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Topoi

An International Review of Philosophy

ISSN 0167-7411

Topoi

DOI 10.1007/s11245-017-9461-0



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# Does Neg-Raising Involve Neg-Raising?

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**Abstract** Neg-Raising concerns the phenomenon by which certain negated predicates (e.g. *think*, *believe*, *expect*) 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 (Linguistische Berichte 27:1–7, 1973) and has been elaborated in Horn (Pragmatics, Academic Press, New York, 1978, 1989), Gajewski (Neg-raising: polarity and presupposition, PhD Dissertation, MIT, 2005; Linguistics Philosophy 30:298–328, 2007), Romoli (Linguistics Philosophy 36:291–353, 2013), and many others. Recently, this standard approach has been challenged by Collins and Postal (Classical NEG Raising, The MIT Press, Cambridge, MA, 2014), who argue, by providing various 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 like: I do[n’t]<sub>i</sub> think you’re t<sub>i</sub> right, and the Neg-Raising reading would result from the interpretation of the lower copy of the negation. In this paper I present three novel arguments

against this account. First, following up work by Horn (Black Book: a festschrift in honor of Frans Zwarts, University of Groningen, Groningen, 2014), I show that Collins and Postal (Classical NEG Raising, The MIT Press, Cambridge, MA, 2014), and their reply to Horn (Collins and Postal, ‘Dispelling the Cloud of Unknowing.’ Ms., NYU. LingBuzz/002269, 2015), predict that every negated predicate that can license so-called *Horn-clauses* (non-negative clauses containing NPIs in a position where subject–auxiliary inversion is licensed) should receive a Neg-Raising reading, contrary to fact. Second, Collins and Postal (Classical NEG Raising, The MIT Press, Cambridge, MA, 2014) adopt various instances of phonological deletion of negative operators—a necessary ingredient for their account—but these instances of phonological deletion cannot be independently motivated. Third, it turns out that for certain constructions, Collins and Postal (Classical NEG Raising, The MIT Press, Cambridge, MA, 2014) must also allude to the original Bartschian approach. I further demonstrate that the standard, pragma-semantic approach to Neg-Raising actually explains the grammaticality of Horn-clauses and other phenomena, such as the distribution of negative parentheticals, that were presented by Collins and Postal (Classical NEG Raising, The MIT Press, Cambridge, MA, 2014) as arguments in favour of the syntactic approach to Neg-Raising, equally well, if not better, than this syntactic alternative.

**Keywords** Negation · Neg raising · Horn clauses · NPIs

## 1 Introduction

Neg-Raising concerns the phenomenon, illustrated in (1), by which certain negated predicates (e.g. *think*, *believe*, *expect*) can give rise to readings where negation seems to

Parts of this paper have been presented at the 2015 LISSIM summerschool, the 2015 Göttingen Spirit Summerschool on negation and the 2015 Amsterdam Colloquium. I am grateful to the audiences for their useful feedback. Also, I would like to thank Cleo Condoravdi, Eva Csipak, Omran Omran and Viola Schmitt for valuable comments. Special thanks go to Chris Collins for many insightful remarks and long discussions on the topic of Neg-Raising and related issues, especially when we were both teaching at LISSIM 2015, and of course to Chris and Paul Postal for their rich, impressive work and their sharp empirical observations, that I have based this paper on. All errors, obviously, are mine.

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take scope from an embedded clause: for instance, (1a) may have a reading (1a') (alongside the literal interpretation where indeed I do not entertain the thought that you are right), and the same holds for the b- and c-pairs.

- (1) a. I don't think you're right.  
 a'. I think you're not right.  
 b. She doesn't believe John is ill.  
 b'. She believes John isn't ill.  
 c. They don't expect to win the race.  
 c'. They expect not to win the race.

By contrast, most other predicates do not give rise to such inferences. Negated predicates like *predict* or *claim* lack readings where negation seems to take lower scope, as shown in (2) below. (2a) does not infer (2a'), and (2b) does not infer (2b'):

- (2) a. I don't predict you're right.  
 a'. I predict you're not right.  
 b. She doesn't claim John is ill.  
 b'. She claims John isn't ill.

Predicates that can give rise to such readings are referred to as *Neg-Raising predicates*. Predicates that do not yield such readings are dubbed *non-Neg-Raising predicates*. Readings invoked by Neg-Raising predicates where negation seems to take scope from the embedded clause are called *Neg-Raising readings*.

The standard analysis, which treats Neg-Raising in pragma-semantic terms, goes back to Bartsch (1973) and has further been elaborated in Horn (1978, 1989), Horn and Bayer (1984), Horn (1989), Gajewski (2005, 2007), Homer (2012), among many others. Under this approach, Neg-Raising predicates are assumed to come along with an excluded middle or homogeneity presupposition. For instance, the predicate *think p* presupposes that either p is thought, or not-p. Applying this to (1), (1a) presupposes that the speaker either thinks you're right or thinks that you're not right. Together with this presupposition, (1a) entails (1a'): <sup>1</sup>

- (3) Assertion: I don't think you're right. (1a)  
 Presupposition: I think you're right or I think that you're not right.  
 I think that you're not right. (1a')

<sup>1</sup> Gajewski (2007) takes these excluded middle presuppositions to be soft presuppositions (in the sense of Abusch 2002, 2010), as they behave differently from so-called hard presuppositions. For instance, these excluded middle presuppositions can easily be suspended, e.g. in the case of (1a), in contexts where the speaker has made clear to have no thoughts about the issue, whereas hard presuppositions cannot be that easily suspended. For this and other reasons, Romoli (2013) takes the excluded middle inference to be a scalar alternative and takes Neg-Raising readings to result from scalar implicatures.

Recently, this standard approach has been challenged by Collins and Postal (2014, henceforward CP14), who argue that Neg-Raising involves syntactic movement of the negation from a lower clause into a higher clause (a proposal tracing back to Fillmore 1963, and also adopted in Horn 1971, 1972). Ignoring *do*-support effects, the syntactic structure of (1a) would then be as in (4), and the reading (1a') would follow from interpreting the negation in its base position (<NEG> indicating a lower copy/trace of NEG).

- (4) I NEG think you're <NEG> right.

