NEG-raising does not involve syntactic reconstruction

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Abstract

NEG-raising concerns the phenomenon by which certain negated predicates (e.g. *think*, *believe*, *hope*) can give rise to a reading where the negation seems to take scope from an embedded clause. The standard analysis in pragma-semantic terms goes back to Bartsch (1973) and is elaborated in Gajewski (2005, 2007), Romoli (2013) and others. Recently, this standard approach has been attacked by Collins and Postal (2014), who argue, by providing some novel arguments, that NEG-raising involves syntactic movement of the negation from the embedded clause into the matrix clause. The syntactic structure of 'I don't think you're right' would then be: I do[n't]$_i$ think you're t_i right, and the NEG-raising reading would result from syntactic reconstruction of the negation.

In this talk I present four novel arguments against this account. First, following up work by Horn (2014), I show that Collins and Postal (2014), and their reply to Horn (Collins & Postal 2015), predict that every negated predicate that can license so-called Horn clauses (non-negative clauses containing NPIs and subject–auxiliary inversion) should receive a NEG-raising reading, contrary to fact. Second, Collins and Postal (2014) adopt phonological deletion of negative operators – a necessary ingredient for their account – but this cannot be independently motivated. Third, it turns out that for certain constructions, Collins and Postal (2014) must also allude to the original Bartschian approach. Finally, I demonstrate that the standard approach actually explains the grammaticality of Horn clauses better than the syntactic alternative presented by Collins and Postal (2014).

1 Introduction

NEG-raising concerns the phenomenon, illustrated in (1), by which certain negated predicates (e.g. *think*, *believe*, *hope*) can give rise to a reading where negation seems to take scope from the embedded clause: for instance, (1)a may have a reading (1)b. The standard analysis, which treats NEG-raising in pragma-semantic terms, goes back to Bartsch (1973) and is elaborated in Gajewski (2005, 2007), Romoli (2013), among many others. Under this approach, NEG-raising predicates such as *think* come along with an excluded middle or homogeneity presupposition. The predicate *think p* presupposes that either one thinks that p, or one thinks that not p. Applying this to (1), (1)a presupposes that the speaker either thinks you're right or thinks that you're not right. Together with this presupposition, (1)a entails (1)b.

(1) a. I don't think you're right
b. I think you're not right

Recently, the standard approach has been attacked by Collins & and Postal (2014, henceforward CP14), who argue that NEG-raising involves syntactic movement of the negation from the embedded clause into the matrix clause (a proposal tracing back to Fillmore 1963). The syntactic structure of (1) would then be as in (2), and the reading (1)b would follow from reconstruction of the negation (<NEG> indicating a lower copy/trace of NEG).

(2) I do NEG think you're <NEG> right

CP14 provide a series of arguments in favour of the syntactic approach and against the standard pragma-semantic approach, which I will briefly outline in the next section. Then, in section 3, I will discuss several problems concerning the syntactic approach that would rather call for reinstalling the standard, pragma-semantic approach to NEG-raising. In section 4, I furthermore show that, upon closer inspection, the arguments presented in section 2 in favour of the syntactic approach actually involve facts that are better explained by the standard, pragma-semantic approach.

2 Arguments in favour of the syntactic approach

The two most important arguments by CP14 center around the licensing of embedded strict Negative Polarity Items (NPIs) by negated NEG-raising predicates and the possibility of negated NEG-raising predicates to embed so-called Horn clauses. Both arguments indicate that the negation present in a higher clause must have started out in a lower clause.

Strict NPIs, such as *until* or *breathe a word*, differ from other, non-strict NPIs (such as *any* or *ever*) in the sense that the licensing of the former (3)–(4) but not the latter (5) are subject to syntactic locality constraints, such as clause boundedness.

(3) a. Carolyn will *(not) breathe a word about it
b. *Stanley doesn't predict that Carolyn will breathe a word about it

(4) a. Calvin didn't / *moved in until June
b. *Calvin didn't claim that Mona moved in until June

(5) a. Stanley *(doesn't) predict that Carolyn will say anything about it
b. Calvin didn't claim / *claimed that Mona ever moved in

Strikingly, a negated NEG-raising predicate may license embedded strict NPIs, suggesting that the negation must have started out clause-internally to license the NPI before it raises into the matrix clause:

(6) a. Stanley doesn't believe that Carolyn will breathe a word about it
b. Calvin didn't think that Mona moved in until June

Further evidence for such a raising analysis comes from the fact that once the embedded clause forms a syntactic island, from where extraction is forbidden, this licensing is no longer possible, as is illustrated for topic islands in (7).

