How to Say *Ought* in Foreign: The Composition of Weak Necessity Modals

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Abstract In this article[1], we draw attention to the fact that what English expresses by the use of the weak necessity modal *ought*, many other languages express by

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combining a strong necessity modal with the morphology that appears in the consequent of a counterfactual conditional. On the hypothesis that there should be a compositional form-to-meaning mapping, we explore the semantics of weak necessity modals and propose how to derive this semantics from the combination of a strong necessity modal and counterfactual marking. Specifically, building on the semantics for weak necessity modals proposed by Sloman, we propose that weak necessity modals are the result of the promotion of a secondary ordering source of a strong necessity modal. This meta-linguistic operation is signaled or effected by counterfactual marking. The fact that it is a strong necessity modal that is counterfactually marked crosslinguistically, shows that even with weak necessity modals the quantificational force is universal.

Key words: Modals, epistemic, deontic, goal-oriented, counterfactuals, wishes, ordering source

> Of all the differences between man and the lower animals, the moral sense or conscience is by far the most important. . . . [I]t is summed up in that short, but imperious word *ought*, so full of high significance.
>
> Charles Darwin, *Descent of Man*

1 A Basic Contrast

Consider the following sign, posted at a summer camp on Cape Cod:

(1) After using the bathroom, everybody ought to wash their hands; employees have to.

From (1), we see that there is a distinction to be made between *ought* on the one hand and *have to* on the other. How can *ought* and *have to* contrast like this? What distinguishes them? Or for that matter, what distinguishes *ought* from *must*, which patterns like *have to*, as (2) shows?

(2) Everybody ought to wash their hands; employees must.

Mean" (Copley, 2006), which was written independently of our work on *ought*. We have already learned a lot from her paper and we plan to address some of her observations and proposals in a future version of this paper. We are also grateful to all of our informants, who are individually acknowledged in the text. Thanks to Noam Chomsky for suggesting the epigraph and thanks to Larry Horn for drawing our attention to the *New Yorker* cartoon*. Any comments are welcome. Mistakes are each other's.

*Cartoon from the *New Yorker* of July 31, 2006, printed with permission of the *New Yorker*.

An intuition that many researchers have tried to capture is that *ought* (as well as its near equivalent *should*, about which we remain officially agnostic for the purposes of this paper[2]) is somehow weaker than *have to/must*. Some evidence for this relative weakness comes from the fact that (3) is not a contradiction while the examples in (4) are[3]:

(3) You ought to do the dishes but you don't have to.[4]

(4) a. #You have to do the dishes but you don't have to.
b. #You must do the dishes but you don't have to.

A second piece of evidence for the relative weakness of *ought* comes from sequences like these:[5]

(5) a. You ought to wash your hands—in fact, you have to.
b. ??You have to wash your hands—in fact, you ought to.

Because of the apparent difference in weakness between *must/have to* and *ought, ought* is often referred to as a "weak necessity modal" (as opposed to "strong" necessity modals like *must* or *have to*).

This paper is an investigation into *ought* and the cross-linguistic expressions of this modal concept. Before we turn to the cross-linguistic facts, we will review some possible semantic analyses of weak necessity modals.

2 Weakness

As is customary in most linguistic work on modality, we adopt the basic framework proposed by Kratzer (1981, 1991). Modals quantify over a set of worlds that is calculated from a modal base of accessible worlds and an ordering source which ranks the worlds in the modal base. Different flavors of modality (epistemic, goal-oriented, deontic, etc.) come from the interplay and contextual resolution of modal base and ordering source. Let us call the worlds in the modal base that are most highly ranked by the ordering source the *favored worlds*. Let us also introduce the term *prejacent*, first used by our medieval colleagues, to designate the proposition embedded under the modal.

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[2] *Should* shows considerable similarities to *ought* but also some differences:

(i) It's strange that he should/*ought to do that.

[3] We are of course not the first ones to observe data like these. See for example, Wertheimer (1972: Chapter 3, "The Meaning of the Modals"), Jones and Pörn (1986), McNamara (1996, 2006).

[4] The use of *have to* instead of *must* is required in this context because only *have to* scopes under negation.

[5] We take this kind of example from Copley (2006).

How can the difference between strong and weak necessity modals be captured in this framework? One straightforward idea, inspired by Horn,[6] is that while strong necessity modals require the prejacent to be true in *all* of the favored worlds, weak necessity modals say that the prejacent is true in *most* of the favored worlds. We will not pursue this idea, for a couple of reasons.[7] First, we have some qualms about being able to "count" possible worlds in such a way as to make sense of saying that *most* of the worlds in a particular set have a certain property. More importantly, we don't think that the "most" analysis truly captures the meaning of weak necessity modals. We think that a sentence like *You ought to do the dishes* means not that among the favored worlds, most are worlds where you do the dishes. Rather, it means that among the favored worlds, all the very best ones are worlds where you do the dishes. That is, the *ought*-claim makes a further distinction as to how good particular worlds among the favored world are.

So, the central idea we would want to capture in a semantics for *ought* is this: *ought p* says that among the favored worlds, *p*-worlds are better than *non-p*-worlds.[8] That is the intuition we pursued in our paper on anankastic conditionals (von Fintel and Iatridou, 2005) for goal-oriented uses of strong and weak necessity modals. There, we were inspired by an early proposal by Sloman (1970), who wrote:

> For instance *If you want to get to London by noon, then you ought to go by train* picks out the best means without excluding the possibility of others, whereas *If you want to get to London by noon then you have to (must, will be obliged to etc.) go by train* implies that no other means exists. [p. 390f.]

In other words, Sloman proposes that *ought* says what is best, or better than all alternatives. On the other hand, *must* picks out the only candidate. For example, (6) says that in all the worlds in which your goal of going to Ashfield is achieved, you have used Route 2:

(6) To go to Ashfield you have to/must use Route 2.

This means that there is no other way of satisfying your goal of going to Ashfield.

On the other hand, when we use *ought*, what is conveyed is that there are several ways of going to Ashfield but that by some measure, Route 2 is the best:

(7) To go to Ashfield, you ought to use Route 2.

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[6] Copley (2006) attributes the idea to Horn. In Horn's dissertation (Horn, 1972), weak necessity modals are characterized as occupying the same location on the scale of modal strength as *most* does on the scale of quantifiers.

[7] See Copley for another argument against the "most" analysis.

[8] We should note that Kratzer (1991) distinguishes between necessity and weak necessity as well. Her informal characterization is similar to ours: *p* is a weak necessity iff *p* is a better possibility than *not p*. The technical implementation is different from ours and crucially involves not accepting that there is always a set of most favored worlds (what is known as the *Limit Assumption* in the trade). It appears to us that if one makes the Limit Assumption, Kratzer's definitions collapse, leaving no distinction between simple necessity and weak necessity.