For CP14, this follows from the principle they adopt that only base occurrences of NEG are interpreted. Under this approach, the lowest copy of NEG must be semantically interpreted, whereas the highest copy of NEG is phonologically realized (in this case as *n't*).<sup>2</sup>

The syntactic approach to Neg-Raising has often been rejected as it seems to make incorrect predictions about Neg-Raising constructions involving negative indefinites (see, e.g. Horn 1989; Gajewski 2007; Homer 2012 for discussion). To see this, take the following example from Horn (1989):

- (5) Nobody supposes that nuclear war is winnable.

If *nobody* is the realization of a negated indefinite (NEG  $\exists$ -body), the underlying structure of (5) under the syntactic approach should then be like (6). The predicted Neg-Raising reading would then be that somebody supposes nuclear war is not winnable (with the raised negation taking scope from its base position).

- (6) NEG  $\exists$ -body supposes that nuclear war is <NEG> winnable.

However, this is not the Neg-Raising reading (5) has. The Neg-Raising reading is rather 'everybody supposes that nuclear war is not winnable'. Under the conceived wisdom that negative indefinites are negated existentials (and not universals scoping over negation), this Neg-Raising

<sup>2</sup> Naturally, this yields the question as to what would trigger this movement. Collins and Postal (2014) are not explicit about this issue, but rather state that the syntactic and semantic properties of these constructions force an analysis in terms of movement. See Sect. 4 for more discussion.

reading cannot be yielded by raising the negation and incorporating it in the quantifier.<sup>3</sup>

Note that this is not a problem for the standard, pragma-semantic approach to Neg-Raising; the excluded middle presupposition plus the assertion jointly entail the attested Neg-Raising reading. If *suppose* in (6) presupposes that it is supposed that nuclear war is either winnable or not, then if nobody supposes that nuclear war is winnable, everybody supposes that nuclear war is not winnable. This is indeed the attested Neg-Raising reading.

CP14 acknowledge this fact, but argue that this reading can, nevertheless, be accounted for under the syntactic approach to Neg-Raising once it is assumed that constructions like (5) contain two, covert negations, next to the negative indefinite subject, as in (7).

(7) Nobody  $NEG_1$  supposes that nuclear war is  $NEG_2$  winnable.

For CP14, (7) is the logical form of (5), and it has indeed the attested Neg-Raising reading. Truth-conditionally, (7) ('nobody doesn't suppose that nuclear war is not winnable') is equivalent to 'everybody supposes that nuclear war is not winnable'. However, the negations  $NEG_1$  and  $NEG_2$  are not pronounced. In order to account for the phonological deletion of these two negations, CP14 postulate a mechanism by which (under particular circumstances) an even number of negations can be phonologically deleted under a clausemate downward entailing operator.<sup>4</sup>

Concretely, CP14 assume that in (7), the lower negation ( $NEG_2$ ) raises into the matrix clause. Again using  $\langle \dots \rangle$  serves to indicate lower copies of moved elements, as indicated in (8).

(8) Nobody  $NEG_1$   $NEG_2$  supposes that nuclear war is  $\langle NEG_2 \rangle$  winnable.

<sup>3</sup> Note that this objection would disappear if negative indefinites were taken to be universal quantifiers that outscope negation (as has been argued for Greek neg-words by Giannakidou (2000) and for Japanese neg-words by Shimoyama 2001, 2006). For non-Negative Concord languages, like English, there is strong evidence that negative indefinites are indeed existentials/indefinites under the scope of negation (cf. Penka 2011, Zeijlstra 2011, Iatridou and Sichel 2013 for an overview and discussion), though, and in the current debate nobody has pursued an alternative analysis in terms of universal quantifiers.

<sup>4</sup> CP14 employ various Neg-Deletion rules (cf. CP14: ch. 8 for an overview). The Neg-Deletion rule applying here states that an NPI-licenser can license the deletion of a clausemate negation, provided that the total number of deleted negations is even and provided they stand in a c-command chain. CP14 do not postulate this rule just for these Neg-Raising constructions, but they also apply it to account for weak NPI-hood in general. For CP14, a sentence like also contains two covert negations, and has the underlying structure (i) At most three students ate any apples. (ii) At most three students ate  $NEG$  some apples.

After having raised  $NEG_2$  into the matrix clause,  $NEG_1$  can license the phonological deletion of (now clausemate)  $NEG_2$ , after which *Nobody* licenses the phonological deletion of  $NEG_1$ . Using strikethrough as an indication of phonological deletion, (8) then becomes (9), which is phonologically realized as (5).

(9) Nobody  ~~$NEG_1$~~   ~~$NEG_2$~~  supposes that nuclear war is  $\langle NEG_2 \rangle$  winnable.

Semantically, every  $NEG$  is interpreted in its lowest position (irrespective of whether it is realized or not), which gives rise to the attested Neg-Raising reading: 'Nobody does not suppose that nuclear war is not winnable', which is truth-conditionally equivalent to 'Everybody supposes that nuclear war is not winnable'.

Naturally, the innovative, and perhaps somewhat unintuitive step here is the presence of two negations that are phonologically zero. However, for CP14 this step can be motivated on the basis of the following line of reasoning. First, there is syntactic evidence that the negation, at least in certain cases, must have started out below in the embedded clause; consequently, the standard, pragma-semantic approach, which computes the Neg-Raising reading on the basis of the negation taking scope from its surface position, can then not be on the right track for them. Second, CP14 claim that there is independent evidence for such unpronounced negations.

In Sect. 2, I will present what I take to be the three most important arguments from CP14 in favour of the syntactic approach and against the standard, pragma-semantic approach. Then, in Sect. 3, I will present three problems for this syntactic approach. In Sect. 4, I show that, upon closer inspection, the arguments presented in Sect. 2 in favour of the syntactic approach actually involve facts that are sometimes equally well and sometimes even better explained by the standard, pragma-semantic approach. In short, I conclude that the arguments provided by CP14 show that arguably in some, but certainly in not all cases of Neg Raising, negation must have started out of the embedded clause. However, nothing requires that negation must be interpreted in a lower position. In fact, there are good reasons to assume that negation never takes scope from a position lower than its surface position. As I conclude in Sect. 5, these facts, if correct, reinstall the standard, pragma-semantic approach to Neg-Raising.

## 2 Arguments in Favour of the Syntactic Approach

The three most important arguments by CP14 in favour of their syntactic approach to Neg-Raising centre around the licensing of embedded strict Negative Polarity Items (NPIs)

by negated Neg-Raising predicates, the possibility of negated Neg-Raising predicates to embed so-called *Horn-clauses* and the syntactic behaviour of negative parentheticals. For CP14 all these arguments indicate that the negation present in a higher clause with a Neg-Raising predicate must have started out in a lower clause. These arguments will be discussed consecutively in Sect. 2.1 and 3, respectively. Section 2.4 contains some concluding remarks.