(7) a. *That Carolyn will breathe a word about it Stanley doesn't believe
b. *That Mona moved in until June Calvin didn't think

Perhaps even stronger evidence in favour of a raising analysis comes from Horn clauses. Horn clauses are clauses where an NPI in Spec,CP triggers subject–auxiliary inversion. Such clauses are fine under negated NEG-raising predicates.

(8) a. I *(don't) think that ever before have the media played such a major role in a kidnapping
b. She *(doesn't) suppose that under any circumstances would he help me

However, subject–auxiliary inversion is generally only allowed by (semi-)negative elements in Spec,CP. The availability of Horn clauses under negated NEG-raising predicates shows that the negation must have started out in the Horn clause itself. For CP14, those sentences have underlying structures with an abstract negation starting out in the embedded clause, with the abstract negation raising into the matrix clause, where it gets phonologically realized as *n't*. If the negation had not raised, it would have been incorporated into the NPI (with the realizations *never before* and *under no circumstances,* respectively).

For CP14, the licensing of strict NPIs and Horn clauses forms strong evidence for a syntactic approach to NEG-raising. And indeed, the existence of such examples has not been explained by any other account to NEG-raising. However, a major challenge for any syntactic approach to NEG-raising comes from NEG-raising readings triggered by negative indefinites. The example in (9) has a reading saying that everybody supposes that nuclear war is not winnable (until next year). The fact that *until next year* can be licensed by *nobody* reveals for CP14 that negation must have started out below as well.

(9) Nobody supposes that nuclear war is winnable (until next year)

But if *nobody* is the realization of a negated indefinite (NEG ∃), the predicted reading would then be that somebody supposes nuclear war is not winnable (until next year), contrary to fact. Note that this is not a problem for the standard approach to NEG-raising; the excluded middle presupposition plus the assertion jointly entail the attested NEG-raising reading. CP14 acknowledge this fact and to solve this problem claim that constructions like (9) contain in total three negations:

(10) NEG_1 PERSON NEG_2 supposes that nuclear war is NEG_3 winnable (until next year)

Example (10) indeed has the attested NEG-raising reading. For CP14, the lower negation (NEG_3) then raises into the matrix clause NEG_3, using <…> to indicate lower copies of moved elements:

(11) NEG_1 PERSON NEG_2 NEG_3 supposes that nuclear war is <NEG_3> winnable (until next year)

Finally, CP14 postulate a mechanism by which in particular cases two negations in the same clause can be phonologically deleted under a downward entailing operator. Using ~~strikethrough~~ as an indicator for phonological deletion, (11) then becomes (12), which is phonologically realized as (9).

(12) NEG_1 PERSON ~~NEG_2 NEG_3~~ supposes that nuclear war is <NEG_3> winnable (until next year)

Naturally, the most stipulated step here is the presence of two negations that are phonologically zero. However, for CP14 this step can be motivated because (i) one negation must have started out below (given the licensing of Horn clauses and strict NPIs) and (ii), as they claim, there is

independent evidence for unpronounced negations.

3 Problems for CP14

CP14's proposal is an important contribution to the understanding of NEG-raising, but also faces several challenges. First, as pointed out by Horn (2014), it is not the case that only NEG-raising predicates can license Horn clauses; other negated predicates can do so as well, even though they do not trigger NEG-raising readings. In a reply, Collins and Postal (2015, CP15 henceforward) argue that these cases can be accounted for in a different way, but as I will show below (3.1), this alternative account suffers from the same problem as the original account. Second, it turns out that the proposed independent motivation for phonologically deleted negations is incorrect (3.2). Third, not every instance of NEG-raising can follow from the suggested reconstruction mechanism (3.3).