The way we proposed to implement Sloman's insight was to suggest that *must/have to* say that all worlds in the modal base where the goal is achieved are worlds where the prejacent is true, while *ought to/should* say that all worlds in the modal base where the goal is achieved *and which are optimal by an additional measure* are worlds where the prejacent is true. The weak necessity modals explicitly signal that a secondary measure was used to make further distinctions among the favored worlds.

Our conception of weak necessity then makes them universal/necessity modals just as much as strong necessity modals are. What makes them weaker semantically is that they have a smaller domain of quantification: strong necessity modals say that the prejacent is true in all of the favored worlds, while weak necessity modals say that the prejacent is true in all of the very best (by some additional measure) among the favored worlds.

In the terms of the Kratzerian framework, we suggested that weak necessity modals are in general sensitive to (at least) two ordering sources. In the goal-oriented case, the first ordering source is simply the goal proposition designated by an *(in order) to*-adjunct or an *if you want to*-anankastic conditional. The second, subsidiary ordering source contains considerations such as how fast, how comfortable, how cheap, ... the means for achieving the goal are.

Weak necessity modals are used not just in goal-oriented modal claims, of course. There are epistemic uses and deontic uses:

(8) Morris ought to be in his office. (ambiguous between epistemic and deontic readings)

What are the additional ordering sources in epistemic and deontic cases? We propose that epistemic *ought* differs from epistemic *must/have to* in being sensitive not just to the hard and fast evidence available in a situation but also to a set of propositions that describe what is *normally* the case.[9] And in the deontic case, *ought* might be sensitive to less coercive sets of rules and principles in addition to the laws and regulations that strong necessity modals would be interpreted with respect to.[10,11]

[9] We should note that Kratzer suggested that even the strong epistemic necessity modals are sensitive to shakier assumptions. This was her attempt at explaining the apparent fact that *must p* seems weaker than a plain assertion of *p*. We are not entirely convinced that this is right. Perhaps, *must p* is in fact a strong necessity claim but marks that a deduction has occurred, while only a plain assertion of *p* is compatible with direct observation. This is something that is explored a little bit further by von Fintel and Gillies (2007).

[10] An intuition that deontic weak necessity goes with less coercive rules is laid out by Bybee et al. (1994), who write: "An examination of familiar and well-documented languages suggests that the major distinctions within obligation have to do with gradations of strength of the obligation: that is an obligation may be either strong or weak. If a weak obligation is not fulfilled, the consequences are not too serious; but the consequences of not fulfilling a strong obligation are much more severe. [...] English distinguishes strong obligation, expressed with *must* and *have to*, and weak obligation, expressed with *should*" [p. 186].

[11] It should be noted that the choice of what is a primary ordering source and what is a secondary ordering source is presumably not an accident. In the goal-oriented case we have the designated goal and measures of ways of achieving it, in the epistemic case we have hard and fast evidence and

There is obviously much more to be done before we would have a satisfactory theory of weak necessity and we won't be able to do much of that here. In this paper, our goal is to find some illumination from the way that many other languages express weak necessity.

3 The Crosslinguistic Picture

Does something like *ought* exist in other languages? (Note: For convenience, we will mostly be using capitalized "OUGHT" for the meaning of English *ought* and its equivalent in different languages. We will reserve "*ought*" for the English lexical item.)

It is not possible to answer the question of the cross-linguistic existence of OUGHT without providing a way to identify OUGHT cross-linguistically, that is, without providing essential ingredients of its meaning. We will try to identify OUGHT in other languages by trying to set up contrasts like those in (1) and (3). We will start with Greek[12]:

(9) **Tha eprepe** na plinis ta piata ala dhen ise ipexreomenos na to
FUT must+Past NA wash the dishes but NEG are obliged NA it
kanis
do
'You ought to do the dishes but you are not obliged to do it'

(10) **#prepi** na plinis ta piata ala dhen ise ipexreomenos na to kanis
must NA wash the dishes but NEG are obliged NA it do
'You must do the dishes but you are not obliged to do it'

(11) Oli **tha eprepe** na plenun ta cheria tus ala i servitori ine
All **FUT must+Past** NA wash the hands their but the waiters are
ipochreomeni na to kanun
obliged NA it do
'All ought to wash their hands but the waiters are obliged to do it'

(12) Oli **tha eprepe** na plenun ta cheria tus ala i servitori prepi
All **FUT must+PAST** NA wash the hands their but the waiters must
na ta plinun
NA them wash
'Everybody ought to wash their hands but waiters have to wash them'

What we see as qualifying as OUGHT in Greek is the necessity modal *prepi* in the Past tense in combination with the Future, the undeclinable particle *tha*. In fact, we

guesswork based on unreliable assumptions about the normal course of events, and in the deontic case we have strict laws and less sanctionable codes of behavior.

[12] The item *na* that occurs in most of our examples from Greek is an INFL area particle, present in all the Balkan Sprachbund languages. Its nature is not relevant to us here. We simply gloss it as NA.

can see in (12) that the modal *prepi* appears twice, once as OUGHT and once as a strong necessity modal. In the absence of the additional morphology on *prepi* as in (10), the sentence in (9) becomes a contradiction.

This means that at least in Greek, the difference between weak and strong necessity is not marked by the choice between different lexical items but by the presence or absence of the Future + Past morphosyntax on one and the same modal (which in its simple form expresses strong necessity). What is this Future + Past combination? It is the morphology that appears on verbs in counterfactuals, specifically, in the consequent of counterfactual conditionals (from Iatridou (2000))[13]:

(13) An efevge simera tha eftane tin ali evdhomadha
if left today **FUT** arrive**/PAST/IMP** the other week
'If he left today, he would arrive next week'

(14) An ton iche xtipisi to aftokinito tha iche pethani
if him had hit the car **FUT** have+**PAST** died
'If the car had hit him he would have died'

The astonishing conclusion is that Greek OUGHT is *a strong necessity modal meaning 'must' augmented by counterfactual morphology*. (Henceforth, we will often use the abbreviation CF to refer to counterfactual morphology.)

Next let's consider French. Here are the sentences we are considering:

(15) Tu **devrais** faire la vaisselle, mais tu n'es pas obligé
you **must/COND** do the dishes but you not+are not obliged
'you ought to do the dishes but you are not obliged to do them'

(16) #Tu dois faire la vaisselle mais tu n'es pas obligé

(17) Tout le monde **devrait** se laver les mains mais les serveurs sont
everybody **must/COND** REFL wash the hands but the waiters are
obligés
obliged
'Everybody ought to wash their hands but the waiters have to'

The sentence that has OUGHT in its translation is (15). It is not a contradiction, unlike (16). In (15), the modal *devoir* has the morphology that is traditionally described as "conditional mood". This morphology is absent in (16). In (17), with the Conditional morphology, the distinction between OUGHT and strong necessity, namely between *devoir*+COND and plain *être obligé*, can be set up again.