## 2.1 Neg-Raising and Strict NPIs

Strict NPIs, such as *breathe a word* or punctual *until*, differ from other, non-strict NPIs (such as *any* or *ever*) in the sense that the licensing of the former (10)–(11), but not the latter (12)–(13), is subject to syntactic locality constraints, such as clause-boundedness. Strict NPIs cannot be licensed by a clause-external licenser; non-strict NPIs can.

- (10) a. Carolyn will \*(not) breathe a word about it.  
b. \*Stanley doesn't predict that Carolyn will breathe a word about it.
- (11) a. Calvin {didn't move/\*moved} in until June.  
b. \*Calvin didn't claim that Mona moved in until June.
- (12) a. Carolyn {won't/\*will} say anything about it.  
b. Stanley \*(doesn't) predict that Carolyn will say anything about it.
- (13) a. Mona {didn't ever move in/\*ever moved in}.  
b. Calvin {didn't claim/\*claimed} that Mona ever moved in.

Strikingly, as CP14 show, a negated Neg-Raising predicate may license embedded strict NPIs, though, as shown in (14) below.

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

For CP14, this suggests that the negation must have started out clause-internally in order to locally license the NPI before it raises into the matrix clause. Further evidence for CP14 for such a raising analysis comes from the fact that once the embedded clause containing the strict NPI forms a syntactic island, i.e. a syntactic domain, which is closed for external syntactic operations such as extraction, licensing of strict NPIs by negated Neg-Raising predicates is no longer possible either.

For instance, embedded clauses with a clause-internal topic (15a) or an internal topic cleft (15b) do not allow any

*Wh*-element to further raise out of it, as shown below (again based on CP14 examples), whereas in the corresponding examples without clause-internal topics or internal topic clefts, *Wh*-extraction is fine (as shown in (15a'–b')).

- (15) a. \*When does Mona believe that Irene, Jim should call?  
a' When does Mona believe that Jim should call Irene?  
b. \*What do you expect that it's Tony who says?  
b' What do you expect that Tony says?

All embedded clauses containing the strict NPI in (16)–(18) are syntactic islands, i.e. constituents from where no element can be extracted. As is illustrated for such clause-internal topics (16) and clause-internal clefts in (17) (examples after CP14), strict NPIs in the embedded clause can no longer be licensed by the negated Neg-Raising predicate in the higher clause. The same is illustrated for topic islands in (18), which also form a syntactic island (where the attested ungrammaticality follows from an alleged absent *c*-command relation between the higher copy of the negation and the surface position of its lower, unpronounced copy).

- (16) a. \*Stanley doesn't believe that about that, Carolyn will breathe a word.  
b. \*Calvin didn't expect that Mona, Jim should call until tomorrow.
- (17) a. \*Stanley doesn't believe that it is Carolyn who will breathe a word about it.  
b. \*Calvin didn't expect that it was Mona who moved in until June.
- (18) a. \*That Carolyn will breathe a word about it, Stanley doesn't believe.  
b. \*That Mona moved in until June, Calvin didn't expect.

Now, for CP14 it follows that if contexts from which extraction is forbidden are also contexts in which negated Neg-Raising predicates cannot license strict NPIs: Neg-Raising involves movement of the negation from a lower clause into a higher clause. Once this movement is forbidden, syntactic Neg-Raising can no longer take place.

However, this argument is not watertight. What the island effects show is that if the strict NPI is in a different syntactic domain from that of its licenser, this NPI can no longer be licensed by it. Whereas in (14), the NPI and the negation must be in the same syntactic domain (otherwise for CP14 NEG-movement would be impossible), in (16–18) they are not. But if strict NPI licensing is subject to syntactic locality, there is nothing that a priori shows that the negation should have moved out of the lower clause in (14). One can very well

maintain that the negation licenses the NPI from its surface position in (14), given that it is in the same syntactic domain as the NPI. The reason why (16–18) are out is then because the NPI and the negation are in different syntactic domains. What the facts show is only that negation can license strict NPIs in exactly those domains from which movement is also possible—a conclusion that is not surprising, as syntactic locality is usually not restricted to extraction, but to all kinds of syntactic operations (e.g. agreement is subject to the same syntactic locality conditions as extraction). The difference between Neg-Raising and non-Neg-Raising predicates is then a difference in locality. The complement of a Neg-Raising predicate belongs to the same domain as the Neg-Raising predicate, whereas the complement of a non-Neg-Raising predicate belongs to a different domain. This conclusion, which is a necessary assumption for CP14 as well (otherwise it could not be explained in their approach why only Neg-Raising predicates allow an embedded negation to raise into the higher clause), suffices to account for the differences in terms of strict NPI-licensing by negated Neg-Raising and negated non-Neg-Raising predicates discussed in this section.<sup>5,6</sup>

## 2.2 Neg-Raising and Horn-Clauses

Stronger evidence in favour of a raising analysis comes from so-called *Horn-clauses*. Horn-clauses, named after the person who first observed these constructions, are clauses where a clause-externally negated (strict) NPI in the specifier position of its CP triggers Negative Inversion.

Normally, Negative Inversion is only possible if the element present in Spec, CP is a negation or a negative-like element, such as *few* or *only*.<sup>7</sup>

- (19) a. No student has she liked.  
 b. Never has she liked me.  
 c. Not every student has she liked.  
 d. Few students has she liked.  
 e. Only Bill has she liked.

<sup>5</sup> One could argue that this would predict that *Wh*-terms cannot be extracted from the complements of non-Neg-Raising predicates, contrary to fact. *When does Mona say/claim that Jim should call Irene?* is perfectly grammatical. However, there is a rich body of (uncontroversial) evidence in syntactic theory that in these cases the *Wh*-term does not move directly from its base position to its final position, but first lands in an intermediate position, which is at the edge of its original syntactic domain, but already visible for the next syntactic domain (cf. Chomsky 1973, 2001).

<sup>6</sup> For more discussion on strict NPIs, Neg-Raising and island effects, see also Romoli (2013).

<sup>7</sup> For an overview and discussion about when negation exactly licenses Negative Inversion, see Jackendoff (1972); May (1985); Haegeman (2000); Büring (2004), CP14: ch. 14–15.

