

Anatomy of a Modal Construction*

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Languages can express the existence of an easy way of achieving a goal in a construction we call the *Sufficiency Modal Construction* (SMC), which combines a minimizing/exclusive operator like *only* or *ne ... que* and a goal-oriented necessity modal like *have to* or *need to*, as in *To get good cheese, you only have to go to the North End*. We show that the morpho-syntactic make-up of the SMC is cross-linguistically quite stable. We show that the semantics of the construction constitutes a severe compositionality problem. We solve the problem by giving the negation and the exclusive operator differential scope. For *only*, this means decomposing it into negation and an exclusive *other than* component.

Keywords: modality, necessity, sufficiency, exclusive operators, minimizers, *only*, scope, intervention, negative polarity

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1 Introduction

Imagine that you come to visit us in Boston. You want to make some tiramisu for us but you complain that you cannot find good mascarpone, nor for that matter any other good cheese in Boston. Incensed, we exclaim “What do you mean you can’t find good cheese in Boston??!!”, followed by (1).

(1) To find good cheese, you only have to go to the North End!

What do we convey with (1)? We somehow manage to say at least the following: going to the North End is (part of) a way of finding good cheese and going to the North End is relatively easy. Furthermore, we are leaving it open whether there are other places (in Boston) to get good cheese, that is, with (1) we are not claiming that the North End is the only place to find good cheese.

At first glance at least, (1) seems to say that going to the North End is *enough* or *sufficient* to find good cheese, so we will call the construction in (1) the *Sufficiency Modal Construction* (SMC).¹

As we will see, the SMC raises a serious compositionality puzzle revolving around the interaction of negation, exclusives/*only*, and modals. In the end, we will have explored novel ideas about all of these elements. In the remainder of this introduction, we will sketch briefly how this construction is constructed cross-linguistically. In Section 2, we will show why the construction presents us with a compositionality puzzle. In Section 3, we proceed gradually towards a compositional analysis. In Section 4, we tie up some loose ends and explore whether the SMC really expresses sufficiency, how easiness enters into its meaning, and whether there is reason to use “more than” in its semantics.

1.1 The Sufficiency Modal Crosslinguistically

In (1), the SMC morpho-syntax consists of the modal verb *have to* and the element *only*. Crosslinguistically, the SMC consists of the following ingredients:

- A modal verb (*have to* in (1), but also other modals, as we will see)
- and one² of
 - an element like *only*³ (the “*only* languages”: English, German, Finnish, Spanish and more), or

1 We use the term “modal” in its semantic sense and not to refer to the narrow morpho-syntactic class of modal auxiliaries in English. We thank the *LJ* reviewer for raising this point.

2 Some languages (e.g. Spanish) fall in both categories, i.e. they can either use *only* or the NEG + EXCEPTIVE form.

3 Related elements like *just*, *merely*, and the somewhat archaic *but* can also serve this purpose in English:

(i) You just/merely have to go to the North End.

(ii) You have but to go to the North End.

- negation and an exceptive phrase (the “NEG + EXCEPTIVE languages”:
Greek, French, Spanish and more)

We already saw in English an example of an *only* language. Below are examples from Greek, French, and Irish, three NEG + EXCEPTIVE languages:⁴

- (2) An thelis kalo tiri dhen echis para na pas sto
If want/2sg good cheese NEG have/2sg except NA go/2sg to-the
North End.
North End
“If you want good cheese you only have to go to the North End”
- (3) Si tu veux du bon fromage, tu n’as qu’à aller à NE
if you want of good cheese you not-have except-to go to-the NE
- (4) Más cáis atá uait, níl agat ach a dhul go Co.
if+COP cheese C+is from-you NEG+is at-you but go[-FIN] to County
Chorcaigh.
Cork
“If it’s cheese you want, you only have to go to County Cork.”

At first blush, it seems intuitive that *only* can do the same job as NEG + EXCEPTIVE. After all, the following are equivalent:

- (5) Only John came.
- (6) Nobody came except John.

However, we will see that, as always, things are not as simple as they seem.

The SMC does not just occur in standard Indo-European languages. Here is an example from Tagalog (courtesy of Norvin Richards, pc):

- (7) Kung gusto mong bumili ng mainam na keso, kailangan mo lang
if want you-C buy tasty cheese need you only
pumunta sa North End.
go to North End

And here is one from Finnish (from Liina Pykkänen, pc):

- (8) Jos halua-t hyvää juusto-a, sinu-n on vain mentävä
If want-2sg good-part cheese-part, you-gen is only go-part
North End:iin.
NE-illative

We also can express something similar to the SMC with *at most*:

- (iii) You at most have to go to the North End.

Based on the productivity of ways of expressing the SMC, we would want to insist on a compositional analysis, rather than some kind of lexical stipulation.

⁴ French data are from Valentine Hacquard, pc. Irish data are from Jim McCloskey, pc.

And here is one from Hebrew (from Danny Fox, pc):

- (9) ?ata rak carix lalexet larexov hasamux kede? limco gvina
You only need to-go to-the-street the-near-by in-order to-find cheese
tova.
good
'In order to find good cheese, you only need to go to the near-by street'

And finally an example from Arabic (from Abbas Benmamoun, pc):

- (10) Yla bgiti lhut ma-XeSsak/lazzem tamshi ?illa ltemma.
If want fish neg-need/should go except there
'If you want fish you only need to go there'

1.2 Some Frames in which the SMC Appears

We have found three environments in which the SMC tends to appear:

- In construction with a purpose clause:

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

- In what have been called *anankastic* conditionals (see Sæbø (2001), von Stechow et al. (2006), Huitink (2005), Nissenbaum (2005)):

(12) If you want good cheese, you only have to go to the North End.

- In what we would like to call “causal conjunction” (see von Stechow and von Stechow (2005) and work in progress):

(13) You only have to go to the North End and you will find good cheese.

For the purposes of this paper we will mostly be using examples with purpose clauses, although the comparison with the causal conjunction cases will prove crucial at a certain point.

2 The Compositionality Puzzle

Ideally, we would just reach for existing off-the-shelf analyses of the crucial components of the SMC and once assembled according to standard composition principles, they would result in the sufficiency meaning that the SMC has. Unfortunately, if we follow that recipe, we will not get the right result, as we will demonstrate in this section. We will start by looking at the modal component of the SMC and then at the exceptive/exclusive element.

2.1 The Modal in the SMC

What kind of modals appear in the SMC? Let's look at a sentence very much like our paradigm sentence, but taking out the exceptive/exclusive element. This should give us a sense of what the modal component of the SMC is.

(14) To find the best canoli, you have to go to Sicily.

We will assume a more or less standard possible worlds semantics for modals like *have to*. In particular, we assume that *have to* is a necessity modal which effects universal quantification over a set of worlds (its *modal base*). In our paradigm examples, the modal base is given by the interplay of a *circumstantial* accessibility relation (using terminology from Kratzer (1981, 1991)) and the infinitival purpose clause.

The worlds we are quantifying over are those where the facts (circumstances) about cuisine, culture, intercontinental trade, the quality of American supermarkets etc. are the same as here in the actual world. This set of worlds is then further restricted by the purpose clause to those worlds where you find the best canoli. (14) therefore conveys that given the circumstances, all of the worlds where you find the best canoli are such that you go to Sicily. In other words, going to Sicily is a *necessary* condition for finding the best canoli.

We note that (14) clearly conveys that finding the best canoli is a goal or desire and therefore the sentence expresses a kind of *goal-oriented* (or *teleological*) modality. However, we should emphasize that it is not the modal *have to* that is the source of the goal-orientation; instead, it is the infinitival purpose clause that signals that finding the best canoli is a goal. This will be important when we look at the causal conjunction cases, where there is no goal-orientation implied.⁵

Our SMC examples so far have only showcased the *possessive modal*⁶ *have to*. But other modals can be involved in the expression of goal-oriented modality. In particular, there are other modals with (quasi-)universal force such as *need to*, *must*, *ought to*, and *should*. Which ones can participate in the SMC?

In English, the modal *need to* can also be the verbal element in the SMC, in all environments that we find it in.

- (15) a. To get good cheese you only need to go to the North End
b. If you want good choose you only need to go to the North End
c. The skies need only to darken a little bit and my dog runs under the table

⁵ The fine details of the semantics of the modals involved here are explored further in our "Harlem" paper (von Stechow and Iatridou 2004).

⁶ By "possessive modal" we mean the modal verb that is pulled morphologically from the morpho-syntax that expresses possession in the language. Languages expressing possession with *have* often use *have to* as a modal. Languages expressing possession with *be to* often use *be to* as a modal. See Bhatt (1997).

But other goal-oriented modals with universal force cannot do it:⁷

- (16) *If you want good cheese you (only) must (only) go to the North End.
- (17) *If you want good cheese you (only) ought (only) to go to the North End.
- (18) *If you want good cheese you (only) should (only) go to the North End.

And no modal with existential force like *can* or *may* can yield the SMC reading, even though at least *can* has a goal-oriented reading:⁸

- (19) If you want good cheese, you can go to the North End.
- (20) *If you want good cheese you (only) can / may (only) go to the North End.

In short, in English, a modal verb can be an ingredient of the SMC only if it has universal force; yet, not all universals will do. Indeed, in all languages that we have looked at, there is no modal verb with existential force to be found in the SMC. And like in English, not all modals with universal force will do either.

In Greek, we find a similar situation in that the modal glossed as ‘must’ cannot participate in the SMC, even though it is fine in the plain goal-oriented reading:

- (21) An thes kalo tiri prepi na pas sto North End.
If want/2.sg good cheese must na go/2.sg to-the North End
‘If you want good cheese, you must go to the North End’
- (22) *An thes kalo tiri dhen prepi para na pas sto North
If want/2.sg good cheese NEG must except na go/2.sg to-the North
End.
End

But as in English, the universal modal that glosses as ‘need’ can be part of the SMC:

- (23) An thes kalo tiri dhen chriazete para na pas sto North
If want/2.sg good cheese NEG need except na go to-the North
End.
End
‘If you want good cheese, you only need to go to the North End’

⁷ Some of these sentence have a reading where what you ought to do is go to the North End and nowhere else in addition. What is important for us is that there is no SMC reading of these sentences.