Conditional Mood is what appears in the consequent of counterfactual conditionals in French:

[13] We can see in (14) that the verb in the counterfactual consequent is also carrying Imperfective morphology, a specification that is missing form the verb *prepi* in its guise as OUGHT. Imperfective morphology is indeed required in Greek counterfactuals (and in counterfactuals in many other languages). However, there are some (extremely few) verbs in Greek that are not specified for the Imperfective/Perfective distinction and *prepi* is one of them (the verb meaning *have* is another, as can be seen in (12)). Therefore, we will not consider the neutrality with respect to the imperfective/perfective distinction an impediment to the conclusion reached in the text.

(18) Il n'est pas soûl. Si il etait soûl, il **parlerait** plus fort
He not+is NEG drunk. If he were drunk he **talk/COND** more loud

Iatridou (2000) argues that Conditional mood in Romance is nothing but Past+Future combination, but this is not terribly important for us here. What is important is that the modal that means OUGHT in French carries the same morphology as the verb in a counterfactual consequent.

Spanish behaves just like French and Greek:

(19) **Deberia** limpiar los platos, pero no estoy obligado
Must+COND clean the dishes but not am obliged
'I ought to do the dishes but I am not obliged'

(20) **Tendria** que limpiar los platos, pero no estoy obligado
Have+COND COMPL clean the dishes but not am obliged
'I ought to do the dishes but I am not obliged to'

(21) #Tengo que limpiar los platos pero no estoy obligado
Have COMP clean the dishes but not am obliged

(22) No esta borracho. Si estuviera borracho, gritaria mas
Not is drunk if was/SUBJ drunk yell/COND more
'He is not drunk. If he were drunk he would yell more.'

In (19)/(20), we see that we can set up the by now familiar contrast without generating a contradiction when a necessity modal contains conditional morphology. Sentence (21) shows that in the absence of this morphology we do get a contradiction. Sentence (22) shows that the morphology in question is exactly what appears in a counterfactual consequent. Finally, (23) shows the other way of bringing out the contrast:

(23) Los alumnus de quinto **tendrian que/deberian** conocer la
The students of fifth **have/COND COMPL /must/COND** know the
historia pero los de sexto deben/tienen que conocerla
story but those of sixth must/have COMP know+it
'The students of 5th grade ought to know the story but those of 6th grade have to'.[14]

Outside of Romance and Greek, we find the same pattern in Slavic. First let us consider Russian.[15] In Russian, the morphology on the counterfactual antecedent is Past tense plus the element *byl*, which we will not gloss here.

(24) Esli by on byl p'jan, to on **by shumel**
if byl he was drunk then he **byl make-noise-Past-Imperf**
'If he was drunk, he would be making noise'

[14] Karlos Arregi, who is the source of our Spanish data, reports that *deben* here is slightly dispreferred and *tienen* is the preferred option. It is unclear to him why this is so. He reports that overall, including contexts outside ours, he prefers to use *tener que* instead of *deber*.

[15] Russian provided by Tania Ionin.

This is exactly the morphology we find when we try to set up the OUGHT versus *must/have to* contrast. Unlike in the previous languages, here the modal element is participial (or adjectival) and the counterfactual morphology appears on the copula:

(25) Ty dolzhen **byl** **by** vymyt' posudu, no ty ne objazan
you required **be**+**PAST** **by** wash-Perf-Inf dishes but you not obligated
eto delat'
this do-Inf
'You ought to wash the dishes, but you don't have to do it'

And again, (25) is not a contradiction.

Next let us take a look at Croatian.[16] The CF-morphology is *bi* + participle:

(26) Da si pijan, više **bi vikao**
if are.2SG drunk more **would.2SG yelled.PCPL**
'If you were drunk, you would yell more.'

When we add the CF-morphology to the necessity modal, we get the meaning of OUGHT and lack of a contradiction in sentences like the following:

(27) **Morao** **bi** pospremiti sobu, ali na sreću ne moraš
must.PCPL would.2SG clear room but on luck not have.2SG
'You ought to tidy up your room, but luckily, you don't have to.'

In the absence of CF-morphology on the modal there is a contradiction:

(28) #Moraš pospremiti sobu, ali na sreću ne moraš
must clear room but on luck not have.2SG
'You have to tidy up your room, but luckily, you don't have to.'

And we can also set up the by now familiar contrast as in [17]

(29) Pučkoškolci **bi** **morali** znati algebru, ali
elem.school children **would.3PL** **must.PCPL** know algebra but
srednjoškolci je moraju znati.
high school children it must know
'Elementary school children ought to know algebra, but high school children have to know it.'

We find the same phenomenon in Germanic. Consider Dutch.[18] The Dutch counterfactual consequent contains the past tense of the verb *zullen*, which by itself (i.e. without the past tense) is used as a future marker. We will be glossing it with 'would', therefore, as this element can be seen as the past tense of *will*.

(30) Als ik rijk was, **zou** ik stoppen met werken.
If I rich were, **would** I stop with work
'If I were rich I would stop working'

[16] Croatian provided by Martina Gracanin.

[17] *Bi* is a second position clitic, which results in the reversal in order of the participle and *bi*.

[18] Dutch data provided by Janneke Huitink.

What happens when this counterfactual morphology combines with the modal necessity modal *moeten*? As expected, we get the meaning of *ought*, which does not cause a contradiction when juxtaposed with a negated necessity modal:

(31) Je **zou** eens Anna Karenina **moeten** lezen, maar het hoeft[19] niet
you **would** sometime AK **must** read but it must/NPI not

In the absence of the counterfactual morphology, the sentence is a contradiction:

(32) #Je moet AK lezen, maar het hoeft niet.
You must AK read, but it must/NPI not

And here is the other contrast:

(33) Iedereen zou Anna Karenina moeten lezen, en/maar mijn studenten moeten het lezen.
Everyone would AK must read and/but my students must it read
'Everyone should read AK and/but my students have to read it'

This is as good an occasion as any to point out that we are not claiming that all the world's weak necessity modals are formed by CF-marking on strong necessity modals. There are other ways to express weak necessity, in particular through dedicated lexical items, such as English *ought*. Dutch, for example, as pointed out to us by Marcel den Dikken (pc), has a modal *horen* that has as part of its lexical meaning weak necessity and it doesn't need CF-marking to convey that. The item is also lexically restricted to deontic uses, it cannot be used as an epistemic or goal-oriented modal.[20]

Let us add one more Germanic language to the picture, namely Icelandic[21]:

(34) Allir ættu að þvo sér um hendurnar
all.NOM.PL have.cf.3PL to wash.INF themselves at hands.the.ACC.PL
en starfsmenn eru skyldugir að gera það.
but employee.NOM.PL be.3PL obliged.NOM.PL to do.INF it
'Everyone ought to wash their hands, but employees are required to do so.'

(35) þú ættir að þvo upp en þú ert ekki skyldugur að gera það.
you.NOM have.cf.2SG to wash.INF up but you.NOM be.2SG not obliged.NOM.SG to do.INF it
'You ought to do the dishes, but you're not required to do them.'

[19] The verb *hoeven* is the form of the necessity modal when it scopes under negation. We gloss it there as *must/NPI*.