Strikingly, under negated Neg-Raising predicates, a clause that contains a (strict) NPI in its edge can also trigger/license Negative Inversion (20), but not under non-Neg-Raising predicates (21).

- (20) a. I don't think that ever before have the media played such a major role in a kidnapping.  
 b. I don't suppose that under any circumstances would she help me.
- (21) a. \*I don't claim that ever before have the media played such a major role in a kidnapping.  
 b. \*I don't predict that under any circumstances would she help me.

For CP14, the availability of Horn-clauses under negated Neg-Raising predicates shows that the negation must have started out in the Horn-clause itself. CP14 argue that those sentences have underlying structures with the negation starting out in the embedded clause, where the negation licenses the strict NPI and the subject-auxiliary inversion, before it raises into the matrix clause (where it gets phonologically realized as *n't*), as shown in the derivation in (22). Note that if the negation had not raised into the main clause, it would have been incorporated into the NPI (with the realization *never before*).

- (22) a. I think that the media have [NEG ever before] played such a major role.  
 b. I think that [NEG ever before] have the media <have> played <[NEG ever before]> such a major role.  
 c. I NEG think that [<NEG> ever before] have the media <have> played <[NEG ever before]> such a major role.

For CP14, the licensing of strict NPIs and Horn-clauses form 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. Moreover, as CP14 show, Horn-clauses give rise to the same island effects that applies to strict NPI licensing under negated Neg-Raising predicates. Focusing on topicalized islands, the data in (23) demonstrate that if the embedded CP (with Negative Inversion) forms an island, the negation cannot license it either.

- (23) a. \*That ever before have the media played such a major role in a kidnapping, I don't expect.  
 b. \*That under any circumstances would she help me, I don't suppose.

CP14 show that not only negative markers can license lower Horn-clauses; negative indefinites also can do so.

- (24) a. Nobody thinks that ever before have the media played such a major role in a kidnapping.  
 b. No person supposes that under any circumstances would she help me.

This point is important, as it shows that Horn-clauses cannot only be licensed by those instances of Neg-Raising that are not problematic for the syntactic approach, but also by those that need special treatment in terms of multiple phonologically deleted negations (see Sect. 1).

Whereas one can argue that strict NPIs can be licensed by clause-external negations, under the assumption that the clause containing the strict NPI does not constitute a syntactic domain, no one has claimed before (at least to the best of my knowledge) that Negative Inversion can be licensed on a distance. That does not entail, though, that it is impossible to argue that Horn-clauses do not involve movement of negation.

To see this, take into consideration what the ingredients of Negative Inversion are. These are (i) the presence of subject-auxiliary inversion in the lower clause (i.e. T-to-C movement in syntactic terms), and (ii) the presence of a negation in the specifier position of this C-head. For CP14, in Horn-clauses this negation has been raised into the higher clause. Now, no movement has to be postulated if one were to rephrase the ingredients for Negative Inversion as follows: (i) the presence of subject-auxiliary inversion in the lower clause (i.e. T-to-C movement in syntactic terms), and (ii) the presence of a *signpost of a negation* in the specifier position of this C-head, where a signpost of a negation is either a negative element or an element that is fully dependent on the presence of a (local) negation (a.k.a. an NPI). Now, this rephrasing covers both regular cases of Negative Inversion (where there should be a negation present in the specifier of the CP, since that it is the highest position in syntactic domain that the C-head is part of) and Horn-clauses (where there is an NPI in the specifier position of the CP and a negation in the higher clause containing a Neg-Raising predicate). Since Neg-Raising predicates (and, as we will see in Sect. 3.1, a few others) are the only predicates that form a single syntactic domain with their complements (see previous section), only negated Neg-Raising predicates (and other predicates that form a syntactic domain with their complement clauses) can license Horn-clauses.

Naturally, the question arises as to whether such a step can be independently motivated. If there were no independent motivation to favour this rephrasing over the original formulation of Negative Inversion, the reasoning would

be ad hoc and not yield any further understanding. However, there are actually reasons to assume that Horn-clauses resemble another phenomenon, known as parasitic licensing, where additional NPIs can intermediate in a long-distance NPI-licensing relation that would otherwise only apply locally (cf. Klima 1964; den Dikken 2002, 2006; Hoeksema 2007). Take the following Dutch examples from Hoeksema (2007).

- (25) a. Ik hoop dat je niet meer van mening verandert.  
 I hope that you not anymore of opinion change.  
 'I hope you will not change your opinion anymore.'  
 b. \*Ik hoop niet dat je meer van mening verandert.  
 I hope not that you anymore of opinion change.  
 Intended: 'I hope you won't change your opinion anymore.'

*Meer* in (25) is a strict NPI. However, if the embedded clause also contains another (non-strict) NPI, such as *ooit* ('ever'), the sentence is fine again. NPI *ooit* can license strict NPI *meer*, as long as *ooit* is properly licensed itself.

- (26) Ik hoop niet dat je ooit meer van mening verandert.  
 I hope not that you ever anymore of opinion change.  
 'I hope that you will never change your opinion anymore.'

Much in the same vein, one can argue that T-C movement (unless triggered independently) is a strict NPI, which therefore needs to be licensed by a negation. Given that this strict NPI is located in the C-head, the only position where this licenser could be placed is the specifier of this head. However, if a properly licensed NPI appears in this position, this NPI could still mediate in the licensing of the strict NPI in the C-head. And if this NPI in the specifier position needs to stand in a local relation with its licenser itself (cf. CP14), it follows that Horn-clauses can be analysed as a special case of parasitic NPI licensing.

Does that mean that Horn-clauses no longer provide evidence for movement of negation out of the embedded clause? Not necessarily. Ultimately, this depends on what exactly is taken to be the underlying mechanism behind parasitic licensing. If parasitic licensing involves movement of negation from the position of the intermediate NPI into the higher clause (cf. den Dikken 2002, 2006; Hoeksema 2007), Horn-clauses still provide evidence for movement or incorporation of a lower negation. If parasitic licensing does not involve movement, one can argue that Horn-clauses do not involve movement either (provided that Horn-clauses indeed involve parasitic licensing). Currently, parasitic NPI licensing is not well enough understood to settle the debate, and I concur with CP14 that Horn-clauses may provide evidence that in cases where Horn-clauses appear under negated Neg-Raising predicates this negation

must have started out in the lower clause, as long as it has not been established that parasitic licensing does not involve negative movement.