⁸ Once we have our semantic analysis fully in place, the reader will easily see why (20) doesn't have an SMC reading. There are good readings of (20), of course, where it says that the only thing that is compatible with the goal is going to the North End, or that it is compatible with the goal that you go to the North End and nowhere else.

Similarly, Hindi⁹ has two modals with universal force, one that we will gloss as ‘be-to’ (this is Hindi’s “possessive modal”) and one that we will gloss as ‘should’:

- (24) agar tum sacmuch yeh exam paas kar-naa caah-te ho,
 if you truly this exam pass do-Inf want-Hab.MPl be.Prs.2Pl,
 to tumhen kaRii mehnat kar-nii caahiye.
 then you.Dat hard.f hardwork.f do-Inf.f should
 ‘If you truly want to pass this exam, you should work hard.’
- (25) agar tum sacmuch yeh exam paas kar-naa caah-te ho,
 if you truly this exam pass do-Inf want-Hab.MPl be.Prs.2Pl
 to tumhen kaRii mehnat kar-nii ho-gii.
 then you.Dat hard.f hardwork.f do-Inf.f be-Fut.f
 ‘If you truly want to pass this exam, you will have to work hard.’

However, only ‘be-to’ can be used in the SMC:

- (26) Ram-ko ghar aa-naa-hii thaa ki baccoN-ne ro-naa shuruu
 Ram-Dat home come-Inf-only be.Pst that children-Erg cry-Inf start
 kar di-yaa.
 do GIVE-Pfv
 ‘Ram had only to come home and the children started crying.’
- (27) *Ram-ko ghar aa-naa-hii caahiye thaa ki baccoN-ne ro-naa
 Ram-Dat home come-Inf-only should be.Pst that children-Erg cry-Inf
 shuruu kar di-yaa.
 start do GIVE-Pfv

The modal verbs *have to*, *need to*, Greek ‘have to’, Greek ‘need’, Hindi ‘be-to’ pattern together in being able to participate in the SMC modal while *must*, *ought to*, *should*, Greek ‘must’ and Hindi ‘should’ pattern together in not being able to. Why would this be? What else splits the universal modals in a similar way?

It appears that their scoping properties with respect to negation does. The modals that can occur in the SMC scope *under* negation:

- (28) a. He doesn’t have to go there. NEG > modal (deontic)
 b. He doesn’t have to have done that. NEG > modal (epistemic)
 c. If you want good cheese you don’t have to go to the NE.
 NEG > modal (goal-oriented)
 d. He doesn’t need to do that. NEG > modal
 e. He need not do that. NEG > modal

⁹ Our Hindi data were provided by Rajesh Bhatt, pc.

- (29) Dhen chriazete na figis.
 NEG need NA leave
 'You don't need to leave' NEG > modal (deontic)
- (30) tumhen Dilli nahiiN jaa-naa hai.
 you.Dat Delhi NEG go-Inf be.Prs
 'You don't have to go to Delhi.' NEG > have to
 [You don't have an obligation to go to Delhi.]

On the other hand, the universal modals that cannot occur in the SMC scope *over* negation:

- (31) You should not leave. modal > NEG (deontic)
- (32) He should not be there now. modal > NEG (epistemic)
- (33) He must not leave. modal > NEG (deontic)
- (34) He must not be there now. modal > NEG (epistemic)
- (35) You ought not to leave. modal > NEG (deontic)
- (36) Dhen prepi na ine eki.
 NEG must NA be there
 'He must not be there' modal > NEG (epistemic)
- (37) Dhen prepi na to kanume afto.
 NEG must NA it do this
 'We must not do this' modal > NEG (deontic)
- (38) prepi na min ine eki.
 must NEG NA be there
 'He must not be there' modal > NEG (epistemic)
- (39) tumhen Dilli nahiiN jaa-naa caahiye.
 you.Dat Delhi NEG go-Inf should
 'You should not go to Delhi.' [should > not]

The same results hold for all the languages that we have investigated in this regard.

So here is our generalization on this matter:

- (40) Universal modal verbs can participate in the SMC only if they scope under negation.

We have found no counterexample to this.¹⁰

Which modals scope under negation in a given language depends on a lot of factors and seems very idiosyncratic (see Picallo (1990), Cormack and Smith

¹⁰ It should be noted though that this is a necessary but probably not sufficient condition. That is, there may be necessity modals that scope under negation but cannot give rise to an SMC interpretation. We have some suggestive data from Hebrew and Norwegian but cannot pursue this here.

(2002) and others). For example, English *must* scopes over negation, as we just saw, while German *müssen* scopes under it:

- (41) Du musst das nicht machen.
 You must that not do
 'You don't have to do that' NEG > modal (deontic)

But even in the face of such capriciousness, the generalization above seems to hold absolutely. For example, unlike English *must*, German *müssen* can appear in the SMC:

- (42) Du musst nur ins North End gehen.
 you must only in-the North End go

Finally, note that languages sometimes have modals that appear specialized for occurrence under negation, sometimes called NPI *modals*, see for example German *brauchen*:

- (43) Du brauchst das nicht machen.
 you need that not do
 'You don't have to do that.'

- (44) *Du brauchst das machen.

This item can be used in the SMC, as expected by now:

- (45) Du brauchst nur ins North End gehen.
 You need only in-the North End go

In summary: we have seen that the modal in the SMC has to be a goal-oriented necessity modal that can scope under negation.^{11, 12}

11 Apparently, in Norwegian, bare verbs can form SMC, as pointed out to us by Tarald Taraldsen. Many thanks for discussion of this and related points to Anders Holmberg, Øystein Nilsen, and Peter Svenonius. A relevant example is this:

- (i) hvis du vil til Oslo er det bare aa sette seg paa toget
 if you want to Oslo is it only to sit RFL on the-train
 'If you want to go to Oslo, you only have to get on a train.'

12 We have seen that the verbal element in SMC is a universal goal-oriented modal that scopes under negation. This is actually somewhat of a problem because in some languages (at least Greek, Italian, French, Romanian, Bulgarian, and Hindi), the plain possessive modal lacks the goal-oriented meaning. See von Stechow and Iatridou (2005: Section 5.1) for more on this point.

2.2 *The Exclusive/Exceptive Marker in the SMC*

Next, we need to look at the other characteristic ingredient of the SMC, the exceptive/exclusive marker, crosslinguistically an element like *only* or a NEG + EXCEPTIVE combination.

The benchmark analysis of *only* goes back to Horn's 1969 CLS paper (Horn 1969), where he argues for two distinct components. A sentence like

(46) Only John was in the room.

asserts that nobody other than John was in the room and *presupposes* that John was in the room.

In general, given a sentence ϕ (the so-called *prejacent*), *only* ϕ will assert that no alternative to ϕ is true and will presuppose that the prejacent ϕ is true. For (46), the prejacent is (47):

(47) John was in the room.

The set of relevant alternatives is as usual contextually determined. Rooth argued in his dissertation (Rooth 1985) that the focus structure of a sentence helps to signal what the relevant alternatives are. For (46), alternatives could be *Mary was in the room*, *Susan was in the room*, etc.

Looking at the NEG + EXCEPTIVE languages, we will take the proposition without NEG + EXCEPTIVE to be the prejacent. Just like with *only*, the truth of the prejacent is also conveyed in the NEG + EXCEPTIVE construction. Consider the Greek sentences (48a) and (49a) and their prejacent propositions (48b) and (49b), which are clearly presupposed or entailed:

(48) a. Dhen irthe para mono o Yanis.
NEG came except only the Yanis
'Nobody came except Yanis'

b. Irthe o Yanis.
came the Yanis
'Yanis came'

(49) a. Dhen idha para mono ton Yani.
neg I-saw except only the Yani
'I didn't see anyone except Yani'

b. Idha ton Yani.
I-saw the Yani
'I saw Yani'

2.3 *The Prejacent Problem*

With these assumptions in place, let us consider our paradigm example in an *only*-language:

(50) To find good cheese, you only have to go to the North End.

We will proceed the way we would with any sentence containing *only*. We have to identify the set of relevant alternatives that *only* is operating on (for the assertion), and we have to identify the prejacent (for the presupposition). To identify the set of alternatives we need to determine the focus of *only*. It would appear that the natural focus in such examples is on the infinitival complement of the modal. So, we would expect the alternatives to be propositions like that you have to go to Milan, that you have to go to Reykjavik, that you have to order from amazon.com, etc.

Given such a set of alternatives, (50) would then assert that none of these alternatives is true. That is, to find good cheese, you do not have to go to Milan, you do not have to go to Reykjavik, and you do not have to order from amazon.com. This prediction seems to be just right — the SMC does convey that other ways of achieving one's goal may exist but are not necessary.

As for identifying the prejacent, for (50), this would be (51) (basically (50) without *only*):

(51) To find good cheese, you have to go to the North End.

And here is where the problem lies. In the previous section we saw that the standard analysis of *only* includes the truth of the prejacent as a presupposition. But in the SMC, the prejacent is not automatically understood to be true. We can correctly utter (50) in a situation where there are other places in the Boston area to get good cheese, as long as going to the North End is relatively easy. But then (51) is not true because according to it the only place to get good cheese in the Boston area is the North End.

We will call this *The Prejacent Problem* and we take this to be the central problem for the compositional analysis of the SMC.

The Prejacent Problem arises regardless of the morpho-syntax of the SMC. We can also set up the equivalent of the Prejacent Problem in languages that use NEG + EXCEPTIVE in the SMC. Following the assumptions in the previous section, the prejacent of (52) is (53), i.e. (52) without NEG and exceptive:

(52) ya na vris kalo tiri dhen chriazete para na pas sto North End
to na find good cheese NEG need except na go to-the North End

(53) ya na vris kalo tiri chriazete na pas sto North End
to na find good cheese need na go to-the North End

The problem again is that (52) does not entail or presuppose (53), since according to the latter you need to go to the North End to find good cheese. That is, according to (53) the only place where you can find good cheese in the Boston area is the North End, while (52) is fully compatible with there being many such places.