[20] Another language that uses both CF-marking on a strong necessity modal and a dedicated lexical item appears to be Swedish, as reported to us by Anna-Sara Malmgren (pc).

[21] We thank Jóhannes Gísli Jónsson and Chris Warnasch for providing us with these data.

(36) #þú átt að þvo upp en þú ert ekki
you.NOM have.2SG to wash.INF up but you.NOM be.2SG not
skyldugur að gera það.
obliged.NOM.SG to do.INF it
'#You have to do the dishes, but you're not required to do them.'

(37) Ef hann hreyfði sig meira þá væri hann ekki
if he.NOM move.cf.3SG himself more then be.cf.3SG he.NOM not
jafn þreyttur.
equally tired.NOM.SG
'If he were more active then he wouldn't be so tired.'

Outside Indo-European, we find the same phenomenon. Consider Hungarian.[22] In a counterfactual, the so-called 'conditional' morphology ***-na/-ne*** appears:

(38) Nem re'szeg. Ha re'szeg len-**ne**-0, hangos-abb-an
not drunk if drunk be-**cond**-pres,3sg loud-comp-adv
kiabal-**na**-0
shout-**cond**-pres,3sg

Then, as before, if we take the CF-morphology and place it on a necessity modal *kell*, we get exactly what we have seen so far.

(39) El **kell-ene-0** mosogat-n-od a ta'nye'r-ok-at, de nem
away **must-cond-3sg** wash-inf-2sg the dish-pl-acc but not
vagy musza'j
be-pres,2sg must
'You ought to / should wash the dishes, but you don't need to / but it's not necessary'

In the absence of the conditional morphology on the necessity modal the sentence is a contradiction:

(40) #El kell-3sg mosogat-n-od a ta'nye'r-ok-at, de nem vagy
away must-3sg wash-inf-2sg the dish-pl-acc but not be-pres,2sg
musza'j
must
'You must wash the dishes, but you don't need to / but it's not necessary'

And the other place where we have been seeing the contrast can also be set up:

[22] The Hungarian data were provided by Aniko Csirmaz. According to Anna Szabolcsi (pc), there may be an additional interesting fact in Hungarian: when the complement of OUGHT is stative, the situation is counterfactual, in that it cannot be changed anymore. When the complement is not stative, no such entailment/implicature arises. We were not able to duplicate this judgment with all of our informants, though.

(41) Az o:to:dik-es-ek-nek tud-ni-uk **kell-ene** ez-t a to:rte'net-et,
the fifth-adj-pl-dat know-inf-3pl **must-cond** this-acc the story-acc
de a hatodik-os-ok-nak musza'j / kell tud-ni-uk
but the sixth-adj-pl-dat must / must know-inf-3pl
'Fifth graders ought to / should know this story, but sixth graders must know it'

We conclude then that it is a cross-linguistically stable fact that the meaning of OUGHT can be conveyed with counterfactual morphology on a strong necessity modal.[23] In the perhaps illusory hope that we can get the semantics of OUGHT compositionally and transparently from the combination of counterfactuality with a strong necessity modal, we will from now on be using the term "transparent OUGHT" to refer to the strong necessity modal + CF-morphology that English *ought* translates into in languages like the above.

The next section addresses the question whether transparent OUGHT has the same range of modal flavors as English *ought* does.

4 Flavors

Which of the common modalities (deontic, epistemic etc.) can *ought*/OUGHT function as?

4.1 Epistemic Modality

Here is an example of *ought* in an epistemic use:

(42) It's 3pm. He ought to be in his office.

Let's say you are on your way to Morris's office, which is down the hall from mine, and ask me whether I think that Morris is in his office. Neither of us knows whether he is, in fact, there. Under those circumstances, I can utter (43).

(43) It's 3pm. Given what I know about Morris's habits, he ought to be in his office. Why don't you go check?

The same fact is also true for transparent OUGHT. Greek:

(44) Ine 3. Tha'prepe na ine sto grafio tu. Pigene na dhis
'It is 3. He ought to be in his office. Go see.'

In short, both *ought* and transparent OUGHT can be used epistemically.

[23] In fact, historically, English fits this picture too. According to the OED and other sources— many thanks to Jay Jasanoff for discussion of these points—modal *ought* was the past indicative as well as the Past Subjunctive of the verb *owe* ('possess', one more case of a verb meaning "possession" becoming a modal) in the Old English period (700–1100). Later on, *ought* continued as the past subjunctive only, with the past indicative of *owe* continuing as *owed*.

4.2 Goal-Oriented Modality

Next we go to *ought* as a goal-oriented modal. It seems uncontroversial that such a use is possible:

(45) To go to Ashfield, you ought to take Route 2.

We already discussed this case earlier. The best way to go to Ashfield is the one where some secondary goal is satisfied as well, e.g. avoiding traffic, or a having a scenic drive.

Here are some cases of goal-oriented transparent OUGHT:

(46) Pour traverser, tu devrais prendre ce bateau-ci
to cross, you must+CF take this boat

(47) Gia na perasis apenandi tha'prepe na chrisimopiisis aftin edho tin varka
in order to cross other side must+CF NA use this here the boat

4.3 Deontic Modality

In order to make certain that we are dealing with deontic *ought*/OUGHT, we can try to make the source of the obligation overt:

(48) ?According to the law, people convicted of stealing ought to go to prison

(49) ?Simfona me ton nomo, I kleftes tha'prepe na pane filaki (Greek)

(50) ?Segun la ley, un ladron deberia ir a la carcel
According-to the law, a thief must-COND go to the jail

How good are these sentences? We feel that there is something funny about them. The law does not speak like that.[24] A theory of *ought*/OUGHT will have to capture and explain the funniness of its use in deontic contexts like the ones above.

There are sentences that possibly come closer to showing that *ought* can appear as a deontic modal:

(51) You ought to do the dishes.

(52) It ought to be the case that bullying is/be illegal.

Here, the two authors are disagreeing for the time being. One author thinks that she could spin an argument that such cases are not really deontic but goal-oriented, something like "to satisfy rules of politeness, you ought to do the dishes", etc.[25] The

[24] Wertheimer (1972: pp. 116 and 120) makes the same observation.

[25] The idea that OUGHT is primarily a goal-oriented modal is also defended by Finlay in work in progress (Finlay, 2006).

other author believes that he can see deontic *ought* as perfectly normal. The crucial point about *ought* is that it signals the existence of a secondary ordering source. When we report the content of one particular set of rules or principles,[26] a kind of megalomania occurs that makes that set of rules the only relevant ordering source and so *ought* becomes unusable. But as soon as we have more than one set of rules interacting, deontic *ought* is fine. We will not resolve this debate here. The reader is free to pick a side.

* * *

To conclude this section: We have seen that transparent OUGHT really seems to be very much the same as English *ought* semantically. The range of uses is entirely parallel, the conveyed meanings appear to be the same. We had a preliminary idea about the meaning of English *ought*: that it expresses weak necessity, plausibly construed along the lines suggested by Sloman. Now, it is time to face the music: if transparent OUGHT has the same meaning of weak necessity, how does that meaning arise from the combination of counterfactual marking and strong necessity?