### 2.3 Neg-Raising and Negative Parentheticals

The third piece of evidence provided by CP14 for the syntactic approach to Neg-Raising concerns negative parentheticals, such as parenthetically used *I don't fear* or *I don't think*. Negative parentheticals are generally forbidden, as shown by Ross (1973), and illustrated in (27):

- (27) a. Max is a Martian, I fear.  
 b. Max is not a Martian, I fear.  
 c. \*Max is a Martian, I don't fear.  
 d. \*Max is not a Martian, I don't fear.

However, as Ross (1973) observed, Neg-Raising predicates can be used in negative parentheticals, provided that the main clause is negative as well.

- (28) Max is not a Martian, I don't {think/believe/expect/\*claim/\*assert}.

Note that negative parentheticals are also possible when the predicate is a Neg-Raising predicate and the subject of the parenthetical is a negative indefinite, again provided that the main clause is negative as well:

- (29) Cathy will not, nobody {thinks/believes/expects/\*claims/\*asserts}, divorce Fred.

CP14, focusing on a wide array of instances of negative parentheticals, show that parentheticals are subject to two conditions: (i) a requirement that the elided complement of the parenthetical is semantically equivalent to the main clause; and (ii) a requirement that the parenthetical is not a monotone decreasing context (and thus not semantically negative) itself. It is condition (ii) that generally rules out negative parentheticals. Now, if negative parentheticals involve syntactic movement of the negation out of their elided complement clause, as may be the case with Neg-Raising predicates, both these conditions in examples (28)–(29) are met.

To see this, take (28) with its underlying structure (30). Here the lower copy of the negation is interpreted, and the parenthetical is thus semantically non-negative; it only contains a negative form, not a negative meaning for CP14. Therefore, both the identity condition (i) and the condition that the parenthetical is semantically not monotone decreasing (and thus not negative) (ii) are met.

- (30) Max is not a Martian, I NEG think [Max is <NEG>a Martian].

The same applies to (29), which, as with every Neg-Raising construction involving a negative indefinite, CP14 take to contain two phonologically deleted negations. As shown in (31), the negative parenthetical in (29), in full analogy to (5)/(7), then contains two negative elements (nobody and NEG<sub>1</sub>), which jointly render the parenthetical positive (*nobody does not think that ...* is equivalent to *everybody thinks that ...*), and a raised negation (NEG<sub>2</sub>) that is interpreted in the elided clause, satisfying the identity condition.

- (31) Cathy will not, nobody NEG<sub>1</sub> NEG<sub>2</sub> thinks [Cathy will <NEG<sub>2</sub>

CP14 argue that the fact that negative parentheticals need a negation to be interpreted in the elided clause and not in the parenthetical itself, forms another argument in favour of the syntactic approach to Neg-Raising. For them, there is no way that these facts can be accounted for under the standard, pragma-semantic approach to Neg-Raising, with the negation taking scope in situ.

However, whether the pragma-semantic approach cannot account for the existence of negative parentheticals primarily depends on the question at what grammatical level these conditions hold, taking for granted that CP14's conditions (i)–(ii) are indeed correct.

For CP14, syntactic base positions are also the position where negations are interpreted, so there is no distinction to be made between whether these conditions apply at a syntactic level or at a semantic/pragmatic level. However, under the perspective that negation is not interpreted lower than its surface position, there is a distinction to be made.

At first sight, it does not look like the pragma-semantic approach can get the facts right. Negation is interpreted in its surface position, and that would violate both conditions on negative parentheticals. The assertion of the negative parentheticals in (32) is monotone decreasing and the elided complement contains no negation:

- (32) a. [I don't think [Max is a Martian]].  
 b. [Nobody thinks [Cathy will divorce Fred]].

However, once the presuppositional meaning contributions are taken into account, things shift. If the presuppositional contents are taken into consideration as well (which project the excluded middle projection), and the conditions (i)–(ii) are checked only after the enriched meaning contribution of the sentences is computed, the sentences in (32) yield the same meaning as the ones in (33), which meet again both conditions (i)–(ii).

- (33) a. I think [Max is not a Martian].  
b. Everybody thinks [Cathy won't divorce Fred].

If the conditions on negative parentheticals have to be respected at a postgrammatical level, the pragma-semantic approach can deal just as well with them as CP14's syntactic approach. Hence it is indeed a question at which level negative parentheticals must fulfill the two conditions.

There is, I think, good evidence that these conditions indeed have to be licensed at a postgrammatical, pragmatic level. As CP14 show, it is not only Neg-Raising predicates that can appear in negative parentheticals. Also, certain inherently negative verbs do. CP14 provide the following examples:

- (34) a. Cathy was not, I don't deny, divorced from Fred.  
b. Cathy was not, I don't doubt, divorced from Fred.

CP14 argue that these examples fit in as the joint meaning contribution of 'not deny' or 'not doubt' is no longer monotone decreasing, given the fact that *deny*, and *doubt* are in a way negative verbs too (since *deny* has a similar meaning as *not confirm* and *doubt* means something like *not be certain*) and known, for instance, to license weak NPIs.

However, at a purely semantic level, the assertions of negated *doubt* and *deny* still count as negative. This is evidenced by the fact that such negated predicates can license both *either*-continuations (and not *too*-continuations) and strict NPIs like *in years*:

- (35) a. Mary doesn't doubt it, and Bill doesn't doubt it either/\*too.  
b. Mary doesn't deny it, and Bill doesn't deny it either/\*too.

- (36) a. Mary has\*(n't) doubted it in years.  
b. Mary has\*(n't) denied it in years.

But that means that at a purely semantic level, *not deny* and *not doubt* still count as negative. If the conditions for negative parentheticals should hold at this level (or earlier), the examples in (34) are predicted to be ungrammatical. However, since negated predicated *not deny* and *not doubt* pragmatically infer *confirm* or *be certain*, they no longer count as monotone decreasing if the two conditions that capture the acceptability of negative parentheticals, apply postgrammatically. Then, again, it is correctly predicted that the examples in (34) are fine. But if that is the case, the pragma-semantic proposal makes the same predictions with respect to the distribution of negative parentheticals as CP14 (if not better, given the facts in (34)-(36)), and the distribution of negative parentheticals thus does not

form an argument in favour of the syntactic approach to Neg-Raising.