3.1 Horn clauses and Cloud-of-Unknowing predicates

Horn (2014) observed that not every negated predicate that licenses Horn clauses also triggers NEG-raising readings. He presents examples of non-NEG-raising predicates – dubbed Cloud-of-Unknowing predicates – that can also license Horn clauses, such as non-factive *know* and other predicates expressing particular subject or speaker knowledge. Horn's example is presented below in (13); (13) is another example.

(13) a. I *(don't) know that ever before had all three boys napped simultaneously
b. She's *(not) convinced that ever before had all three boys napped simultaneously

However, the examples in (13) clearly lack a NEG-raising reading. They are not equivalent to their counterparts in (14).

(14) a. I know that never before had all three boys napped simultaneously
b. She's convinced that never before had all three boys napped simultaneously

To solve these problems, CP15 reply to Horn (2014) by arguing that examples such as (13) again contain two phonologically unrealized negations: (13)a would underlyingly be like (15),a not (15)b. Cloud-of-Unknowing predicates then form another context under which phonological deletion of two negations may take place.

(15) a. [I do NEG_1 know ~~NEG_2~~ [<NEG_2> that ~~NEG_3~~ ever before had all three boys napped simultaneously]]
b. [I do NEG_1 know [that <NEG_1> ever before had all three boys napped simultaneously]]

In (15)a, NEG_2 starts out in the embedded clause, licensing subject–auxiliary inversion, and licensing phonological deletion of NEG_3. It then raises into the matrix clause to be phonologically deleted under NEG_1, just as was the case in the constructions involving negative indefinites. Evidence for this instance of raising comes again from island effects. If the Horn clause is an island, such sentences become ill formed.

(16) a. *That ever before had all three boys napped simultaneously, I don't know
b. *That ever before had all three boys napped simultaneously, she's not convinced

CP15 are correct that in their system (15)a is an alternative solution. However, what is problematic is that if raising a negation (NEG_3) out of a Horn clause into a matrix clause is possible, nothing rules out (15)b as an additional underlying structure. But since (15)b is the structure that gives rise to the NEG-raising reading, it is predicted that the sentences in (13) should exhibit the corresponding NEG-raising readings in (14) as well, contrary to fact. CP15 argue that one can rule this out by stipulating that if a negation raises into a clause containing a negated Cloud-of-Unknowing predicate, this predicate must be under the scope of a distinct negation. For them, this can be motivated on the basis of the fact that a negated Cloud-of-Unknowing predicate itself forms a semantic constituent. But that is circular: the problem is why it would not be possible to have a negation raised into such a main clause with which it does not form a semantic constituent (in CP14/15 terms). The *explanans* here is thus the *explanandum*. Hence, the solution CP15 provide suffers from the same problem (an unattested predicted NEG-raising reading) as their original proposal, unless such readings are ruled out by pure ill-motivated brute force.

3.2 Phonologically deleted negations

To defend their proposal that semantically present negations can be phonologically deleted in certain contexts, CP14 present several other cases of alleged phonological deletion of semantic negations so that the proposal can be independently motivated. The most important examples are negated modals in French and optionally negative minimizers in German.

As for the first, French has an expletive marker *ne* that in principle requires co-occurrence of an additional negation (usually *pas* or a negative indefinite):

(17) Marie ne mange *(pas / rien)
Marie neg eats neg / nothing
'Marie doesn't eat / Marie doesn't eat anything'

However, when combined with a few particular modals, such as *pouvoir* 'must' or *savoir* 'know', or the verb *cesser* ('stop'), *ne* suffices to express negation, illustrated for *pouvoir* below.

(18) Je ne peut (pas)
I neg can neg
'I can't'

CP14 take this to be evidence for the deletion of a semantic negation. For them, the examples like (18) contain a semantic negation that has been deleted. However, as such examples are restricted to only a handful of modals, they have traditionally been analysed as remnants of previous stages of the languages that have fossilized into idiomatic expressions. As known at least since Jespersen (1917), Old French lacked the negative marker *pas* and only used the preverbal negative marker *ne* to express negation. Hence, it could very well be the case that expressions like (18) merely reflect Old French negation and should be thought of as idiomatic expressions (see Haegeman 1995, Zeijlstra 2004 for an overview and discussion of such facts). The existence of such an alternative analysis means that these examples do not form any hard evidence for the presence of phonologically deleted negations. At the same time, it must be acknowledged that the alternative analysis has also not received proper evidence; hence, it has not been shown that these French examples lack a phonologically deleted negation.