5 Counterfactuality?

There is much that we could and should say about the morphosyntax, semantics, and pragmatics of CF-morphology, some of which both of us have done in the past (Iatridou, 2000; von Fintel, 1999). For now, we would like to stay at a fairly simple and intuitive level. Counterfactual marking signals that some explicit or implicit assumption has taken us outside the "context set" in Stalnaker's sense. Consider a CF-marked conditional:

(53) If Peter were in the office, Mary would be happy.

The counterfactual marking could be there because it is taken for granted that Peter is not in his office (counterfactuality in the strict sense), or it could be merely

[26] A side-remark on how the content of laws, rules, and regulations is commonly presented: from the perspective of Kratzer's framework, where ordering sources are given as sets of propositions, satisfaction of which is used to measure the position of a particular world on the ordering scale, one might expect something like this:

(i) The following is the law: there is no obstruction of driveways, anyone who obstructs a driveway pays a fine, . . .

The content of the law is a set of propositions that the world should ideally make true. Instead, what one usually finds is this:

(ii) The following is the law: there must be no obstruction of driveways, anyone who obstruct a driveway must pay a fine, . . .

That is, the law itself is presented using deontic modals. When you think about it, this is a curious kind of circularity. The solution is presumably that the modals used in the declaration of the law are performatively used. We'll leave this topic to another occasion or for other researchers.

because the speaker wants to admit the possibility that it is taken for granted that Peter is not in the office.

Now, in the transparent OUGHT construction, counterfactual marking occurs on a modalized sentence (where the modal is a strong necessity modal). The hope is, of course, that if we compose these two ingredients, the meaning of *ought* will arise. If this was an ideal world (one without compositionality puzzles—but what fun would that be?), every time we have a strong necessity modal with CF-morphology, the meaning of OUGHT would arise.

Unfortunately, or, fortunately, things are not that simple. When you think about it, having counterfactuality on top of an embedded modal should result in the claim that the modal claim holds not necessarily in the actual world but in some, possibly counterfactual, worlds that the higher operator takes us to. So, in our case we would predict that CF + strong necessity should claim that a strong necessity claim holds in some possibly counterfactual world, which is not what we wanted: we wanted as the result that a weak necessity claim holds in the actual world.

Interestingly, we find that English behaves exactly as we would have predicted. English has a strong necessity modal that can inflect and occur in an infinitival form, namely *have to*. This language also has CF-morphology, usually taken to be *would*. What we find now is that adding *would* on top of *have to* does not yield the meaning of a weak necessity OUGHT. Recall the environments in which we diagnosed OUGHT. In those we see that *ought* cannot be replaced by *would have to*:

(54) a. Everyone ought to wash their hands; employees must
b. *#[27] Everyone would have to wash their hands; employees must

(55) a. You ought to do the dishes but you are not obliged to do them.
b. *#You would have to do the dishes but you are not obliged to do them.

The same conclusion holds if we look at goal-oriented modality. Recall that a plain necessity modal like *have to* conveys that there is only one way to achieve one's goal, while *ought* conveys that there is more than one way to achieve the goal but that the suggested means is the best by some measure:

(56) a. To get to the island you have to use this boat.
b. To get to the island you ought to use this boat.

If English had transparent OUGHT, that is, if the combination of necessity + CF always yielded OUGHT, then *would have to* should be able to convey what *ought* does. But it does not:

(57) To get to the island, you would have to use this boat.

(57) conveys that there is only one way to get to the island. That is, it patterns with *have to*, not *ought*.

In other words, English provides us with a case that shows that not every combination of necessity + CF yields OUGHT. It shows precisely the expected

[27] We use the symbol "∗#" to avoid determining the nature of the inappropriateness.

interpretation from such a combination. The string *would have to* talks about a necessity that obtains in a counterfactual world.[28] In the actual world, there is no modal advice, suggestion or obligation (we will refer to this meaning as WOULD HAVE TO):

(58) (If Fred had a car) he would have to register it.

(59) (If Fred wanted to get to the island) he would have to use this boat.

(60) (If the law were/was different) Fred would have to give up everything in the divorce.

On the other hand, when we use *ought*, the modal's force holds in the actual world:

(61) He ought to register the car.

(62) He ought to use this boat.

(63) Fred ought to give up everything in the divorce

Now, we come to the surprising phenomenon of transparent OUGHT. In the transparent languages, the exact same string is used in all of (58–60) and (61–63). The following examples are from Greek but the observation holds for the other languages as well:

(64) An o Fred iche aftokinito, **tha eprepe** na to
if the Fred had car, must+CF(=**WOULD HAVE TO**) NA it
dhilosi
register

(65) An o Fred ithele na pai sto nisi, **tha eprepe**
If the Fred wanted to go to-the island, must+CF(=**WOULD HAVE TO**)
na pari aftin tin varka
NA take this the boat

(66) An o nomos itan dhiaforetikos, o Fred **tha eprepe**
If the law were different, the Fred must+CF(=**WOULD HAVE TO**)
na parachorisi ta panda sto dhiazijio
NA give up everything in-the divorce

(67) o Fred **tha eprepe** na dhilosi to aftokinito
the Fred must+CF(=**OUGHT**) NA register the car

(68) o Fred **tha eprepe** na pari aftin tin varka
the Fred must+CF(=**OUGHT**) NA take this the boat

(69) o Fred **tha eprepe** na parachorisi ta panda sto dhiazijio
the Fred must+CF(=**OUGHT**) NA give up everything in-the divorce

[28] Counterfactual epistemics have difficulties of their own, so we will stay away from them for now.

In sentences (64–66), the modal relation holds in a counterfactual world. In (67–69), the modal relation holds in the actual world.

This, then, is the picture that emerges: In some languages (the ones we called "transparent OUGHT languages") the string necessity+CF has two meanings, that of a weak necessity modal in the actual world and that of a strong necessity modal in some counterfactual worlds. For convenience, we will refer to the interpretation in which the modal holds in the actual world as OUGHT. We will refer to the interpretation where the modal holds in the counterfactual world as WOULD HAVE TO.

English, on the other hand, has lexicalized the interpretation where the modal holds in the actual world into the item *ought*. In addition, the English string *would have to* unambiguously refers to the interpretation where the modal holds in a counterfactual world.

It would appear then that in the case of transparent OUGHT, counterfactual marking is not doing its usual job of marking that we are being taken to a counterfactual scenario. Instead, the modal claim continues to be made about the actual world and the effect of the marking is to weaken the strong necessity modal to a weak necessity modal. In the transparent languages, counterfactual marking has two uses in combination with a strong necessity modal: (i) saying that the strong necessity holds in a counterfactual scenario, (ii) saying that a weak necessity holds in the actual world. In English, counterfactual marking on a strong necessity modal only has use (i). To express use (ii), English resorts to the lexical item *ought*.

