{you read } \text{a}_{\{b_2\}} \text{ book}], \\ (\Diamond\ [\text{you read } \text{every}_{\{b_1,b_2\}} \text{ book}]) \end{array}\right\} \quad \begin{array}{l} \text{II} \\ \text{II} \\ \text{II} \\ \text{IE} \end{array}$$

c. $$C_2 = \left\{\begin{array}{l} \text{exh}_{C_1}\ [\Diamond\ [\text{you read } \text{a}_{\{b1,b2\}F_1} \text{ book}]], \\ \text{exh}_{C_1}\ [\Diamond\ [\text{you read } \text{a}_{\{b1\}F_1} \text{ book}]], \\ \text{exh}_{C_1}\ [\Diamond\ [\text{you read } \text{a}_{\{b2\}F_1} \text{ book}]] \end{array}\right\}$$

[9] As noted in Section 1, the analysis presented here was independently proposed by Luka Crnič.

d. $C_3 = \left\{ \begin{array}{l} \text{EVEN}_{C_2} \text{ [exh}_{C_1} \text{ [}\Diamond_{\{w_1,w_2\}} \text{ [you read a}_{\{b_1,b_2\}F_1,F_2} \text{ book]]],} \\ \text{EVEN}_{C_2} \text{ [exh}_{C_1} \text{ [}\Diamond_{\{w_1\}} \text{ [you read a}_{\{b_1,b_2\}F_1,F_2} \text{ book]]],} \\ \text{EVEN}_{C_2} \text{ [exh}_{C_1} \text{ [}\Diamond_{\{w_2\}} \text{ [you read a}_{\{b_1,b_2\}F_1,F_2} \text{ book]]]} \end{array} \right\}$ II II II

Because this strong imperative contains the very structure that licenses free choice *any*, we should not be surprised that *any* is licensed here as well. At the point where *any*'s licensing conditions are checked, there is no difference between a weak imperative and a strong imperative; EVEN evaluates the same alternatives in (28c) as it does in (26c). What makes strong imperatives different from weak imperatives is the application of the second *exh*. This *exh* considers the set of alternatives in (28d), where the first alterantive is simply the weak imperative discussed in (27). None of the alternatives in this set are innocently excludable; they are all innocently includable,[10] and so they will all be asserted, in parallel to (27) and (15). The result is (29).[11]

(29) $exh(C_3)(\text{EVEN}_{C_2} \text{ exh}_{C_1} \Diamond_{\{w_1,w_2\}} \text{ you read a}_{\{b_1,b_2\}F_1,F_2} \text{ book}) = 1$ iff
$\text{exh}_{C_1} \Diamond_{\{w_1,w_2\}} \text{ you read a}_{\{b_1,b_2\}} \text{ book}$
$\wedge\ \text{exh}_{C_1} \Diamond_{\{w_1\}} \text{ you read a}_{\{b_1,b_2\}} \text{ book}$
$\wedge\ \text{exh}_{C_1} \Diamond_{\{w_2\}} \text{ you read a}_{\{b_1,b_2\}} \text{ book}$

When the contribution of *exh* to each conjunct is calculated, (29) is equivalent to (30).

(30) $exh(C_3)(\text{EVEN}_{C_2} \text{ exh}_{C_1} \Diamond_{\{w_1,w_2\}} \text{ you read a}_{\{b_1,b_2\}F_1,F_2} \text{ book}) = 1$ iff
$\Diamond_{\{w_1,w_2\}} \text{ you read a}_{\{b_1,b_2\}} \text{ book} \wedge \Diamond_{\{w_1,w_2\}} \text{ you read a}_{\{b_1\}} \text{ book} \wedge \Diamond_{\{w_1,w_2\}} \text{ you read a}_{\{b_2\}} \text{ book}$
$\wedge\ \Diamond_{\{w_1\}} \text{ you read a}_{\{b_1,b_2\}} \text{ book}$
$\wedge\ \Diamond_{\{w_2\}} \text{ you read a}_{\{b_1,b_2\}} \text{ book}$

The first conjunct in (30) is identical to the meaning of the weak imperative in (27); it states that the addressee is permitted to read book 1 and permitted to read book 2. The last two conjuncts together entail that the addressee is required to read a book from the set $\{b_1, b_2\}$ (i.e., the addressee reads a book in each world in every world in the modal's domain). This matches with the intuitions about this imperative reported above; it conveys a command to read some book, while at the same time leaving the choice of which book to read up to the addressee.

To summarize, the proposal is that strong imperatives differ from strong modal statements in that the former, but not the latter, contain an existential modal operator (strengthened by *exh*).