This is, however, different for the second kind of example that CP14 provide. Here it can actually be shown that they contain no phonologically deleted negation. The examples concern particular German pejorative NPIs. As Sailer (2006) observes, for many (though not all) German speakers, the

following sentences containing a minimizer (and similar pairs of sentences with other pejorative minimizers) have the same meaning (cf. Sailer 2006).

(19) a. Das interessiert mich einen Dreck
That interests me a dirt
'I'm not interested at all'
b. Das interessiert mich keinen Dreck
That interests me no dirt
'I'm not interested at all'

For CP14, the fact that the sentences with and without negation have the same meaning is evidence that (19)a, which lacks an overt negation, must contain a covert negation. However, the semantic or pragmatic similarity of the two readings need not follow from the postulation of a covert negation in (19)a. It is possible that the two sentences have different readings whose usage conditions are more or less identical. If the reading of (19)a is that the degree of interest of the speaker is extremely low – even lower than some contextual threshold that indicates a minimal degree of interest – (19) expresses that the speaker's interest lies below this threshold. That means that (19)a expresses that the speaker has no contextually salient degree of interest.

However, if that is the case, (19)a can be uttered in exactly the same situations where the speaker expresses no degree of interest at all by uttering (19)b. Hence, the similarity of the readings in the minimal pair in (19) can be explained without postulating any covert negation. Interestingly, the two analyses make different predictions. For the alternative analysis, (19)a is a positive sentence and (19)b a negative sentence. Under CP14's proposal, both are negative sentences.

Sentential negation can be diagnosed in German by *auch (nicht)* ('also (not)') continuations. In German, positive clauses can be continued by *auch*; they cannot be continued by *auch nicht*. Negative clauses, on the other hand, trigger *auch nicht* continuations and only marginally allow *auch* continuations:

(20) a. Hans geht und Marie auch (*nicht)
Hans goes and Marie also not
'Hans goes and Marie does too'
b. Hans geht nicht und Marie auch ??(nicht)
Hans goes not and Marie also not
'Hans doesn't' go and Marie doesn't either'

Exactly the same pattern can be observed for (19), as shown below. Hence, the test shows that (19)b carries a semantic negation but (19)a does not, disproving CP14's covert negation analysis. Independent evidence for the covert negations in the examples involving NEG-raising is thus absent as well.[1]

(21) a. Das interessiert mich einen Dreck, und ihn auch (*nicht)
That interests me a dirt, and him also not
'I'm not interested at all, and he is neither'
b. Das interessiert mich keinen Dreck, und ihn auch ??(nicht)

[1] Note that this does not mean that phonologically covert negations cannot exist. For instance, in Ladusaw (1992), Zeijlstra (2008) and others, it is argued that negative indefinites in Negative Concord languages (so-called n-words) may enter a syntactic agree relation with a possibly covert negation. There, covert negations are syntactically licensed by an agreeing overt negative element. This licensing mechanism, however, does not extend to the kind of examples presented and discussed in CP14.

That interests me no dirt, and him also not
'I'm not interested at all, and he is neither'

3.3 Islands and NEG-raising

A third problem for CP14 concerns island effects. CP14 take NEG-raising to involve syntactic movement out of a lower clause into a higher clause. Evidence for that view comes from cases in which a Horn clause or a strict NPI is licensed by a clause-external, negated NEG-raising predicate. If such Horn clauses or strict NPIs are in an island (or form an island themselves), this movement is blocked and such licensing is no longer possible, as is exemplified for strict NPIs in (22) and for Horn clauses in (23):

(22) *That Carolyn will breathe a word about it Stanley doesn't think

(23) *That ever before had all three boys napped simultaneously, I don't believe

But if that is correct, and NEG-raising is indeed the result of syntactic movement, NEG-raising readings should not be allowed when the clause in which the negation appears to be interpreted forms an island. However, this prediction is not borne out. Examples (22) and (23) can easily give rise to a NEG-raising reading if the strict NPI is absent and subject–auxiliary inversion does not take place, as illustrated in (24)–(25):

(24) That Carolyn will breathe Stanley doesn't think
'Stanley doesn't think that Carolyn won't breathe'

(25) That all three boys napped simultaneously I don't believe
'I believe that all three boys didn't nap simultaneously'

But where does the NEG-raising reading come from? Clearly, it cannot be the case that the negation emerged in the embedded clause – otherwise the raising of a negation in (22) and (23) would not be problematic either. The only way to account for NEG-raising readings in (24) and (25) is by alluding to some pragma-semantic mechanism along the lines of Bartsch (1973) and her successors. However, the syntactic approach would then no longer be an alternative to the pragma-semantic approach, but rather an account that is at best co-existent with it.