6 A Consolation and a Precedent

In the previous section we saw that not all combinations of strong necessity + CF yield the meaning OUGHT. For example, English *would have to* fails to yield such a reading. But the closer inspection to which the English case forced us, also made us realize that in the transparent languages one and the same string (strong necessity + CF) is ambiguous between two interpretations. This is a very crucial point as we will need to address the question of where and how this ambiguity manifests itself. That is, does the string necessity + CF yield two separate LFs or is there one (underdetermined) meaning or LF that can yield the two interpretations seen above by way of the context?

In either case, the question arises whether it is English that is weird or the transparent OUGHT languages. As we saw, from a certain point of view, the single interpretation that English gives to *would have to* is exactly what we expect, so the fact that in transparent OUGHT languages a second interpretation emerges seems unexpected. On the other hand, the ambiguity we found in transparent OUGHT languages is cross-linguistically very stable and maybe once we find a way to explain it, the absence of the OUGHT reading for English *would have to* will become the unexpected fact.

We will try to answer these questions in what follows. In this section, we will show that there is another set of data where we find that for a certain modal meaning, English chooses a designated lexical item, while other languages choose a "transparent" way of conveying that meaning. This seems to support the view that it is English that is the outlier.

Consider the English verb *wish*. In a variety of languages what are called "counterfactual wishes" are done with *want* + CF-morphology (Iatridou, 2000). That is, where English uses the verb *wish* for counterfactual wishes, other languages use the verb *want* augmented by CF-morphology (Iatridou, 2000):

(70) He wished she had a Honda Odyssey

(71) Il voudrait qu'elle ait une Honda Odyssey

(72) Tha ithele na iche ena Honda Odyssey

In short, English lexicalizes into the verb *wish* what other languages express with the verb *want* + CF, and English lexicalizes into *ought* what other languages express with the verb *must* + CF.

So like before, the question arises whether internal to English, *want* + CF can freely occur instead of *wish* and vice versa. The answer will be 'no' for either direction. The English version of want + CF is *would want to*. This periphrasis cannot substitute for English *wish*:

(73) I wish that I was taller.

(74) *I would want that I were taller.[29]

Neither can *wish* substitute for *want* when the latter is in a counterfactual conditional[30]:

(75) If he were taller, he would want to have a different bed.

(76) *If he were taller, he wishes (for/ to have/ that he had) a different bed.

So what we have is that is that there are two lexicalizations in English that other languages can express as a verb + CF-morphology. However, in both cases internal to English, the lexicalized items cannot substitute for or be substituted by the relevant English verbs augmented by CF-morphology.

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[29] We are disregarding here the archaic *I would that I were taller*.

[30] This test was not presented in the section on OUGHT because we have not managed to find consistent data among the native speakers that we consulted. That is, Section 5 showed that *would have to* cannot appear where *ought* is good. The question also arises whether *ought* can appear where *would have to* is good. This is the same as the question whether *ought* can appear in a CF consequent, satisfying the morphosemantic requirements of the verb in a CF consequent:

(i) All males who are 18 years old have to register with the Selective Service. It's a good thing he is not 18. If he were 18, he **ought** to register with the Selective Service.

Unfortunately, we have found that there is serious disagreement among speakers as to the status of (i) and similar sentences.

However, as before, in the "transparent wish" languages, the string *want* + CF is ambiguous between wanting in a counterfactual world as in (77) and wanting in the actual world as in (78):

(77) An itan psiloteros tha ithele makritero krevati
if was taller **FUT** want+**Past** longer bed
'If he was taller he would want a longer bed'

(78) Tha ithela na imun psiloteri
FUT want+**Past** NA was taller
'I wish I was taller'

English, on the other hand, lexicalizes into one item the case where the desire is in the actual world (*wish*[31]) while the periphrastic string is reserved for desire in a counterfactual world (*would want to*). The parallelism to the case of OUGHT should now be clear: English chooses specialized lexical items for the interpretation where the modal claim holds in the actual world (*ought*) and where the desire holds in the actual world (*wish*).

We can visualize the situation as in Fig. 1. In both cases, the case of transparent OUGHT and the case of transparent WISH, we see that while in the transparent languages the combination of the basic item and CF-morphology does double duty, in English a dedicated lexical item takes on the meaning where the modal claim holds in the actual world and in English the CF-marked structure carries only one of the meaning that it would have in the transparent languages. The systematicity of the picture suggests to us that English should be treated as the special case.

Why should in English the combination of CF-marking and strong necessity not be able to express weak necessity? One possibility is morphological blocking: it is precisely the presence of a dedicated lexical item that blocks the weak necessity meaning for the more complex structure. However, this idea would appear to be immediately falsified by the fact that some transparent languages also have dedicated weak necessity modals (Dutch, for example, has the dedicated deontic weak necessity item *horen* as we saw earlier).

Another possibility is that English is missing a crucial enabling factor without which CF-marking cannot do the job it does in the transparent OUGHT and transparent WISH constructions. It is quite likely that additional factors are, in fact, required. For example, CF-morphology with a necessity modal that is adjectival also fails to yield OUGHT. Sentence (79) is a counterfactual modal (i.e. it patterns with *would have to*); it does not mean OUGHT:

(79) To get to the island it would be necessary to use this boat.

And lest the reader think that failure to compose OUGHT is a general property of English and that adjectival modals are just a special case of that, consider (80) from Greek. In this sentence, CF-marking with the adjectival necessity modal fails to

[31] This shows that the term "counterfactual wishing" is misleading. The desire is in the actual world.