In short, the Prejacent Problem surfaces no matter how the SMC is constructed morpho-syntactically. It is a problem of compositionality. Any analysis of the SMC will have to deal with this issue.

Here are some quick attempts at solving the issue which will show that this is not easy. One might think that perhaps the problem lies with the assumption that sentences with *only* and NEG + EXCEPTIVE sentences presuppose (or entail) their prejacent. What if at least in the SMC, the prejacent presupposition is cancelled in some way? One might say that any appearance of a prejacent entailment is due to some kind of defeasible implicature and for some reason or other, the implicature does not arise in the SMC. Our paradigm sentence would then simply claim that to find good cheese, you do not have to go to Milan, you do not have to go to Reykjavik, and you do not have to order from amazon.com, and so on. There would be no presupposition that to find good cheese you have to go to the North End.

The problem is that we would now have no obvious way of deriving that going to the North End is in fact a way of getting good cheese (the component of meaning we called *sufficiency*). Imagine that both Milan and Reykjavik are very good places to find good cheese, but that the North End is not. Then the SMC sentence would — as it now stands — be incorrectly predicted to be true, since you don't *have to* go to Milan (you can go to Reykjavik) and you don't *have to* go to Reykjavik (you can go to Milan). This is not good.

Another possibility would be to claim that the presupposition triggered by *only* and NEG + EXCEPTIVE is weaker than we thought. In fact, Horn in his 1996 paper Horn (1996) proposes that the presupposition carried by *only* sentences is weaker than he had originally suggested in his 1969 paper. The idea is that *only* ϕ asserts that within a given set C no alternative to ϕ is true and presupposes that there is an element in C that *is* true (without saying that it is ϕ that is true).

Note that — as is — this makes no new and improved predictions for unembedded cases of *only*. If something is true and no alternative to ϕ is true, then it must be ϕ that is true. Indeed, Horn's arguments for his new analysis all hinge on embedded occurrences of *only*, which doesn't appear to be what we have in the SMC. Again, no luck.

We see that playing with the prejacent presupposition of *only* and NEG + EXCEPTIVE does not obviously lead to a solution to the compositionality puzzle.

At this point, one might wonder what our options are, given that we combined what seemed like independently motivated existing analyses of the apparent key components of the construction. Abstractly, enlightenment could come from playing with any or all of the following:

- (i) the nature of the underlying modal (e.g. maybe it is not a necessity modal after all),
- (ii) the semantics of *only* and of NEG + EXCEPTIVE (e.g. maybe we need to re-

think the exact nature of the prejacent presupposition after all, although we just saw that there are obstacles),

- (iii) the logical structure of the construction (e.g. maybe the components are not what we thought they were or maybe they do not scope quite in the way we thought they did).

The puzzle we are faced with is not one that has previously been treated.¹³ Our solution will combine aspects of options (ii) and (iii). We propose that the solution can be found by looking closely at the NEG + EXCEPTIVE type of SMC.

2.4 Precursors

Before we develop our analysis of the SMC, we would like to draw attention to an intriguing passage in a paper by Beck and Rullmann (1999: p. 261), which briefly touches on the notion of sufficiency (reproducing their numbering):

We suggest that (30) means (31a) or equivalently (31b):

- (30) Four eggs are sufficient (to bake this cake).
- (31) a. It is not necessary (given the rules for your cake baking) that you have more than four eggs.
b. It is possible (given the rules for your cake baking) that you have only four eggs.

We will derive this semantics via the lexical meaning of *sufficient*. We will take as our guideline the paraphrase in (31b). We will assume that semantically the argument of *sufficient* is propositional in nature. *Sufficient* then contributes modal possibility as well as a meaning component amounting to *only*.

Note also that their example could easily be rephrased as an SMC sentence:

- (54) You only need (to have) four eggs. (Beck, pc)

What Beck & Rullmann are doing in the quoted passage is unpacking the notion of sufficiency into two complex paraphrases:

1. negation > necessity > *more than* (31a)
2. possibility > *only* (31b)

Beck & Rullmann adopt as their working analysis of the notion of sufficiency the second structure, where we have possibility scoping over *only*. We do not think that we can work with this structure as an analysis of the SMC, for two reasons: (i) in the SMC, *only* appears to have scope *over* — not under — the modal, not just because of its surface position but also because, as we have seen, the SMC is restricted to modals that scope under negation, a

¹³ An exception are recent unpublished lecture notes by von Stechow, where he cites relevant passages in the work of Bech (1955/57) and where he ends up resorting to a non-compositional solution to our puzzle.

crosslinguistically stable fact,¹⁴ (ii) the SMC clearly contains a necessity modal and not a possibility modal, again a crosslinguistically stable fact, as we have seen.

So, contrary to Beck & Rullmann, we have come to the conclusion that something like the three-part structure in Option 1 of Beck& Rullmann lies behind the mystery of the SMC. We will develop this in what follows. Again, we should emphasize that Beck & Rullmann intended their discussion to be about the hidden logical structure of the lexical item *sufficient* and not about the compositional structure of *only have to* or NEG + *have to* + EXCEPTIVE.

3 The Semantic Composition of the SMC

3.1 Ne ... que under the Microscope

3.1.1 *Basic Assumptions* Recall that in French, the SMC looks as follows:

- (55) tu n' as qu'à aller à North End.
you not have except-to go to NE
"You only have to go to the North End."

We propose to analyze this type of SMC as containing three elements: negation scoping over a necessity modal which in turn scopes over an "exceptive quantifier". We will see that with some work this gives an adequate compositional analysis for the SMC. After that, we will return to the *only*-type of SMC and try to argue that it as well involves three elements.

In what follows, we will sometimes use French as perhaps the most familiar kind of example, but it should be clear that we are talking about the NEG + EXCEPTIVE construction as found not just in French but also in Greek, Irish, etc.

First, we need to put some working assumptions about NEG + EXCEPTIVE in place.¹⁵ Consider a simple non-modal example:

- (56) Je n' ai vu que Jean.
I not have seen QUE Jean
"I only saw John."

Our basic idea is that semantically the QUE-phrase introduces an existential quantifier over individuals "other than" Jean.¹⁶ There is a syntactic question

¹⁴ We assume here that the scope of *only* with respect to modals mirrors that of negation. We will develop this in a surprising way later in this paper.

¹⁵ Dekydtspotter's SALT 3 paper (1993) provides an extensive discussion of *ne ... que*. We will not adopt his proposal in any detail. See also Azoulay-Vicente (1988). Beyond French, we are not familiar with detailed semantic work on the NEG + EXCEPTIVE construction in other languages.

¹⁶ Readers familiar with the existing work on exceptives in formal semantics, esp. the first author's work on this topic (von Stechow 1993), will realize that we are not treating *que* as a bona-

here as to whether there is a covert quantifier *something/anything* hosting (i.e. being modified by) the QUE-phrase, or whether the entire quantifier meaning is all wrapped up in the meaning of the QUE-phrase. For simplicity, we will adopt the latter answer.^{17,18}

fide exceptive in the strict sense. The non-identity “other than” condition it expresses is very weak compared to the conditions expressed by English exceptives like *but* or *except*. To some degree, the difference is actually masked in the case where the operator modifies an existential quantifier in the scope of a negation. It has always been a puzzle why exceptives can modify NP1 *any* as in *I didn't see anyone but John*, see Gajewski (2004) for a recent attempt at solving that puzzle. Here, we just note that if the exceptive in its NP1-like use only expresses a non-identity condition, there is no need to go to heroic measures like the ones explored by Gajewski. Having said that, there are reasons to at least modify the simple “other than” semantics, as will be discussed in Footnotes 22 and 24.

17 Historically, at least, one would expect that there used to be an overt host. Jay Jasanoff (personal communication) tells us that the *que* of *ne ... que* comes from Latin *quam* (“than”) and not from *quod* (the complementizer ‘that’). More specifically, the source would be the following:

- (i) non vidi alium (hominem) quam Iohannem.
not saw other (man) than John

The innovation that would have had to have happened to yield the Modern French string is the deletion of *alium* (*hominem* was anyway optional, as the adjective could stand on its own in Latin.) Since the equivalent of *ne ... que* occurs in Spanish, Irish, Greek and other languages, we are faced with the question of development there as well. One possibility would have been that the construction appeared in a mother language that these languages share but given their spread it would have to be proto-IE of circa 4000 BC. And if the *ne ... que* construction did indeed go back to that time, we would expect to find it in intermediate stages, but this is not so. Latin, for example, lacks any equivalent of *ne ... que*. This leaves as the only possibility that the development happened independently in all these languages. So possibly this was an areal feature spread from one language to another by imperfect bilinguals serving as the vehicle of transmission. — We are very grateful to Jay Jasanoff and his informants for discussing these points with us.

18 Although we do not wish to thoroughly address the question of the syntactic presence of a covert host, one might consider the following, possibly weak argument, in favour of the position that hostless exceptives are truly hostless, namely that there isn't a covert quantificational element like “somebody other than”.

In languages where there is no doubt what Case we are dealing with, based on the form of the noun, we see that the Case on the argument of (the equivalent of) *que* depends on the grammatical role the covert host would have held. In other words, the Case on the argument of *que* can be Nominative, Accusative, etc.:

- (i) Dhen irthe para o Yanis.
NEG came PARA the John/NOM
- (ii) Dhen idha para ton Yani.
NEG saw PARA the John/ACC
- (iii) Dhen milisa para me ton Yani.
NEG talked PARA P the John /PREP ACC

This differs from hosted exceptives, which always come with their own Case, e.g. *Greek* *ektos* always comes with (Prepositional) Accusative (or Genitive, depending on the dialect). Compare (iv) with (i):

So, we will be working with a meaning for QUE *Jean* as follows:

(57) $\llbracket \text{QUE Jean} \rrbracket = \lambda P. \exists x (x \neq \text{Jean} \ \& \ P(x) = 1)$.

We will further assume that the QUE-phrase stands in an NPI-like licensing¹⁹ relation to the negation NEG — to capture the fact that it is only under negation that exceptive QUE-phrases are grammatical. Later on we will see more arguments for the NPI-nature of QUE-phrases.