4 Reinstalling the pragma-semantic approach

So, where do we stand? CP14's approach faces at least three serious problems: It predicts NEG-raising readings to be possible in cases where they are not attested, and it predicts NEG-raising readings to be impossible in cases where they are actually found. Moreover, the treatment of NEG-raising readings invoked by negative indefinites can only be maintained by making very specific assumptions, which on closer inspection turn out not to be independently motivated. However, CP14 can straightforwardly account for the fact that strict NPIs and Horn clauses can be licensed by higher negated NEG-raising predicates. Hence, to reinstall the pragma-semantic approach, it must be shown that this approach can also capture the observed facts concerning strict NPIs and Horn clauses. This may not be straightforwardly the case, as pragma-semantic approaches to NEG-raising do not take the negation to start out in the lower clause and instead have it reconstructed at a later stage.

That does not mean, however, that the pragma-semantic approach is incompatible with the negation starting out in a lower position. The central claim of the pragma-semantic approach is that in

NEG-raising readings the negation is interpreted in its surface position. CP14's central claim is that the negation starts out in a lower clause and is interpreted there. But that is actually a twofold claim: one claim saying that the negation starts out below, and one claim asserting that negation is interpreted in this lower position. However, CP14 only provide evidence for the first claim.

Hence, it is possible to reconcile CP14's observations with the pragma-semantic approach to NEG-raising, as it is a logical possibility that in particular cases negation starts out below, raises into the higher clause, and is interpreted there, with the excluded middle or homogeneity presupposition of the NEG-raising predicate triggering an additional inference that together with the assertion yields the NEG-raising reading. Under such an account, it is possible to derive the NEG-raising readings of sentences that contain lower strict NPIs or Horn clauses. The examples in (26) have syntactic structures as in (27), with <NEG> again indicating the basis position of NEG. The strict NPI and the subject–auxiliary inversion are licensed by the lower negation before it raises into the higher position, where it will be interpreted.

(26) a. Stanley doesn't believe that Carolyn will breathe a word about it
b. I don't think that ever before have the media played such a major role in a kidnapping

(27) a. Stanley does NEG believe that Carolyn will <NEG> breathe a word about it
b. I do NEG think that <NEG> ever before have the media played such a major role in a kidnapping

Such an analysis makes all the correct predictions discussed in this paper. First, it can account for the relevant aspects concerning the distribution of strict NPIs, including their island sensitivity: if the embedded clause is an island, the negation can never move into the matrix clause. Furthermore, the existence of NEG-raising readings involving island clauses (section 3.3) naturally follows. In (24), repeated below, there is no movement going on, but the assertion and the presupposition together still trigger the NEG-raising reading. Because NEG-raising does not involve any kind of syntactic reconstruction, movement of negation is not a prerequisite for NEG-raising readings.

(28) That Carolyn will breathe Stanley doesn't think
'Stanley thinks that Carolyn won't breathe'

In fact, following standard minimalist ideas on syntactic movement (cf. Chomsky 1995), movement takes place only when it is necessary. That is indeed the case in the examples in (26), but in other examples – for instance (1)a, repeated below – no negative movement has been going on. The surface position of negation is also its base position here.

(29) I don't think you're right

Adopting this version of the pragma-semantic approach to NEG-raising also avoids alluding to deleted double negations. In examples such as ((30), the universal NEG-raising follows immediately. Negation is simply interpreted in its surface position (which is also its base position), and the excluded middle or homogeneity presupposition does the rest. Note also that in (31)a, where the negation must have started out below to license *until next year*, it raises into the position where it is interpreted together with the existential realized as *nobody*. Consequently, no phonologically deleted double negations are needed.