## 2.4 Summing Up

CP14 provide three arguments in favour of the syntactic approach to Neg-Raising, with their central conclusion being that only under a syntactic approach to Neg-Raising can the facts discussed in this section be explained. The emphasis here should be on *only*, as these arguments would no longer hold in favour of the syntactic approach if they were also compatible with the standard, pragma-semantic approach.

So far, the evidence provided by CP14 appears rather mixed in strength. The facts concerning strict NPIs and negative parentheticals, in my opinion, do not form a strong problem for the standard, pragma-semantic approach, as the latter approach is fully compatible with such facts. However, the facts concerning Horn-clauses have not yet received an explanation in alternative terms. Hence, unless Horn-clauses, despite CP14's claims, appear to be compatible with the standard, pragma-semantic approach to Neg-Raising, they call indeed for a syntactic approach to Neg-Raising. However, as we will see later on, under the standard, pragma-semantic approach to Neg-Raising these facts can be explained as well (irrespective of whether they involve negative movement or clause-external long-distance parasitic licensing).

## 3 Problems for CP14

CP14's proposal is an important and original contribution to the understanding of the phenomenon of Neg-Raising, but it 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 in Sect. (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 flawed Sect. (3.2). Third, not every instance of Neg-Raising can follow from the suggested movement mechanism, which has the effect that the proposed analysis of Neg-Raising in syntactic terms should coincide with the standard, pragma-semantic approach rather than replace it Sect. (3.3). Section 3.4 sums up.

### 3.1 Horn-Clauses and Cloud-of-Unknowing Predicates

Horn (2014) observes that not every negated predicate that licenses Horn-clauses also triggers Neg-Raising readings. He presents examples of non-Neg-Raising predicates, such as non-factive *know* and other predicates expressing particular subject or speaker knowledge—dubbed Cloud-of-Unknowing predicates—that, when negated, can also license Horn-clauses. Horn's example is presented below in (37a); (37b) is yet another example.

- (37) 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 (37) clearly lack a Neg-Raising reading. They are not semantically or pragmatically equivalent to their counterparts in (38).

- (38) 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

This shows that the negation that is phonologically realized in the main clauses in (37) cannot be the same negation that could license *ever before*. That means that the underlying structure of (37a) cannot be similar to the one in (22c), repeated as (39) below.

- (39) I NEG think that [ $\langle$ NEG $\rangle$  ever before] have the media  $\langle$ have $\rangle$  played [ $\langle$ NEG ever before $\rangle$ ] such a major role.

To solve these problems, CP15 reply to Horn (2014) by arguing that examples such as (37) again contain two phonologically unrealized negations i.e. (37a) would underlyingly be like (40). For CP15, syntax dictates that there must be (minimally) one negation present in the embedded clause; otherwise Negative Inversion could not be accounted for. Since the presence of this negation does not give rise to a semantic effect, CP15 argue that the embedded clause must contain a second negation (taking immediate scope above it), which then semantically cancels out the other negation. In order to account for the fact that both negations are not phonologically realized, CP15 propose that negated Cloud-of-Unknowing predicates form again a context under which (clausemate) phonological deletion of two negations may take place.

- (40) [I do NEG<sub>1</sub> know NEG<sub>2</sub> [ $\langle$ NEG<sub>2</sub> $\rangle$  that NEG<sub>3</sub> ever before had all three boys napped simultaneously]].

Let us go step-by-step through the derivation of (40). In (40), NEG<sub>2</sub> starts out in the embedded clause and licenses phonological deletion of NEG<sub>3</sub> (which is responsible for the subject–auxiliary inversion). NEG<sub>2</sub> then raises into the matrix clause to be phonologically deleted under [NEG<sub>1</sub> *know*], just as was the case in the constructions involving negative indefinites. Since NEG<sub>2</sub> raises from the embedded clause into the main clause, all deleted negations and their licensors of the deletion are clausemates.

An important ingredient of this analysis is the raising of one of the negations (NEG<sub>2</sub>) from the embedded clause into the main clause. Empirical evidence for the fact that under such an approach, raising must have taken place, again, comes from island effects. Horn-clauses cannot constitute syntactic islands when licensed by a Cloud-of-Unknowing predicate.

- (41) 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 of.

CP15 are correct that, in their system, (40) is an alternative solution. However, what is problematic is that if raising a negation (NEG<sub>2</sub>) out of a Horn-clause into a matrix clause is possible, nothing rules out (42) as an additional underlying structure. If negations may raise out of embedded clauses into their respective matrix clauses, both (40) and (42) should be grammatical. If such movements were forbidden, both (40) and (42) would be ruled out.

- (42) [I do NEG<sub>1</sub> know [that  $\langle$ NEG<sub>1</sub> $\rangle$  ever before had all three boys napped simultaneously]].

But since (40b) is the structure that gives rise to the Neg-Raising reading, it is predicted that the sentences in (37) should exhibit the corresponding Neg-Raising readings in (38) as well, contrary to fact.

CP15 argue that one can rule this out by stipulating a condition that states 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 (CP15, (70)).

But note that such a condition is not independently motivated: its primary motivation is that that negated Cloud-of-Unknowing predicates do not yield Neg-Raising readings. The question thus remains open as to why this condition is necessary and why it would not be possible to have a negation raised into such a main clause.

Apart from this, it makes empirically incorrect predictions. Take (43a).

- (43) a. Nobody doesn't know [that ever before had all three boys napped simultaneously].  
 b. Nobody knows that never before had all three boys napped simultaneously.

This sentence contains one element *nobody* that must have been base-generated in the matrix clause. Hence, the condition is independently met. Then, according to CP15, an embedded negation may raise into the matrix clause, and the sentence is predicted to have the reading in (43b), contrary to fact.

Naturally, one can reformulate the condition in such a way that this particular problem disappears. However, the problem at stake is bigger: The *explanans* here is actually the *explanandum*. Positing a condition like CP15's (70) is at best descriptively adequate, but does not explain why Cloud-of-Unknowning predicates could not give rise to Neg-Raising readings. Hence, the solution CP15 provide in order to account for the syntactic/semantic behaviour of Horn-clauses under negated Cloud-of-Unknowning predicates still suffers from the same problem (a predicted, but unattested Neg-Raising reading) as their original proposal. Unless such readings are ruled out by ill-motivated brute force, both the CP14 and the CP15 proposals overgeneralize.

### 3.2 Phonologically Deleted Negations

To defend their proposal that (optionally present) semantic 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.<sup>8</sup>

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).<sup>9</sup>

- (44) Marie ne mange \*(pas/rien).  
 Marie NEG eats not/nothing.  
 'Marie doesn't eat/Marie doesn't eat anything.'