Taken together, (57) therefore means that it is not the case that there is someone other than John that I have seen, which appears to be adequate at first glance. But we will soon enough have reason to refine this analysis.

3.1.2 *A Possible Worry* Before we go on to apply this analysis to the SMC, we have to address a worry that should arise for anyone familiar with the literature on French negation.²⁰ We are treating the exceptive *que* as devoid of negative force and attribute the negative meaning to the negative element *ne*. But this is not obviously correct. The complication is that in French plain sentential negation also has two parts which straddle the verb: *ne* VERB *pas*. In spoken French, the item *ne* is often dropped:

(58) Il (ne) lit pas Le Monde.
He (NE) reads PAS Le Monde
'He does not read Le Monde'

One might be tempted, therefore to treat only *pas* as the contentful item. If this were so, it would have several repercussions for the NEG + EXCEPTIVE construction in French, as *ne* can also be dropped there, as it can in all similar environments:

(59) Il (ne) lit que Le Monde.
He (NE) reads QUE Le Monde
'He reads only Le Monde' / 'He does not read anything except Le Monde'

(60) Il (ne) lit rien.
He (NE) reads RIEN
'He reads nothing' / 'He doesn't read anything'

(iv) Oli i andres irthan ektos apo ton Yani
All the men/NOM came except P the John/ACC

It seems, then, that the argument of *para* has direct access to the Case assignment process that the covert quantificational element would have had if it existed. One could stipulate that the covert host is still there and that there is some sort of unusual concord going on, but it is, of course, simpler to hypothesize that the *para*-phrase itself stands in the relevant case position and there is no covert host.

19 See Giannakidou (2002) for another use of NPI *para*.

20 We thank Jean-Ives Pollock for discussion of the issues addressed in this section.

- (61) Il (ne) lit plus.
 He (NE) reads PLUS
 'He does does not read anymore'
- (62) Il (ne) lit jamais.
 He (NE) reads JAMAIS
 'He doesn't ever read' / 'He never reads'

If the droppability of *ne* means that it is *pas* that carries the semantic force of negation, then by analogy one would have to say that *que* does as well in (59), *rien* in (60) etc. This would mean that *rien* means 'nothing', *plus* 'no more', and *jamais* 'never'. Such conclusions might be acceptable, but things are more complicated in the *ne ... que* case, as now *que* would have to mean 'only'. However, this conclusion overgeneralizes, as it wrongly predicts (63) to be grammatical:

- (63) *Que Jean aime Marie.
 QUE Jean loves Marie
 Attempted: 'Only Jean loves Marie'

It seems then, that even though *que* does not have to follow overt *ne*, it does have to follow the position in which *ne* might have appeared. From this we conclude that French *que* is not the sole carrier of the semantic force of the construction, even though its partner is not always overtly there. This means that French *que* is still an NPI exceptive and it does not mean 'only'.

We could follow Pollock (1989) in taking *ne* to be the overt head of a projection of negation (NegP), which could also contain a covert head. For Pollock, the element *pas* is the specifier of NegP. He also argued that the other partners of *ne* in (59)-(62) are specifiers of projections that have overt or covert *ne* as head, though these are projections lower in the tree than the one that contains sentential negation. In short, the droppability of *ne* is not truly a complication for us, once we adopt Pollock's framework. For Pollock, even in plain sentential negation *ne ... pas*, *ne* carries the semantic force and *pas* is a "reinforcer" of sorts (Pollock, p.c.).²¹

We conclude that our analysis, which splits the negative force off from the exceptive *que* is compatible with the general facts about French negation.

3.1.3 Splitting the SMC Now, in the SMC, there is a necessity modal intervening between the negation and the QUE-phrase:

²¹ Pollock also points out that this view is supported by the fact that in his speech it is *pas* that is droppable with certain modals:

- (i) Je ne {peux, saurais} dire qui a eu cette idée pour a première fois.
 I NE {can, would know} say who has had this idea for the first time
 'I cannot/would not know be able to say who has had this idea for the first time.'

(64) NEG > necessity > QUE

The QUE-phrase here would be an existential quantifier over verb phrase meanings “other than” going to the North End. We expect the following interpretation:

(65) (To find good cheese), it is not necessary that you do something other than going to the North End.

Or in other words ($\neg \Box \exists \equiv \Diamond \neg \exists$):

(66) In some worlds where you find good cheese, there is nothing you do other than going to the North End.

This sounds right.²² Time to wrap up the paper? Unfortunately, not yet.

3.1.4 The Prejacent Problem, Again We still need to consider the presuppositional part of the meaning of *only*/NEG + EXCEPTIVE. Consider again the simple sentence (56), repeated here:

(56) Je n’ ai vu que Jean.

With what we have so far, this sentence would mean that I saw nobody other than Jean. But (56) says more than that. The sentence reliably conveys that I saw Jean, not just that I saw nobody other than him (which might have left it open whether I saw him or not). In this, (56) behaves just like an analogous *only*-sentence:

(67) I only saw John.

As we saw earlier, the part of the meaning of (67) that conveys that I, in fact, saw John (not just that I didn’t see anybody other than him) is attributed to a presuppositional component of the meaning of *only*. We should then try to apply the same move to (56) to get this sentence to convey that I saw Jean. But once we have that result, we will need to see whether the Prejacent Problem is still present, that is: once the exceptive triggers a presupposition is the fact

²² To make sure this is indeed right, we have to be clear about what it means for something to be “other than” going to North End. First of all, it is logically impossible to go to the North End without incurring some other properties as well, such as changing position. As is familiar from the semantics of *only*, cf. e.g. von Stechow (1997) for a summary, such entailed properties do not count as “other”. But beyond that, going to the North End to find good cheese may also involve entering one of the many stores there, something that is not entailed by going to the North End but would still count as “part of” going there and thus shouldn’t count as “other” either. We suspect that the notion of lumping, which has proved useful in the semantics of “only”, cf. again von Stechow (1997), could be appealed to here as well. We leave the obvious moves to the imagination of our experienced readers. We do continue the discussion of similar issues in Footnote 24.

that we have a split structure enough to prevent the Prejacent Problem from arising?

We will look at two options from the literature about the relevant presupposition of *only*: the Horn 1969 analysis and the Horn 1996 analysis, already touched on in Sections 2.2 and 2.3. We will apply each in turn to the NEG + EXCEPTIVE construction and to the SMC.

OPTION A: Strong presupposition à la Horn 1969:

(68) (QUE Jean) P:

A(ssertion): $\exists y (y \neq \text{Jean} \ \& \ P(y) = 1)$

P(resupposition): $P(\text{Jean}) = 1$

Under this analysis, (56) presupposes that I saw John and asserts that I didn't see anybody other than John. This sounds right. But the question now is what happens to the presupposition in the SMC, where we have a modal to complicate matters.

To answer that question, we need to establish what happens to presuppositions under modals in general. Consider an example involving the existence presupposition triggered by a definite possessive phrase:

(69) To attend this dinner, you don't have to bring your campaign donation (you can mail it in afterwards).

To the naïve ear, it sounds as if (69) either (i) presupposes that the addressee will give a donation anyway or (ii) presupposes that to attend the dinner, it is part of the requirements that the addressee make a donation. Most theories of presupposition will deliver one or both of those readings. A straightforward analysis in the Karttunen/Stalnaker/Heim tradition, for example, will deliver the second presupposition, but will make space for additional inferences yielding the first presupposition.

By analogy, then we would predict that the structure

(70) NEG > necessity > QUE (go to the North End)

will either (i) presuppose that you do go to the North End (anyway) or (ii) presuppose that to achieve the goal you *have to* go to the North End.

That is not a good prediction. It is clear that the sentence can be uttered without presupposing that one goes to the North End anyway. And the second presupposition is also entirely undesirable — this is what we called the Prejacent Problem: we don't want to derive that going to the North End is a necessary condition, as this is clearly not what (70) conveys.²³ So let's try Horn 1996.

²³ Is there wiggle room within Option A (Horn 1969)?

OPTION B: Weaker presupposition à la Horn 1996:

As discussed briefly in Section 2.3, in this newer proposal by Horn the presupposition of *only p* is not that the prejacent *p* is true but that there is some relevant alternative (not necessarily *p*) that is true. Transposed to NEG + EXCEPTIVE, this would give us:

Perhaps, the presupposition that we go to the North End is *accommodated* into the restriction of the modal, that is, it becomes part of the understood domain restriction of the modal. Incorporating a presupposition in the restrictor of an operator is a process often referred to as “local” or “intermediate” accommodation and is discussed in some detail in Berman (1991) and Kratzer (1995). What would we get if we incorporated the presupposition that we go to the North End into the restrictor of the modal? We would get that the worlds quantified over are assumed to be just the worlds where you go to the North End, narrowing the claim. (55) would then be interpreted as follows:

- (i) In the worlds where you go to the North End, to get good cheese, you don’t have to do anything other than going to the North End.

If we could incorporate the presupposition into the restrictor of the modal, deriving (70), we could have our cake and eat it too, so to speak, because the assertion would be that we don’t have to do anything other than going to the North End in the worlds where we go to the North End. Our problem is that we do not feel comfortable with this process of incorporating the presupposition into the restrictor of an operator. Not just for the case of the SMC but in general.

In fact, local accommodation into a quantifier restriction has been a matter of dispute, see Beaver (2001), von Stechow (2004), Geurts and van der Sandt (1999), among others for discussion. Here is a simple example, taken from von Stechow (1995), that shows what can go wrong with incorporating presuppositions in the restrictor of an operator. Consider the following sentence:

- (ii) Every man loves his wife.

This sentence presupposes that we quantify over a domain in which all men are married, otherwise the sentence suffers from presupposition failure. In other words, (ii) makes sense only if we can make it be about married men only. The process of local accommodation (whereby presuppositions are incorporated in the restrictor) would have (ii) be equivalent to:

- (iii) Every man who has a wife loves his wife.