(30) Nobody supposes that nuclear war is winnable

(31) a. Nobody supposes that nuclear war is winnable until next year
b. [[NEG ∃] supposes [that nuclear war is <NEG> winnable until next year]]

Finally, the facts concerning Cloud-of-Unknowing predicates follow. What NEG-raising predicates – at least the ones discussed thus far – and Cloud-of-Unknowing predicates share is that they do not impose strict locality conditions on their embedded clauses; other predicates, such as *say* or *claim*, do. Therefore, NEG-raising predicates and Cloud-of-Unknowing predicates can license embedded strict NPIs and Horn clauses. As the other predicates impose stronger locality conditions, negation cannot move out of them and therefore they also cannot license embedded strict NPIs and Horn clauses. However, Cloud-of-Unknowing and NEG-raising predicates differ with respect to the excluded middle or homogeneity presupposition: NEG-raising predicates have it; Cloud-of-Unknowing predicates do not. Hence, the latter class of predicates does not trigger NEG-raising readings.

One may wonder, then, why NEG-raising predicates have two distinguishing properties: weak locality conditions imposed on their complement clauses and the excluded middle or homogeneity presupposition. Ideally, NEG-raising predicates should follow from one distinguishing property only. There is no reason why predicates with an excluded middle or homogeneity presupposition should also impose weak locality conditions on their complement clauses to yield a NEG-raising reading.

Indeed, there are predicates that only have this excluded middle or homogeneity presupposition. *To be of the opinion* is a good example. Example (32)a clearly has a reading (32)b. However, it cannot license strict NPIs or Horn clauses.

(32) a. I am not of the opinion you're right
b. I am of the opinion you're not right

(33) a. *I am not of the opinion that Carolyn will breathe a word about it
b. *I am not of the opinion that ever before have the media played such a major role in a kidnapping.

Hence, whether predicates impose weak and strong locality conditions or their complements, and whether predicates come with an excluded middle or homogeneity presupposition, are independent parameters, as demonstrated in the following table:

(34) Four types of predicates

	Weak locality constraints	Strong locality constraints
Excluded middle or homogeneity presupposition present	*think, believe, hope*	*to be of the opinion*
Excluded middle or homogeneity presupposition absent	*know, to be convinced (Cloud-of-Unknowing predicates)*	*say, claim, predict*

It may be striking, though, that the large majority of predicates that come with the excluded middle or homogeneity presupposition also impose weak locality constraints on their complements. However, this may very well be because most predicates in this class are also non-factive, and it has been claimed in syntactic theory that non-factive predicates often impose weaker constraints on extraction from their complements than factive predicates do (cf. Giorgi 2004 a.o.) and both NEG-raising and Cloud-of-Unknowing predicates are generally non-factive.

Hence, the proposed alternative in this paper indeed reinstalls the pragma-semantic approach to

NEG-raising while still being able to account for the relevant distribution of strict NPIs and Horn clauses. However, a possible objection may arise in the sense that in examples such as (26), the negation lacks any phonological or semantic effect in its base position; the lowest trace or copy appears to be semantically vacuous. There are three reasons why this objection does not hold. First, there is nothing in the theory maintaining that lowest traces/copies cannot be semantically vacuous. Elements are interpreted at their position at LF, not in their base position. Hence, nothing in the theory forbids negation to start out low and be interpreted high. But even if one were to maintain this position, note that the lowest trace/copy does have some grammatical effect: it is responsible for the licensing of the NPI. Hence, movement of negation is not a grammatically redundant operation. And if ungrammaticality is determined at the interfaces only (cf. Chomsky 1995), these lowest traces/copies of the negation indeed have a phonological or semantic effect. Finally, it should be noted that CP14 must also assume that sometimes the role of the lowest negation is just to license the NPI and nothing more. After all, every negated NEG-raising predicate also allows for a non-NEG-raising reading (admittedly, something not very well understood in the pragma-semantic approach). This is also the case in (35).

(35) Mary didn't believe that Bill stayed until June; she simply doesn't have any beliefs about Bill.

Example (35) lacks the NEG-raising reading. Under CP14, the negation must still have started out below (in order to license *until June*), but the negation is only interpreted in its highest position.

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