However, when combined with a few particular modals, such as *pouvoir* 'must', *savoir* 'know', or the verb *cesser*

('stop'), *ne* suffices to express negation. CP14 present examples like (45).

- (45) a. Je ne peux (pas).  
 I NEG can not.  
 'I can't.'  
 b. Il ne cessait (pas) de crier.  
 He NEG stopped not of cry.  
 'He didn't stop crying.'  
 c. Tu ne sais (pas).  
 You NEG know not.  
 'You don't know.'

CP14 take this to be evidence for the deletion of a semantic negation. They formulate a rule stating that NEG can be deleted in the contexts of verbs such as *pouvoir*, *cesser*, *savoir* (and *oser* ('dare')). For them, the examples like (45) contain a semantic negation that has been deleted. However, as such examples are restricted to only a handful of modals, they can alternatively be 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 (45) 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 also lacks proper evidence.

This is, however, different for the second kind of examples 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, certain sentences containing a minimizer (and similar pairs of sentences with other pejorative minimizers) with a negation have the same meaning (cf. Sailer 2006) as they would have without a negation. The construction is quite restricted and only works with a few verbs that expressing concern, interest, etc. An example is given in (46).

- (46) 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.'

<sup>8</sup> A third case study concerns *too + infinitive* cases (e.g. *Bill is too lazy to work*), which I do not discuss in detail in this paper for reasons of space. I refer to Romoli (2013) for a discussion that aims at discarding *too + infinitive* constituting evidence for phonologically deleted negations.

<sup>9</sup> For more discussion on the fact that French *ne* is an expletive negation, see Godard (2004), Zeijlstra (2010), and references therein.

For CP14, the fact that the sentences with and without negation have the same meaning is evidence that (46a), which lacks an overt negation, must contain a covert negation. Hence, they argue that there is another rule that allows phonological Neg-Deletion in these German constructions.

However, the semantic similarity of the two readings need not follow from the postulation of a covert negation in (46a). Here an alternative analysis is possible too. One may argue that the two sentences have different readings whose usage conditions are more or less identical. If the reading of (46a) 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 (or simply the degree of the speaker's interest in shit)—(46a) expresses that the speaker's interest lies below this threshold. That means that (46a) expresses that the speaker has no contextually salient degree of interest.

However, if that is the case, (46a), as well as other cases where an expression containing an extremely low degree, can be uttered in exactly the same situations where the speaker expresses no degree of interest at all by uttering (46b). Hence, the similarity of the readings in the minimal pair in (46) can be explained without postulating any covert negation.

Since such constructions require that the used minimizer denotes a degree even lower than a contextual threshold that indicates a minimal degree of concern, knowledge, etc., such minimizers are generally pejorative expressions (as is the case here). This analysis would also extend to Postal's treatment of *squat* (cf. Postal 2004), where the same pattern emerges: both *I know squat about negation* and *I don't know squat about negation* have the same meaning or usage conditions. Expressions containing minimizers that do not denote degrees even lower than such contextual thresholds, lack this effect. *I didn't mean a word of it* still has a different reading than *I meant a word of it*, since the latter (to the extent that such an expression is grammatical) still conveys that there is some contextually salient degree to which 'I meant what I said'. Arguably, this also explains why such expressions are restricted to predicates expressing interest or knowledge (and why they generally involve pejorative minimizers).

Interestingly, the two analyses make different predictions. For the alternative analysis, (46a) is a positive sentence and (46b) 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*, but they cannot be continued by *auch nicht*. Negative clauses, on the other hand, trigger *auch nicht* continuations and only marginally allow *auch* continuations:

- (47) 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 (46), as shown below. Hence, the test shows that (46b) carries a semantic negation, but (46a) does not, disproving CP14's covert negation analysis.

- (48) 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 neither is he.'
- b. Das interessiert mich keinen Dreck, und ihn auch ??(nicht).  
That interests me no dirt, and him also not.  
'I'm not interested at all, and neither is he.'

This test shows that in the German cases, independent evidence can be provided for the absence of covert negations in examples such as (46)a.<sup>10</sup> As such examples (along with the indeterminate cases concerning French negated modals), form the major empirical evidence for the type of phonological NEG-deletion that CP14 employ, this renders the allusion to covert negations in the examples involving Neg-Raising and Cloud-of-Unknowing predicates void of independent motivation.

This, I think is a welcome step, as the allusion to pairs of phonologically deleted negations seems the most counter-intuitive assumption CP14 make. For one, processing of double negation is notoriously hard and generally restricted to special denial contexts (cf. Horn 1989). An example like (49a) is not easy at all to parse, and speakers have quite a bit of trouble to grasp its meaning. The question then immediately arises as to why speakers would no longer have trouble if the additional negations in such sentences are not phonologically realized (and for which there is only indirect evidence). Even more puzzling is that language users would also have to resolve that one of these covert negations underwent raising. In those cases, where there would be a clear signpost of negation present in the embedded clause (such as a strict NPI or a Horn-clause), there might be evidence to parse a lower, raised, covert negation, but in examples like (49b), such a signpost is even lacking. Hence, it remains unclear why language users would have no problems in understanding a sentence like

<sup>10</sup> Again, similar diagnostics apply to *squat*: *I know squat about negation, and Mary knows squat about negation, too.* vs. *I don't know squat about negation, and Mary doesn't know squat about negation, either.* Thanks to Larry Horn for pointing this out to me.

(7) (repeated as (49b)) with its Neg-Raising reading under CP14's approach.

- (49) a. Nobody doesn't suppose that nuclear war is not winnable.  
 b. Nobody NEG<sub>1</sub> supposes that nuclear war is NEG<sub>2</sub> winnable.

I would therefore like to tentatively conclude that the absence of evidence of phonologically deleted negations à la CP14 so far suggest that an approach to Neg-Raising that contains phonologically deleted negations is on the wrong track. However, one possible caveat must be mentioned. The arguments presented above do not entail that phonologically covert negations cannot exist at all. For instance, in Ladusaw (1992), Zeijlstra (2004, 2008), and others, it is argued that negative indefinites (so-called neg-words) in Negative Concord languages may enter a syntactic Agree relation with a possibly covert negation. In such configurations, covert negations are, however, syntactically licensed by an agreeing overt negative element and there is, thus, clear morphological evidence for the presence of a silent negation. Moreover, such negations must always remain unrealized, unlike the cases in (45)–(46), where NEG-deletion applies optionally. In addition, such negations are not dependent on the choice of verb, as is the case with French modals or German pejorative NPIs. Such licensing mechanisms, therefore, do not extend to the kind of examples presented and discussed in CP14.