But are (ii) and (iii) in fact equivalent? They are not. Contrast the following two pairs:

- (iv) a. Not every player on the team is married
b. #But everyone loves their spouse
- (v) a. Not every player on the team is married
b. But everyone who is married loves their spouse

If (ii) and (iii) were equivalent, as the process of local accommodation would have it, then we would predict, contrary to fact, that there should be no difference in the discourses in (iv) and (v). Since there is a clear difference, (ii) and (iii) are not equivalent. For reasons like these, we cannot appeal to the process of local accommodation in the SMC with a clear conscience. We would prefer to do without this mechanism. This means that we cannot appeal to Horn’s 1969 presupposition of *only* to derive what we want, since we would have needed local accommodation to obtain our goal.

- (71) (QUE Jean) P:
 A: $\exists y (y \neq \text{Jean} \ \& \ P(y) = 1)$
 P: $\exists x (P(x) = 1)$

As we noted before, in unembedded cases, this weaker presupposition makes no new predictions. The assertion together with the weaker presupposition entail that the prejacent is true:²⁴

- (72) Je n'ai vu que Jean.
 A: I did not see anybody other than John
 P: I saw someone
 \Rightarrow I saw John

But there are significantly different predictions when there are embedding operators present. Consider what we predict for the SMC:

- (73) tu n'as qu'à aller à North End.
 A: in some of the good cheese worlds you don't do anything other than going to the North End
 P: in all of the good cheese worlds you do something

Now we have finally avoided the Prejacent Problem. We do not anymore predict that you have to go to the North End. The presupposition is the weak (and surely trivial) claim that to get good cheese you have to do something.²⁵

So, what we remain with is the assertion that in some worlds where you get good cheese you do something but not anything other than going to the

24 This is not entirely true as it stands. Take a sentence like "I didn't see anybody other than John and Peter." This together with the presupposition that I saw someone does not entail that I saw John *and* Peter — instead, it only entails that I saw John *and/or* Peter. The problem lies in the fact that we have to understand "other than" as really meaning non-overlap and not non-identity. Otherwise, "I didn't see anybody other than John and Peter" would entail that I didn't see John and that I didn't see Peter, which would obviously be absurd. But this then means that "I didn't see anybody other than John and Peter" is actually compatible with me seeing just Peter — perhaps not the best kind of prediction. We might solve this problem by adding considerations about quantity implicature to the mix. A speaker who had only seen John should say "I didn't see anybody other than John" rather than "I didn't see anybody other than John and Peter" because the former is a stronger statement than the latter. We'll live with this fix and leave it open whether implicature considerations could be used in place of presuppositions in other places in our analysis — a topic that is of course the focal point of much work on *only*.

25 The *LI* reviewer asks whether this characterization of the presupposition (that you have to do something to get good cheese) is in fact adequate in light of examples such as the following.

- (i) To make your way up in this organization, you only have to sit perfectly still and do absolutely nothing.
- (ii) To be eligible for this job, you only have to have an IQ of 40 and intimate personal relationship with the boss.

North End, i.e. not anything that is not part of going to the North End. In other words, going to the North End is a sufficient but not necessary way of getting good cheese.

Let us spell this out one more time. We assume that a sentence like *he didn't see anyone other than John* presupposes that he saw someone and asserts that there is nobody distinct from John that he saw. Taking the presupposition and assertion together, we can infer that he saw John. Now, in the SMC we have the claim that *you don't have to do anything other than go to the North End*. This presupposes that you have to do something and asserts that it is not the case that in all of the worlds you do something other than going to the North End. From this, it cannot be inferred that in all of the worlds you go to the North End. The prejacent cannot be inferred. The reason is that we have split the scope of NEG and QUE across the universal modal.

So it seems that with accepting the presupposition of Horn 1996 for *only* and transposing it to NEG + EXCEPTIVE, we get exactly what we want in the SMC.²⁶ But we are not done yet. We still need to talk about the languages that

The idea is that in (i), it is explicitly asserted that you don't have to do anything. We reply that you are told that you have to sit still, which is doing something, albeit not something very dynamic. In (ii), the notion of "doing" is perhaps even less obviously applicable (except that one wonders what happens in that intimate relationship). In any case, using the concept of "doing" is a possibly misleading artefact of our informal paraphrase of the official semantics. Formally, the presupposition is truly trivial: that in all of the worlds where the goal is achieved, *you have some property or other*.

26 Not all exceptives can appear in the particular form of the SMC we have been using. Greek has two exceptives, *para* (which is what we have been using so far) and *ektos*. If we replace *para* with *ektos* in our examples, ungrammaticality results:

- (i) ...*dhen echis ektos na pas sto North End.
 ...NEG have EXCEPT NA go to the North End

Similarly in French, the exceptives *sauf* and *à part* cannot replace *que*:

- (ii) a. ...*tu n'as sauf aller a North End.
 b. ...*tu n'as à part aller a North End.

The same question arises for all the other languages that we have seen employing NEG + EXCEPTIVE in the SMC. That is, all of these languages have more than one exceptive word, yet only one of them is used in the SMC. Why would this be? It turns out that the answer to this question is the same for all languages for which it arises: The exceptives that are good in the forms of the SMC we have considered so far can all occur "hostless". The host of an exceptive is the quantifier that the exceptive operates on (von Stechow 1993). In (iii) the emphasized item is the host:

- (iii) a. *Every boy* except John left.
 b. *No boy* except John left.

The Greek exceptive *ektos* and the French exceptives *sauf* and *à part* can never be hostless, unlike *para* and *ne ... que*:

- (iv) Dhen irthe para o Yanis sto parti.
 NEG came except the Yanis to-the party

do the SMC with *only*. We'll get to that soon. First we would like to alleviate a worry that the reader might have at this point.

3.1.5 *Intervention* Note that we have split the SMC into three different operators: NEG > necessity > “something other than”. We would not have derived the desired result if we had treated the NEG + EXCEPTIVE construction as an indivisible logical element meaning “nothing other than”. In our analysis, the negation and the existential “exceptive” are separable.²⁷ But we also said that the relation between negation and QUE is an NPI-like licensing relation. One might think that there is a contradiction here. The NPI-licensing relation is known to be subject to intervention effects, originally captured in Linebarger’s Immediate Scope Constraint Linebarger (1980).

Consider for example:

(74) Mary didn’t wear any earrings at every party.

Reading 1: There is no particular earring Mary wore at every party. (NEG > NPI > every)

Reading 2: At every party Mary wore no earrings. (every > NEG > NPI)

Reading 3: Not at every party were there any earrings Mary wore. (*NEG > every > NPI)

‘Nobody came to the party except John’

(v) Dhen irthe *(kanenas) ektos apo ton Yani sto parti.
NEG came *(anyone) except from the John to-the party

(vi) Je n’ai vu que Jean.
I not have seen except John

(vii) Je n’ai vu *(personne) à part / sauf Jean.
I not have seen *(anyone) except Jean

This obviously raises the question of the possibility of constructing an SMC with an exceptive that requires a host. This is indeed possible once we add a host:

(viii) An thes kalo tiri, dhen chriazete na kanis tipota alo ektos apo to na pas
If want good cheese, NEG need NA do anything other except from the NA go
sto NE.
to-the NE

And it is possible even for English:

(ix) To find good cheese you do not have to do anything other than go to the North End.

In other words, once we place more lexical material in the sentence, permitting thereby the appearance of a wider selection of exceptives, then more languages can be put in the NEG + EXCEPTIVE category, though some residual issues remain. See von Stechow and Iatridou (2005) for more details on this.

²⁷ This is a crucial difference between our assumptions and those made by Dekydtspotter (1993).

Note that while the relative scope of *every* and *not* + NPI is variable in (74), Reading 3 (where the scope of negation and the NPI is split) is unavailable, that is, there is no reading where a scopal element scopes in between negation and the NPI.

While Linebarger herself does not go into the question of why the Immediate Scope Constraint should hold, Guerzoni (to appear) argues that the Immediate Scope Constraint is an intervention effect at LF, similar to so-called Beck effects (Beck 1996). In particular, NPI-licensing is a relation that needs to be checked locally, either by QRing the NPI to its licenser or by covertly moving a feature from the NPI to its licenser. Logical operators such as the universal quantifier *every party* act as barriers for feature movement, which means that the NPI needs to QR to its licenser. This explains why in examples such as (74), negation + NPI acts as one semantic unit.

Now it should be clear that our analysis might look problematic. We crucially assume that the necessity modal in the SMC has logical scope between negation and the existential exceptive QUE-phrase. One might have thought that this contradicts the Immediate Scope Constraint. In response to this worry, we would like to show that modal operators do not behave as interveners for the NPI-licensing relation. Consider:

(75) You didn't have to bring anything.

Note that (75) means that it was not necessary for you to bring something. It does not mean merely that there was nothing that it was necessary for you to bring. The latter could have been true while it was also true that you had to bring something (without it mattering what in particular you brought). In other words, (75) does have the stronger meaning that results from the scoping negation > necessity > *anything*.

So, modals do not block the NPI-licensing relation and our conclusion in this section is not imperiled by concerns about the Immediate Scope Constraint.²⁸

²⁸ In Guerzoni's terms, this means that feature movement is possible across a modal from an NPI to its licenser, without the NPI having to scope over the modal.

It is interesting to explore for a moment whether modals serve as "Beck interveners" or not. We suspect that they don't there either. In fact, in David Pesetsky's book (Pesetsky 2000), he discusses a relevant set of examples (verbatim his (99) on p.61):

- (i) *Intervention effect with not — nonsubjects*
 - a. Which issue should I not discuss ____ with which diplomat?
 - b. ??Which diplomat should I not discuss which issue with ____?
[cf. *Which diplomat should I discuss which issue with ____?*]

For Pesetsky, the crucial point here is that negation in (ib) blocks the pair-list reading for the example, because it prevents the in situ *wh*-phrase from raising at LF. He presents a minimal contrast without negation to show that the pair-list reading emerges without any problem. What is important for us is that the example without an intervention effect still contains a deontic

3.2 The “Only” Languages

3.2.1 *Decomposing Only* In the previous sections, we investigated the SMC in what we called the NEG + EXCEPTIVE languages. Now it is time to turn to what we had called the “only”-languages, exemplified here with English:

(76) If you want good cheese, you only have to go to the North End.