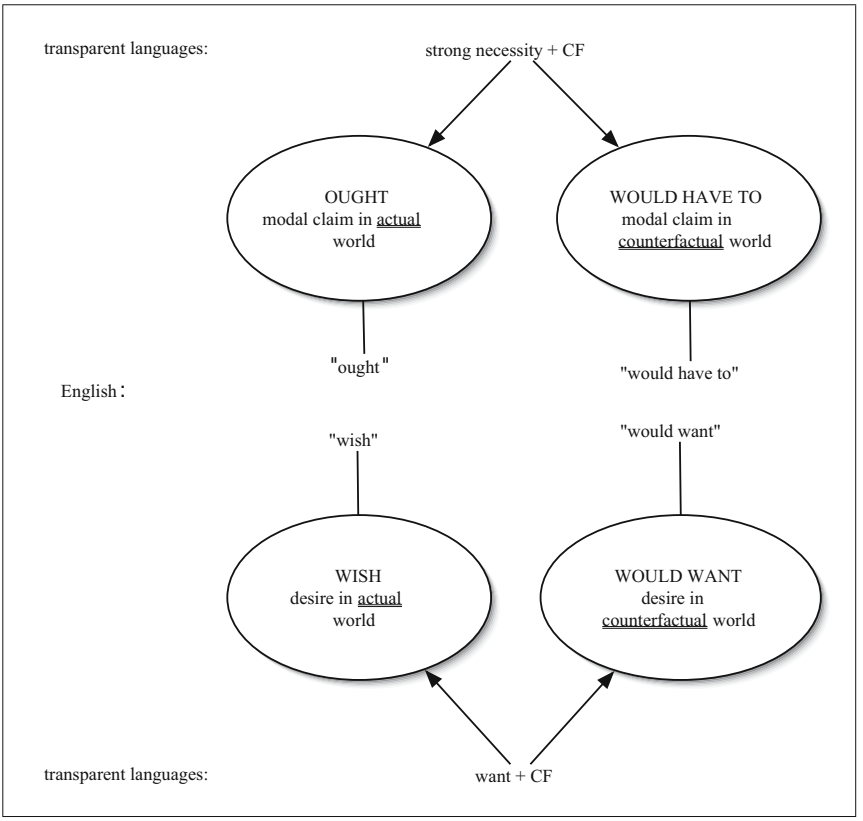

Fig. 1 Comparing English to "transparent" languages

yield OUGHT, the result is just that of a modal in a counterfactual world (i.e. WOULD HAVE TO):

(80) tha itan anageo na paris aftin tin varka
BE+CF necessary NA take this the boat
'It would be necessary to take this boat' (not 'it ought to be necessary to take this boat')

Actually, with the exception of the Russian participial modals (which may turn out to not be an exception after all), we have no case where a non-verbal modal could yield OUGHT when (the copula is) combined with CF-marking. From what we have seen, only verbal necessity modals turn into OUGHT. So it may not be sufficient to have a necessity modal of any type and CF marking to make OUGHT. Some additional condition must be satisfied. We don't know what that would be.[32]

[32] Noam Chomsky (pc) pointed out to us a possible generalization: the transparent reading only arises when tense is marked directly on the modal. Why would that be so, if it turns out to be true?

Here is where we are now. Our goal is to figure out how the combination of CF-morphology and a strong necessity modal can result in the meaning of a weak necessity modal. It was immediately clear that in the typical uses of OUGHT, we do not claim that a strong necessity holds in a counterfactual scenario. Instead, we claim that a weak necessity holds in the actual world. That throws doubt on the idea that CF-marking is doing its usual job in transparent OUGHT. Then, we saw that CF-marking on a strong necessity modal fails to create OUGHT in at least two cases: (i) English *would have to*, which may be due to blocking by the lexicalized form *ought* and is parallel to the failure of *would want* to mean 'wish' even though *want* with CF-morphology does mean 'wish' in many other languages; (ii) CF-marking on non-verbal necessity modals, for which we have no explanation. No matter how we eventually explain these exceptions, we still have no handle on what the CF-morphology is doing to the strong necessity meaning in the transparent OUGHT cases that do work. In the next section, we discuss a possible solution to the puzzle, which we argue cannot work.

7 Scope Confusion?

We saw that the combination of CF-morphology and strong necessity modals is ambiguous between a WOULD HAVE TO reading and an OUGHT reading. The former is what one would expect from a modal in a counterfactual scenario. It's the latter that is puzzling. What if in that case there is a permutation at LF whereby the counterfactuality doesn't actually take scope over the modal but takes scope under it? We owe this idea to Tim Stowell (pc).

We think that such an operation may in fact occur in certain cases. For example, consider the following puzzling use of counterfactual marking in English:

(81) I would have expected him to be here.

This sentence appears ambiguous. There is the entirely predictable reading of what the expectations of the speaker in a certain counterfactual scenario would have been, as in:

(82) If he had promised to attend this meeting, I would have expected him to be here.

But there is also a reading where (81) actually expresses an actual expectation, but one that turned out to be unsatisfied:

(83) I would have expected him to be here. Why isn't he?

Perhaps, the right analysis of (81) is that the counterfactual marking on *expect* is out of place and at LF is interpreted on the complement sentence, marking that he is not in fact here.

Another case that one might consider such an analysis for is the case of transparent WISH that we introduced earlier. Here, counterfactual marking on *want* could be seen as expressing not a want in a counterfactual scenario but an actual want towards a counterfactual state of affairs.[33]

So, this is not a crazy idea. Can we carry it over to transparent OUGHT? No, the analysis fails spectacularly on two connected grounds. The first one is that in OUGHT, it is not a strong necessity modal that makes it to the actual world. That is, if scopal rearrangement brought the necessity modal out of the scope of CF-marking then a sentence with OUGHT should make a strong necessity claim in the actual world. But this is not so, as we have seen. The second reason is that in the transparent OUGHT cases, the complement is simply not marked as counterfactual. When a speaker uses transparent or non-transparent deontic or goal-oriented *ought*, there is no feeling whatsoever that the event under *ought* is contrary-to-fact or even unlikely.[34]

So, we are back to square one. We have no explanation for why counterfactual marking turns the meaning of a strong necessity modal into a weak necessity meaning.

8 Ordering Source Promotion

Let's regroup.

We started with a brief discussion of our previous view of the difference between strong and weak necessity modals. In essence, weak necessity modals bring in a secondary ordering of the favored worlds. Strong necessity modals say that the prejacent is true in all of the favored worlds, while weak necessity modals say that the prejacent is true in all of the very best (by some additional measure) among the favored worlds. While the standard Kratzer framework parametrizes the semantics of modals to two parameters (modal base and ordering source), we introduced a pair of ordering sources: (i) the primary one that is the only one that strong necessity modals are sensitive to and (ii) a secondary one which is the one that weak necessity modals use to refine the ranking of the worlds favored by the primary ordering

[33] We actually don't think that this is the right analysis. But we'll leave the treatment of transparent WISH to some other time. For now, there is some relevant discussion in Iatridou (2000).

[34] Of course, there are cases where the prejacent is interpreted as contrary-to-fact:

(i) He ought not to have revealed the secret.

But we assume that here the counterfactuality of the prejacent (*he didn't reveal the secret*) is signaled by additional morphological factors. Note by the way that it is not easy to use strong necessity modals to express the same post-fact denunciation of a mistake:

(ii) #He had to/has to not have revealed the secret.

(iii) #He would have to not have revealed the secret.

We do not know why this is so.

source. We built that differential sensitivity into the lexical entries of *must/have to* and *ought*.

The puzzle we are facing now is that in the transparent OUGHT construction something makes it so that a strong necessity modal suddenly shows sensitivity to the secondary ordering source. And that mysterious something is somehow brought into play by counter-factual marking. Our strategy now will be to first identify what operation needs to happen to make a strong necessity modal sensitive to a secondary ordering source, and then to think about why counterfactual marking brings about that operation.

What needs to happen to make a strong necessity modal sensitive to a secondary ordering source? By assumption, the lexical entry of a strong necessity modal only looks at the primary ordering source. So, what we need to do is to take the secondary ordering source and *promote* it to primary status, without, of course, forgetting the initial primary ordering source.