[10] EVEN is assumed to be truth-conditionally vacuous, so for the purposes of checking the innocent includability/excludability of these alternatives it is permissible to ignore EVEN and consider only its prejacent. However, it is worth noting that the non-prejacent alternatives in (28d) appear to be undefined. Since saying that there is some world in the singleton set $\{w_n\}$ where you read a book is equivalent to the unmodalized statement that you read a book in w_n, and since we have already seen that EVEN's scalar presupposition is not satisfied in non-modalized configurations like (20), we might expect that within each of these alternatives the scalar presupposition of EVEN is unsatisfied. I am not certain whether we should predict that applying *exh* to a set of alternatives containing members that are undefined will cause any problems. It could be that *exh* simply ignores the presuppositions of the alternatives that it consults (or at least those of the alternatives that it does not negate). For a detailed discussion of the plug/hole/filter status of *exh* with respect to presuppositions triggered in its alternatives, I refer the interested reader to Spector and Sudo (2017).

[11] I have omitted EVEN from each conjunct in the statement of the truth conditions in the interest of space. See the preceding footnote for discussion of the presuppositions of EVEN within the alternatives considered by the higher *exh*.

At the point where the licensing of *any* is checked, strong imperatives have the same structure as weak imperatives and weak modal statements.

4. Discussion

The analysis presented above capitalized on a key feature of the existential modal account of imperatives, namely that the structure of a strong imperative properly contains the structure of a weak imperative. Before concluding the paper, it is worth considering whether the distribution of free choice *any* should be viewed as an argument in favour of this particular theory of imperatives.

Grosz (2011) proposes a version of the modal approach to imperatives where there are not one but two silent imperative modals: $\Box_{imp}$ and $\Diamond_{imp}$. On this view, the difference between strong and weak readings of imperatives lies in which of these operators is used. It is not obvious how such a theory would explain why $\Box_{imp}$ differs from $\Box_{mod}$ with respect to the licensing of free choice *any*; the ambiguity version of the modal approach predicts that free choice *any* would be licensed in weak imperatives and under weak modals but not in strong imperatives or under strong modals.

The main competitor to the modal approach is the minimal approach to imperatives, which holds that imperatives do not contain a modal operator at all and instead denote bare addressee-oriented properties (Hausser, 1980; Portner, 2007). On this view, the directive force of imperatives arises pragmatically; instead of updating the Common Ground, imperatives update the To-Do List, a set of properties that the conversational participants are committed to making true of themselves (Portner, 2007). The distinction between strong and weak imperatives is likewise derived pragmatically – for example, as a result of conflicting requirements on the To-Do List, or by dividing the To-Do List into different sections (Portner, 2007; von Fintel and Iatridou, 2017). Because free choice *any* is not generally licensed in unembedded environments in the absence of subtrigging, this approach incorrectly predicts that *any* would never be licensed in imperatives at all.

Neither a minimal approach nor an ambiguity version of the modal approach can straightforwardly capture the data discussed here. This paper can therefore be seen as an argument in favour of theories that posit a covert existential modal in the left periphery of all imperatives.

5. Conclusion

This paper has argued that the distribution of free choice *any* in imperatives falls out for free on the assumptions that i) all imperatives contain an existential modal, with strong readings derived by exhaustification, and ii) the strengthening of the imperative operator happens further up the tree than the structure that licenses free choice *any*.

On the view adopted here, imperatives join a growing landscape of operators whose observed strong (universal) force can be derived by strengthening an underlyingly weak (existential) meaning. Other apparently universal quantifiers that have recently been reanalyzed as strengthened existential quantifiers include the Hebrew determiner *kol* (Bar-Lev and Margulis, 2014), the modal of bare conditionals (Bassi and Bar-Lev, 2016), and English *want* (Staniszewski, 2019).[12] It is worth investigating how free choice *any* behaves in these environments. The pro-

[12]These operators differ from imperatives in that for them exhaustification is obligatory (cf. Chierchia 2013)

posal presented here should carry over to these underlyingly existential operators, and so we should predict that free choice *any* will be licensed in the scope of *want* and in the consequent of bare conditionals. As demonstrated in (31), however, this prediction does not appear to be borne out.

(31) a. #Sam wants to read any book.
b. #If the library was open, Sam read any book yesterday.

I do not know why *any* is not licensed in these environments, but this suggests that there are more puzzles to be worked out in this corner of the grammar. I leave the task of investigating them to future work.

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whenever it is possible. It remains to be seen whether there are other operators that are like imperatives in allowing optional strengthening.

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