We all know how thrilling it is to be able to claim that two groups of languages are basically alike in areas where they look dissimilar at the surface. So let’s try to see if we can make it happen here.

Recall that in the NEG + EXCEPTIVE languages we have found that the SMC contains the following scopal order of three elements:

(77) NEG > modal > (∃ other than)

On the other hand, the *only*-languages contain only two elements: the modal and *only*. We saw in an earlier section that only the modals that scope under negation can appear in the SMC. Presuming that *only* is affective enough (in the Klima sense), this would mean that the scopal order of *only* and the modal would have to be as follows:

(78) *only* > modal

But still, (78) is a far cry from (77). Moreover, simply being “affective” is not enough to bring about an SMC reading, since not all affective elements can pull it off. The following lack an SMC reading, even though the modal appears in environments where NPIS are licensed:

(79) a. Everybody who has to go to the North End . . .
b. You can get good cheese without having to go to the North End.

So (78), as it stands, doesn’t quite do the job. What we will propose is that *only* should be decomposed into two elements, a negation, and the quantificational element “∃ other than”. Such a decomposition clearly fits the garden variety environments of *only*:

(80) a. Only John was in the room.
b. Presupposition: Someone was in the room.
c. Assertion: It’s not the case that there was someone other than John in the room.

should, which obviously does not induce an intervention effect, even though it is a quantificational element under standard semantic analyses.

We refrain from speculation about what the fact of the non-intervening nature of modals has to contribute to existing analyses of intervention effects.

Decomposing *only* in this way will bring us a tad closer to assimilating the *only*-languages to the NEG + EXCEPTIVE languages, since now we will have three elements to play with. That is, instead of (78), we have (81):

(81) (NEG + \exists other than) > modal

Unfortunately, we still face one of our biggest hurdles, namely the Prejacency Problem. Consider our initial SMC, repeated in (82). With the decomposition of *only* that we are contemplating, (82) would be equivalent to (83), given the scopal order in (81).

(82) ... You only have to go to the North End

(83) ... There is nothing other than [go to the North End] that you have to do

But the Prejacency Problem raises its not-so-pretty head again, since (83) entails that you have to go to the North End, a meaning component that is wrong for the SMC as we have seen, given that the SMC says that going to the North End is a sufficient, not a necessary, condition to get good cheese.

So what do we need to do? The answer is, in a way, simple: we need to make the *only*-languages look exactly like the NEG + EXCEPTIVE languages. That is, it's not enough to decompose *only* into two elements, we have to split its scope. We have to turn (78)/(81) into (84):

(84) NEG > modal > \exists other than

This will make the *only*-languages identical to what the NEG + EXCEPTIVE languages carry on their sleeve and it will make the Prejacency Problem go away.

But is it possible to do what we propose? Can we decompose an element and split its scope? We address this question next.²⁹

3.2.2 Negative Split Since Jacobs (1980), there has been discussion of a phenomenon widely known as *negative split*. The general idea is that a negative determiner like *no* splits into two elements, negation and an existential quantifier, with negation always outscoping the quantifier:

(85) no = NEG + \exists

The reason that there is even suspicion that *no* should be decomposed like this is that sometimes the two elements can be seen as scoping across another scopal element, which means that the scope of *no* has “split”:

²⁹ We should note that while we show in the following that it makes sense to allow *only* to split, there are some open issues. First, note that splitting will have to be obligatory with goal-oriented modals, since our paradigm sentence cannot be read as requiring one to go to the North End, if one wants good cheese. Second, splitting will have to be impossible with deontic modals, as we show in von Stechow and Iatridou (2005: Section 5.5).

(86) NEG > scopal element > \exists

The biggest part of the literature on negative split focuses on Dutch and German.³⁰ To illustrate the phenomenon, we start by borrowing from the discussion by Rullmann (1995). Rullmann is a representative of the “lexical decomposition” approach to negative split.³¹

According to Rullmann, in Dutch, there is an incorporation rule à la Klima, as in (87):

(87) *niet* (NEG) + Det_{indef} \Rightarrow *geen*

Rullmann is not explicit about the specifics of this incorporation but he says, at LF, the two elements can be separated from each other again. When the two elements go their separate ways at LF, we get negative split, henceforth NS. We will be glossing *geen* with English *no*, without making any claims about the splittability of English *no*.

NS can happen and result in negation scoping over a modal element, with Det_{indef} scoping under this same modal element. Take for example, the Dutch universal modal *hoeven*, which must scope under negation, due to its NPI-like nature (for this reason we are glossing it as *need*, the closest that English has to an NPI modal). As a result, (88) cannot mean (89):

(88) Ze *hoeven* *geen* *verpleegkundige* *te* *onstlaan*.
they need no nurse to fire

(89) It is necessary that they fire no nurse.

One way to get *hoeven* under negation is the reading in (90):

(90) For no nurse x does the following hold: it is necessary that they fire x .

This is indeed a possible reading of (88) and it can be truthfully uttered in a context where it was claimed that there might be a specific nurse that has to

30 Only limited negative splitting has been reported in English (Larson et al. 1997, Potts 2000) — see also Heim (2000), although she doesn't end up endorsing a split-based analysis. Here is an English example where the scopal element in question would be a modal:

- (i) I need no secretary. (ambiguous)
- (ii) I need to have no secretary.
- (iii) NEG I need [\exists (secretary) λx . PRO to have x]

If we're right about the proper analysis of the SMC in *only* languages involving a scope split of *only*, we can add another item to the catalogue of negative split phenomena, one that English fully participates in.

31 See Geurts (1996) and de Swart (2000) for approaches based on higher-type entities, and Penka and von Stechow (2001) for an approach based on an abstract negation. See Penka and Zeijlstra (2005) for a very recent paper, which we have not had the chance to study.

be fired. According to reading (90), there is no such specific nurse. But by far the most salient reading of (88) is the one that asserts the following:

(91) It is not necessary that they fire a nurse.

In this reading the scopal relations are negation \succ modal \succ Det_{indef}. For this reading to be possible, *geen* must have undergone NS.

Another type of negative split example possible in Dutch and German depends on the fact that in these languages (as in English) sentential negation on the surface right of a universally quantified subject can scope over the subject (under the right conditions, see Büring (1997)). Here is an example from German:

(92) Jeder Arzt ist nicht anwesend.
every doctor is not present
'Not every doctor is present.'

We can now set up examples with NS where negation outscopes the universally quantified subject while the indefinite determiner scopes under the subject:

(93) Jeder Arzt hat kein Auto.
every doctor has no car
'Not every doctor has a car.'

We would like to remain agnostic about the actual mechanics of negative split. What is important for us is that the phenomenon exists and that another negative-like element, namely *only*, can be reasonably described as undergoing it.

3.2.3 Negative Split of Only In Section 3.2.1, we proposed that the scope of *only* splits, as evidenced by the behavior of this element in the SMC. This move also permitted us to assimilate the *only*-languages to the NEG + EXCEPTIVE languages. We suggested that this was part of a larger phenomenon, often referred to as “negative split”. In Section 3.2.2, we gave a short overview of some of the basic relevant data and gave an example of one basic type of approach that has been suggested. In this section, we return to discussing in more detail the “splitting *only* hypothesis”.

Can we find more evidence that *only* splits in the way we suggest? One problem with finding incontrovertible evidence is that in many environments, *only* and its associate can take sentential scope with the same meaning as splitting *only* would yield. Take for example the modal element *may*, which is ambiguous between an epistemic and a deontic reading:

(94) a. He may be home by now. (epistemic)
b. He may go to the movies. (deontic; permission)

On the other hand, there appear to be some outright difficulties for the splitting *only* hypothesis. We saw earlier that elements like German *kein* and Dutch *geen* can split and take scope over a universal quantifier in the subject position:

- (100) Jeder Arzt hat kein Auto.
 every doctor has no car
 'Not every doctor has a car.'

If *only* splits, then we would expect it to split in the following cases and bring about a reading where negation scopes over the universal quantifier and *other than* scopes under it:

- (101) Iedereen heeft maar één auto. (Dutch)
 Everyone has only one car
- (102) Jeder Arzt hat nur ein Auto. (German)
 Every doctor has only one car

That is, we would expect the scopal order negation > universal > *other than*, which means that (101)/(102) would be predicted to mean (103):³³

- (103) Not everyone has other/more than one car.

The problem is that this reading is not available. The Dutch and German sentences only have the non-split reading according to which everyone has only one car. Is this fatal for the splitting *only* hypothesis?

To answer this, we have to first go back to the NEG + EXCEPTIVE languages, where the elements making up *only* so to speak, are separate items. In both Greek and French, sentential negation can take scope over a universal quantifier in the subject:

- (104) Oli i anthropi dhen echun aftokinito.
 all the people NEG have car
 'It's not the case that all people have cars' NEG > \forall
- (105) Tout le monde n' a pas une voiture.
 all the world has NEG a car
- (106) Tout le monde ne veut pas partir.
 all the world wants NEG leave
 'Not everyone wants to leave.'

So in Greek and French, negation can scope over a universal quantifier in the subject when we are dealing with plain sentential negation.

³³ Note that when *other than* compares numbers, it gets to mean the same as *more than*.

However, when we are dealing with the negation that is part of the Greek *dhen + para* construction or the French *ne + que* construction, negation cannot take scope over a quantifier in the subject position:

- (107) Oli I anthropi dhen echun para ena aftokinito.
 all the people NEG have PARA one car
 ‘all the people have only one car’ universal > NEG
- (108) Kathe kathigitis dhen echi para enan voitho.
 every professor NEG has PARA one assistant
 ‘every professor has only one assistant’ universal > NEG
- (109) Tout le monde n’ a qu’ une voiture.
 all the world NEG has QUE one car
 ‘Everyone has only one car’ universal > NEG
- (110) Tout le monde ne voit que des oiseaux.
 all the world NEG sees QUE of-the birds
 ‘Everyone sees only birds’ universal > NEG
- (111) Tout le monde ne veut que partir.
 all the world NEG wants QUE leave
 ‘Everyone only wants to leave’, ‘Everyone wants only to leave’

If negation could have scoped over the subject quantifier then sentence (109) for example could have had the reading ‘It is not the case that everyone has more/other than one car’. And (110) could have meant ‘It is not the case that everyone sees more/other than birds’. But these readings are clearly unavailable.