The idea is that saying that to go to Ashfield you *ought to* take Route 2, because it's the most scenic way, is the same as saying that to go to Ashfield in the most scenic way, you *have to* take Route 2. We have promoted the secondary goal of enjoying as much scenery as possible to primary status. It is crucial though that the primary goal of getting to Ashfield is still paramount—the fact that you get the most scenery possible if you go to Serengeti National Park is irrelevant. This makes formalizing the notion of ordering source promotion a bit tricky, as we will now see.

The simplest idea might be that we merge the secondary ordering source with the primary ordering source and interpret the strong necessity modal with respect to the newly merged primary ordering source, which now includes the promoted secondary ordering source. But what would "merger of ordering sources" be? In Kratzer's framework, ordering sources are (functions from evaluation worlds to) sets of propositions, and we assess the status of the worlds in the modal base as to how many of the propositions in the ordering source they make true. So, since the ordering sources are sets of propositions, a natural idea about promotion and merger would be to just take the set union of the two sets of propositions. But that will go wrong and will not produce the same as the weak necessity meaning.

Take our goal-oriented example. The primary ordering source is some goal such as "you get to Ashfield" and the secondary ordering source is a goal such as "you experience as much scenery as possible". Given the right circumstances, that might mean that you ought to (but don't have to) take Route 2. But when we merge the two ordering sources, we would quite possibly rank as equally optimal worlds where you get to Ashfield in a very scenic way and worlds where you go to Serengeti National Park in the most spectacularly scenic way imaginable. The problem is that the primary goal of getting to Ashfield should not be put on a par with maximizing scenery. Even though scenery maximization has been promoted, it should not be able to trump or even be considered at the same level as getting to Ashfield.

The trick then is to make strong necessity modals sensitive to the secondary ordering source by promoting it but without making it count at the same level as the primary ordering source. There are at least two ways of doing this that we can think of. One would involve making modals in general sensitive to an ordered sequence

of ordering sources, making strong necessity modals sensitive to ordering sources in a designated initial segment of that sequence, and treat promotion as moving an ordering source into that initial segment.[35]

A perhaps simpler way of formalizing promotion would involve something very much like set union of the two ordering sources but would only add propositions from the secondary ordering source into the new ordering source if they do not conflict with the primary ordering source. A complicating issue with such an approach would be that there might not be a unique way of getting a newly merged ordering source. (What if the secondary ordering source itself contained two contradictory propositions? Which one would be added to the primary ordering source?) So, at the moment, we don't know whether we should pursue this second option.[36]

The first half of our task is done (modulo the missing formal implementation): we understand what needs to happen to make a strong necessity modal sensitive to a secondary ordering source in such a way that it will express weak necessity. We need to promote the secondary ordering source to a status that makes it visible to the strong necessity modal. Now, we need to turn to the second half of our task: why is CF-morphology signaling ordering source promotion?[37]

[35] It would probably be distracting to go through a formal development of that idea. Here are some rough sketches of the notions one might use:

(i) The context provides for each modal, a modal base f and a bipartitioned sequence of ordering sources $<< g_1, \ldots, g_i >, < g_{i+1}, \ldots, g_k >>$

(ii) Strong necessity modals say that the prejacent is true in all worlds in $\max_{g_i(w)}(\ldots(\max_{g_1(w)}(f(w))))$.

Here $\max_g(w)$ is a function computed from an ordering source that identifies the best worlds in a set of worlds.

(iii) Weak necessity modals say that the prejacent is true in all worlds in $\max_{g_k(w)}(\ldots(\max_{g_{i+1}(w)}(\max_{g_i(w)}(\ldots(\max_{g_1(w)}(f(w)))))))$.

(iv) An ordering source sequence $<< g_1, \ldots, g_i >, < g_{i+1}, \ldots, g_k >>$ is changed by ORDERING SOURCE PROMOTION by moving any number of ordering sources from the second tier into the first tier. For example, $<< g_1, \ldots, g_i, g_{i+1} >, < g_{i+2}, \ldots, g_k >>$ is the result of submitting the initial sequence in 1 to a one-step promotion operation.

[36] Some of the technical work done by Frank (1996) on the notion of "compatibility restricted set union" would probably be useful to us.

[37] Ordering source promotion may happen outside the transparent OUGHT construction as well. Consider an example attributed to Wolfgang Klein by von Stechow et al. (2006). Imagine that to cross Siberia to go to Vladivostok you can take one of two trains: the Russian train or the Chinese train. The Chinese train is significantly more comfortable. Now consider the following two variants:

(i) To go to Vladivostok, you have to take the Chinese train.

(ii) To go to Vladivostok, you ought to take the Chinese train.

They report that Wolfgang Klein accepts the *have to*-variant, while Orin Percus only accepts the *ought to*-variant. What Klein-type speakers can do, in our analysis, is to silently promote

9 Why Counterfactual Marking?

Why is it CF-morphology that gets put to the use of turning a strong necessity modal into a weak necessity modal in the transparent languages? What does CF-morphology on its more understood uses have in common with this notion of promotion of the secondary ordering source?

In the transparent OUGHT cases, we are not moving to counterfactual worlds that differ from the actual world at the ground level of empirical facts: there are no different circumstances there, no different goals, primary or secondary, no different evidence, reliable or shaky. Instead, a parameter of evaluation is changed. We move from one context where a secondary ordering source is invisible to a strong necessity modal to a new context where that secondary ordering source is promoted in such a way as to become visible to the strong necessity modal.

Perhaps, then, the counterfactual marking is co-opted here in a somewhat meta-linguistic kind of way: "if we were in a context in which the secondary ordering source was promoted, then it would be a strong necessity that…". This would explain why even though there is CF-morphology, the modal claim is made firmly about the actual world; all that the morphology marks is a change in evaluation parameters.

It is probably not an accident that counterfactual marking brings with it an element of tentativeness: the speaker is not saying that the secondary ordering source is something that has to be obeyed. The choice of whether to really promote the secondary ordering source is left open.

10 Conclusion

In this paper, we have raised the question of how the semantics of weak necessity modals fits into the general picture of the semantics of modal expression. We have reiterated a tentative suggestion inspired by the old proposal by Sloman. We then brought in the cross-linguistic picture. It turned out that it is a very stable fact across languages that weak necessity can be expressed by taking a strong necessity modal and marking it with counterfactual morphology. We explored this pattern in a number of languages. We then raised the question of whether our ideas about the semantics of weak necessity can help us understand the fact that a strong necessity modal becomes a weak necessity modal when marked with counterfactual morphology. We proposed that what is going on here is the promotion of a secondary ordering source. The counterfactual morphology marks this quasi-meta-linguistic

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the secondary goal of being comfortable. Percus-type speakers cannot do silent ordering source promotion but either have to mark it by choosing a weak necessity modal or explicitly add comfort to the primary ordering source:

(iii) To go to Vladivostok comfortably you have to take the Chinese train.

operation but in a hypothetical way ("if we were to take your secondary goals and make them non-negotiable", "if this were a normal day (i.e. if we were to take as given assumptions that only hold firmly for normal days)", etc.).

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