So here is where we are: We are proposing the splitting *only* hypothesis. But then we saw that *only* does not split in environments where negative split (or just wide scope of negation) is easily available. However, it turns out that in NEG + EXCEPTIVE languages, even though negation can in general scope over a quantified subject, negation cannot scope over a quantified subject when it (negation) is part of the NEG + EXCEPTIVE construction. This means that the fact that *only* can’t split across a quantified subject is not an argument against the splitting *only* hypothesis, since “naturally decomposed” *only*, namely NEG + EXCEPTIVE, cannot split across a quantified subject either, even in languages where negation otherwise can scope over a quantified subject. In short, the facts are not fatal to the splitting *only* hypothesis.

Let us see what else we can learn from this picture. Why would negation not be able to be separated from the exceptive phrase? That is, why is (112) impossible?

- (112) *NEG > quantifier > QUE

Note that this question is the same for both the *only* and the NEG + EXCEPTIVE languages.

Actually, we have already seen the explanation for the impossibility of (112): in Section 3.1.5, we proposed that the reason is that the QUE-phrase is (or contains) an NPI (\exists_{NPI} *other than*) and that (112) is unacceptable because of an intervention effect (an instance of Linebarger’s Immediate Scope Constraint).

The natural extension of what we said about NEG + EXCEPTIVE then is that the reason that *only* does not split across a universal subject is that one of the elements that *only* splits into (namely \exists_{NPI} *other than*) is an NPI. For this reason it cannot be separated from its licensing negation by the intervening universal quantifier.

An additional argument that *only* doesn’t split across a quantified subject because of an intervention effect on NPI licensing are the following facts, which do not involve splitting. We have seen many times by now that negation can scope over a quantified subject. It turns out that this is not possible when the VP contains an NPI.

- | | | | |
|-------|----|---------------------------------------|-----------------|
| (113) | a. | Everyone didn’t leave. | NEG > universal |
| | b. | ?Everyone didn’t eat anything. | universal > NEG |
| (114) | a. | Everyone has not been to Paris. | NEG > universal |
| | b. | ?Everyone has not ever been to Paris. | universal > NEG |

In fact, for quite a few speakers the effect is even stronger in that the b-variants are degraded sentences. This presumably means that for these speakers sentential negation really prefers to scope over the quantified subject and when this conflicts with the licensing of an NPI, the sentence becomes unacceptable.

The same facts hold in German:

- | | | |
|-------|--|--|
| (115) | Jeder Student ist nicht gekommen. | |
| | every student is not come | |
| | NEG > universal (universal > NEG also possible) | |
| (116) | Jeder Student hat nicht mit der Wimper gezuckt. | |
| | every student has not with the eyelash twitched. | |
| | universal > NEG | |

In other words, even in environments where negation can scope over a quantifier subject, a quantifier cannot separate negation from the NPI. So the reason that *only* cannot split across a universal quantifier subject is not an argument against *only* splitting but is the result of the fact that one of the elements that *only* splits into is an NPI. We saw the very same facts in NEG + EXCEPTIVE languages.³⁴

³⁴ We may need to remind even the careful reader that we observed in Section 3.1 that the relation between NEG and the NPI QUE-phrase is not disrupted by modals, in other words: modals do not create intervention effects for NPI-licensing including the NEG-QUE relation.

We would like to add to this now the reinforcing observation that again the two groups of languages behave alike since also in the NEG + EXCEPTIVE languages, a modal can separate negation

4 Sufficiency, Easiness, and More

Having presented our solution to the compositionality puzzle raised by the SMC, we will now address three points that arise.

4.1 Sufficiency?

We have called our construction the Sufficiency Modal Construction, but a careful look at our semantics will reveal that we do not seem to give it a sufficiency semantics, in the customary logical sense of “sufficiency”.³⁷ In logical parlance, ϕ is a sufficient condition for ψ iff whenever ϕ is true, ψ will also be true.

So, look again at our paradigm example. We say that *to get good cheese, you only have to go to the North End* means that in *some* of the worlds where you get good cheese, nothing other than you going to the North End happens. This is a far cry from saying that whenever you go to the North End, you get good cheese. In the following subsections, we will explore the fact that

In the English sentence, the use of *only* conveys that 11 is late. On the contrary, no such thing happens in Greek. The Greek sentence is somewhat non-sensical as it conveys that the only time at which John arrived was 11pm.

There is a topological parallel:

- (ii) o Yanis erchete apo tin Kalifornia me to treno. Ala aftin tin stigmi ine mono
the John comes from the California with the train. But this the moment is only
sto Chicago. Dhen tha ftasi eggeros ya ton gamo.
in the Chicago. NEG FUT arrive on time for the wedding
'John is coming from California by train. At this point, he is only in Chicago. He will not
arrive in time for the wedding.'

Greek appears to have evaluative uses of its *only* but Condoravdi points out that this is possible only with items that are scalar by themselves. (e.g. 'She is only 4 years old', 'He is only a soldier', etc.) Condoravdi's suggestion may well point to the crucial difference between languages that build an SMC with *only* and those that cannot.

But things get even more mysterious because at least in Greek, while *only* cannot form an SMC with the possessive modal, it can do so with the equivalent of *need*. And there is a further complication that appears when SMC is constructed in a relative. Greek, as we said above, cannot form an SMC with the possessive modal and *only*:

- (iii) *...echis mono na pas sto North End.
...have-2sg only NA go to the North End

However, in a DP, this attempt succeeds without problem:

- (iv) ...to mono (pragma) pu echis na kanis ine na pas sto North End.
...the only (thing) that have-2sg NA do is NA go to the NE
'... the only thing you have to do is go to the North End'

Since we cannot explore the SMC in a DP in the current context, we will have to leave also the contrast between (iii) and (iv) as a mystery for now.

³⁷ This feature of our analysis was highlighted as a potential problem for us by Janneke Huitink. We thank her for her comments.

our semantics falls short of logical sufficiency and we will suggest that our semantics does in fact capture the meaning of the SMC correctly (and also that it is not completely misleading to call it a sufficiency construction).

4.1.1 Additional Requirements First of all, our semantics captures the obvious fact that just going to the North End won't do for getting good cheese. You will have to enter a store, pick out some cheese, pay for it, etc. This is covered by treating those additional required actions as not "other than" going to the North End, that is, as natural parts of going to the North End. We submit that it is right that our semantics does not deliver logical sufficiency here.

We would like to point out that even examples that use expressions that explicitly introduce the notion of sufficiency do not convey logical sufficiency. We find that the following variants of our sentence still do not convey that going to the North End is by itself logically sufficient for getting good cheese:

(117) To get good cheese, it is enough to go to the North End.

(118) To get good cheese, it suffices/it is sufficient to go to the North End.

In the end, this should not be surprising. Natural language expressions rarely correspond in their meanings to the stripped down meanings that simple logical systems traffic in. Since these explicit expressions of sufficiency have the same meaning as our SMC, we conclude then that we did not misname the Sufficiency Modal Construction, even though the meaning it carries does not convey logical sufficiency.

4.1.2 Causal Conjunction By the way, we have found that the causal conjunction variant of the SMC seems to convey something much closer to logical sufficiency. Consider the following contrasts:

(119) If you want to learn what Morris is working on, you only have to go to the Stata Center.

(120) To find out what Morris is working on, you only have to go to the Stata Center.

(121) You only have to go to the Stata Center and you will find out what Morris is working on.

There is a difference in meaning between (119)/(120) on the one hand and the causal conjunction in (121) on the other. In (119)/(120), you can go to the Stata Center without necessarily finding out what Morris is working on — because one would also have to do some obvious additional steps, asking someone about Morris for example. On the other hand, in the causal conjunction, going to the Stata Center will bring about the inescapable result of learning what Morris is working on. The sentence conveys that by the very fact of setting foot inside the Stata Center, you will learn what Morris is working on — for

example: because everybody is talking about it or because there is a huge sign on the wall or for some other reason. That is, going to the Stata Center will immediately cause you to learn what Morris is working on.

We have to admit that we do not know precisely how the causal conjunction variant of the SMC acquires this meaning, a meaning that is so much closer to logical sufficiency than the other variants. We leave this to (our) future research on the conjunction variant.

4.1.3 That's enough There remains a worry. Our semantics seems to fail to match the intuitive meaning of the SMC because it seems to be compatible with there being worlds where you go to the North End *and* do all the other obvious actions but still don't get good cheese. Saying that some good cheese worlds are worlds where you go to the North End (and do the obvious right things) does not entail that *all* of the worlds where you go to the North End (and do the right thing) are worlds where you get good cheese. But the latter does seem to be what the SMC conveys.

Actually, we would like to argue that our semantics does deliver the stronger meaning, against first appearances. The reason is that the worlds we are quantifying over are all supposed to be the same as far as the relevant circumstances are concerned. That is, all the relevant conditions in these worlds are the same as in the evaluation world. So, if in some of the worlds going to the North End (and doing the right thing) leads to getting good cheese, then it will do so in all of the worlds. In other words, for this kind of modality, existential and universal force collapse into the same meaning.

Let us illustrate this point. Imagine that to get to a certain island, one can either take a ferry, or swim across the channel, or cross the new and very convenient bridge. So, we would be likely to say that these days *to get to the island, you only have to cross the new bridge*. According to our semantics, this claims that in some of the accessible worlds (where therefore the geographical circumstances and so on are the same as in the actual world) where you get to the island, you do nothing other than taking the new bridge. Is it now conceivable that there are worlds where you cross the bridge but do not get to the island? No, as long as geography etc. remains constant, crossing the bridge does take you to the island.

This line of thought predicts that one could express the meaning of the SMC with an existential teleological modal. We think that this is correct. Consider:

(122) If you want good cheese, you can (just) go to the North End.

We submit that (122) has the same meaning as our paradigm sentence.

A thorough and more formal investigation of these matters needs to await a future occasion.

4.2 *Easiness*

We saw in the beginning of the paper that one of the components of the meaning of the SMC is “easiness”. Consider our paradigm example again:

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

Roughly, (123) is uttered in order to convey that finding good cheese in Boston is easy. How is this achieved? We will argue that the easiness of the “suggested means” (going to the North End) is derived morpho-syntactically and that the easiness of the “stated goal” (getting good cheese) is achieved indirectly: if p is a way of achieving q and p is easy, this means that q is easy. That is, if the means to achieve a goal are easily accessible then the goal is easily achieved. This means that if going to the North End enables you to find good cheese and going to the North End is easy, per force getting good cheese is easy.

Both the NEG + EXCEPTIVE and *only*-constructions have “diminishing” functions outside the SMC, that is, they are associated with a scale and their focus is low on the relevant scale:

(124) He is only a soldier.

(125) Il n’est que soldat.

(126) dhen ine para stratiotis.

(127) Níl ann ach saighdiúir.
NEG+is in-him but soldier
‘He is only a soldier/he is nothing but a soldier.’

So it is not surprising that items like NEG + EXCEPTIVE and *only* create an easiness implicature when they appear in the SMC, by picking an element low on a scale, let us say a scale of effort.³⁸

What are the elements on this scale of effort? Is it the stated goal as compared to other goals? Is it the suggested means as compared to other means to achieve the stated goal? Is it the suggested means as compared to other possible actions in the world (i.e. not just compared to actions that achieve the same goal)?

The semantic composition we are proposing dictates that the easiness/effort scale ranks the suggested means compared to other possible actions in the world and not compared to other actions that achieve the stated goal. In our analysis, we have the following compositional structure:

³⁸ In fact, we might suspect that it is the common “other than” ingredient that creates the easiness effect. Note that the effect seems to persist in a periphrastic version of the SMC:

(i) If you want good cheese, you don’t have to do anything other than go to the North End.

- (128) (To achieve stated goal), NEG have to do \exists P other than suggested means

The suggested means is available as early as the lowest component of the analysis, namely the “other than” component, comes in. If easiness were sensitive to the stated goal, the easiness effect would have to be associated in a mysterious way with the entire construction.

So we argue that the SMC marks the suggested action as easy per se and not just relatively easy compared to other ways of achieving the goal. To see this, consider the following example:

- (129) To get the Noble Prize, you only have to find the cure for cancer.

Let us assume that finding the cure for cancer is, in fact, a way of getting the Noble Prize. Let us also assume that among the different ways there are to get the Noble Prize, finding the cure for cancer is the easiest. So, if the SMC just required the sufficient action to be *relatively* easy, (129) should be unremarkable. But it certainly feels “funny”, precisely because we all know that finding the cure for cancer is not easy at all. So, we take this to mean that the sufficient action is marked as easy per se by the construction. At the same time, we would probably not judge (129) as false in the scenario we sketched. Thus, easiness is not a truth-conditional entailment of the SMC but something like an implicature.

One more argument for this position (that easiness is not just comparing the suggested action to other actions that aim for the same goal) is the following. A scale has to contain more than one item, as it provides a comparative ranking. So, constructions that rely on a non-trivial scale will “complain” if there is only one member in the scale. Thus, we find sentences like *You are my tallest son*, said to a single offspring, anomalous. Now, imagine that there is only one way to achieve a particular goal. That is, imagine for (130) that there is no other way to enter the room and for (131) that there is no other way to reach the island.

- (130) If you want to get into that room, you only have to open that door.

- (131) To get to that island, you only have to take a half-hour ferry ride.³⁹

In the above contexts (when there is no other way to enter the room or to reach the island) these sentences are still fine. This means that the scales do not contain the one way to get to the room or the one way to get to the island — because if they did, these sentences would be funny as containing single-

³⁹ With a simple change, this example can be turned into one that makes the same point as the Nobel Prize example:

- (i) To get to that island, you only have to take a three day ferry ride.

element scales of comparison. These sentences are fine because the scales contain opening a door and taking a short ferry ride among the many other things that one can do in the world.⁴⁰

4.3 *More Than*

The analysis we have developed in this paper is this:

(132) (To get good cheese), you NEG have to QUE go to the North End,

P: In all of the worlds where you get good cheese you do something.

A: In some of the worlds where you get good cheese it is not the case that you do something other than going to the North End.

For a number of reasons, it might be thought that instead of using “other than” in the semantics of NEG + EXCEPTIVE, we could or should use “more than”. For one, we saw that the SMC seems to rate the ways of achieving the goal and zero in on the easiest, least effort involving way. For another, Spanish might be a clue to hit us in the head:

(133) No tienes más que ir al North End.
NEG have-to:2sg more than go to-the North End

Similarly, an English paraphrase with *more than* does not seem appreciably different in meaning from the SMC:

(134) (To get good cheese), you don’t have to do more than go the North End.

While French *que* certainly does not correspond to “more” in an obvious way, it is tempting to think that it is in fact the same “than” morpheme which appears

⁴⁰ Pranav Anand and Valentine Hacquard, independently, have urged us to consider scenarios such as the following. Imagine that we live in a town where good bread, made in artisan bakeries, is outrageously overpriced, at say \$10 per loaf. Now, in the grand scheme of things \$10 is not a large amount of money. But *for bread*, it is a lot. Consider now:

(i) To get good bread in this town, you only have to pay \$10.

It seems that (i) is funny, even though paying \$10 is not that hard in general. So, somehow the stated goal appears to be available in the rating of the suggested means, contrary to what we have been suggesting in this section. What we would like to point out is that just as (i) is funny, so is the following:

(ii) [returning from the bakery:] I only paid \$10.

We suspect that the “goal” can be pragmatically available even though it is not compositionally available (unless we resort to an ellipsis analysis and argue that the sentence is really *I only paid \$10 for the bread*).

in *plus que* (“more than”).⁴¹

So, should we reframe the SMC as involving “more than” in its semantics? What we would be considering is a semantics like this:

(135) (To get good cheese), you NEG have to EXCEPTIVE go to the North End.

P: In all of the worlds where you get good cheese you do something

A: In some of the worlds where you get good cheese it is not the case that you do something *more than* going to the North End

To evaluate the proposal, we need to get clear about what it would mean for something to be “more than” going to the North End. The obvious idea is that what we are comparing are amounts of effort. Something is more than going to the North End iff it involves more effort. With that assumption in place, what does (135) amount to?

Note that for now, we are assuming that the presupposition of “more than” would be the same existential presupposition that we had posited for “other than”. But then the assertion is too weak to assure us that going to the North End is a way of getting good cheese. Imagine (counterfactually, thankfully) that there is no good cheese in the North End and imagine (truthfully according to Boston Magazine) that the best cheese shop in Boston is the Wholefoods Market in Cambridge. Since going to the North End involves more effort than going to the Wholefoods Market a few blocks from our house, it will be true that in some of the worlds where you get good cheese (namely the ones where you go to Wholefoods) you don’t do anything more than going to the North End, in fact you do something *less than* going to the North End. So, in this situation, the sentence (135) would be predicted to be true. That’s not good. The SMC certainly claims that going to the North End is a way of getting good cheese and should not come out true when it isn’t.

The diagnosis, in other words, is that the semantics in (135) says that going to the North End is a measure of effort that is at least as high as the easiest way of getting good cheese. It does not at all demand that going to the North End itself is a way of getting good cheese.

What could we do to fix this serious shortcoming of (135) as an analysis of the SMC? We could go back to positing a stronger presupposition, namely that “you do something more than go to the North End” presupposes that you go to the North End. Then, we could combine this with the intermediate accommodation proposal we considered before in Footnote 23 and would get the following analysis:

(136) (To get good cheese), you NEG have to EXCEPTIVE go to the North End.

P: In all of the contextually selected worlds where you get good cheese

⁴¹ Similar considerations might apply to Greek *para*.

you go to the North End.

A: In some of the worlds where you go to the North End and get good cheese it is not the case that you do something *more than* going to the North End.

This proposal has at least two problems: (i) it relies on the dubious mechanism of intermediate accommodation, and (ii) it is not obvious that “more than” carries such a strong presupposition. We already gave reasons for not relying on intermediate accommodation in Footnote 23. Let us therefore elaborate on the second problem.

Imagine two friends arguing about their workload during the preparations for a big event:

(137) A: Look! I did a lot of work. I got all the catering figured out.

B: OK, but I did more than figuring out the catering. I got us two very recalcitrant keynote speakers.

There does not seem to be any problem here: B is not claiming (or presupposing) that he got two speakers *in addition to* doing the catering, he’s just saying that his contribution involved more effort than the catering. So, “more than” doesn’t seem to come with the strong presupposition that was assumed in (136).⁴²

We could therefore conclude that using “more than” as an alternative to “other than” in the semantics for the SMC is not feasible. But there is one further consideration: why does Spanish use *màs que* in the SMC and why does the English paraphrase with *more than* at least *sound* like an adequate rendering of the SMC?

We suspect that in the end, it may turn out that “more than” here means exactly the same as “other than”, namely that for p to be more than q it has to be the case that p is not part of q . In a part-whole hierarchy of actions one could say that “other than” and “more than” amount to the same notion.

In support, we would note that when Spanish says

(138) No vio màs que à Juan.

NEG saw:1sg more than PARTICLE Juan

“I saw only John.”

there is no meaning that I saw nobody heavier than John, or any other more run-of-the-mill comparative meaning. *Màs que* here simply has the normal exceptive meaning and we suspect it does in the SMC as well.

⁴² It might be possible to wriggle out of this quandary. Perhaps, “more than” has two meanings, the one in (137) where it has at most the weak presupposition that something was done and another one where it has a stronger presupposition. But we will not pursue this any further.

Conclusion

An unremarkable sounding sentence (*To get good cheese, you only have to go to the North End*) has turned out to involve an intricate interaction between negation, exceptives, and modals. We have argued that only an analysis that splits *only* into two ingredients and gives those differential scope with respect to the goal-oriented modal will be able to give a compositional semantics to the construction. The fact that this finally quite complex construction appears in so many languages continues to be puzzling. We hope that future research will further our understanding of this phenomenon.

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