### 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 where a Horn-clause or a strict NPI is licensed by a clause-external, negated Neg-Raising predicate. As shown before, if such strict NPIs or Horn-clauses are in a syntactic island (or form an island themselves), this movement is blocked, and such licensing is no longer possible, as is exemplified for strict NPIs in (50) and for Horn-clauses in (51):

- (50) \*That Carolyn will breathe a word about it, Stanley doesn't expect.  
 (51) \*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 is a syntactic island. However, this prediction is not borne out. Examples (50) and (51) can easily give rise to a Neg-Raising reading if the strict NPI is absent

or if subject–auxiliary inversion does not take place, as illustrated in (52)–(53). See also Romoli (2013) who presents more evidence for this claim.

- (52) That Carolyn will breathe, Stanley doesn't expect.  
 'Stanley expects that Carolyn won't breathe.'  
 (53) 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 (50) and (51) should not be problematic either. The only way to account for Neg-Raising readings in (52) and (53) is by alluding to some pragma-semantic mechanism along the lines of Bartsch (1973) and her successors (cf. Collins p.c.).

This has important consequences. It shows that under CP14's approach, the pragma-semantic approach must be valid throughout. That means that a sentence like (1a), repeated as (54) below, is actually ambiguous between two types of Neg-Raising readings. After all, there is no reason why the pragma-semantic approach would apply in (52)/(53), but not in (1a)/(54). The example in (1a)/(54) has thus two readings if CP14's approach is correct (next to the literal, non-Neg-Raising reading): one where the Neg-Raising reading comes from the low interpretation of the raised negation, and one as a result of the inference that comes from the excluded middle presupposition.

- (54) I don't think you're right.  
 a. I NEG think you're <NEG> right. (syntactic Neg-Raising)  
 b. I NEG think you're right. (pragma-semantic Neg-Raising)

However, the syntactic approach is then no longer an alternative analysis to the standard, pragma-semantic approach, but rather an account that is at best co-existent with it.

### 3.4 Summing Up

What we observed in this section is that CP14/15's approach both overgeneralizes and undergeneralizes. It predicts Neg-Raising readings where they are not attested, and it predicts the absence of Neg-Raising readings where they are found. Moreover, one of the most important assumptions that this syntactic approach to Neg-Raising builds on, NEG-deletion of the type illustrated in the examples, cannot be motivated independently, despite claims to the opposite. A minimal requirement for this approach to be compatible with the observed facts is stating that the syntactic and the pragma-semantic approach are both correct and

that there are two different sources for Neg-Raising readings (cf. Collins p.c.).

From a perspective of scientific parsimony, this is unattractive. It is also unattractive that particular stipulations have to be made for the alleged phonological deletion of negations and the absence of Neg-Raising readings with negated Cloud-of-Unknowing predicates.

However, at the same time, as we saw in Sect. 2, it appears that various facts, most notably the licensing of Horn-clauses under negated Neg-Raising predicates, seem to favour the syntactic approach, and have not been explained under the standard, pragma-semantic approach to Neg-Raising. Only if this standard, pragma-semantic approach to Neg-Raising is able to account for these facts as well, can the syntactic approach be rejected and can the phenomenon of Neg-Raising be exclusively the result of inferences resulting from excluded middle presuppositions.

#### 4 Reinstalling the Standard, 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, it predicts Neg-Raising readings to be impossible in cases where they are actually found, and, 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, in order to reinstall the standard, pragma-semantic approach, it must be shown that this approach can also capture the observed facts concerning Horn-clauses (and maybe strict NPIs in their slipstream). This may not be a straightforward task, as the standard, pragma-semantic approach to Neg-Raising does not take the negation to start out in the lower clause in order to have it reconstructed at a later stage. However, as I show below, it is still possible to unify the facts presented by CP14 with this standard, pragma-semantic approach to Neg-Raising.

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. We already saw that the evidence concerning strict NPIs is weaker than the evidence for Horn-clauses; strict NPIs do not form evidence for negative movement. As far as the latter is concerned, even though it is not confirmed that Horn-clauses involve negative movement, it has not been confirmed either that such clauses can be accounted for

without negative movement. Naturally, in the latter case (no negative movement), there would be no problem for the pragma-semantic approach: negation would just be base-generated in its surface position and the Neg-Raising reading would always be a pragmatic inference.

Hence, it looks like the validity of the syntactic approach crucially depends on whether clause-externally negated Horn clauses involve movement or not, depending on the correctness of the parallel with parasitic licensing and whether that involves negative movement. If not, the pragma-semantic approach can just be reinstalled. But even if Horn-clauses (and perhaps also strict NPIs) do indeed form evidence for negative movement, it turns out that they do not form any evidence against the pragma-semantic approach either. For this, it is important to observe that CP14's central claim (negation starts out in a lower clause and is semantically interpreted there) is actually a twofold claim: one claim saying that the negation starts out below, and the other claim asserting that negation is interpreted in this lower position. Note, though, that CP14 only provide evidence for the first claim. To the extent that the evidence is valid, Horn-clauses (and strict NPIs) licensed by negated Neg-Raising predicates show that the negation in some cases may start out in the lower clause indeed. However, nothing forces it to be also interpreted in this lower clause.

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 (only) 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 (if these strict NPIs are indeed licensed by a clause-internal negation) or Horn-clauses. The examples in (55) would then have syntactic structures as in (56), with <NEG> again indicating the basis position of NEG. The subject–auxiliary inversion (and perhaps the strict NPI as well) are licensed by the lower negation before it raises into the higher position, where it will be interpreted.

- (55) 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.
- (56) 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 <have> played <NEG ever before> such a major role in a kidnapping.

Such an analysis makes already all the relevant correct predictions. 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 (Sect. 3.3) naturally follows. In (52), repeated as (57) 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.

- (57) That Carolyn will breathe, Stanley doesn't expect.  
'Stanley expects 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 may indeed be the case in the examples in (55), but in other examples—for instance (1) repeated as (58) below—no negative movement has been going on. The surface position of negation is also its base position here.

- (58) 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 (59), 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 of the job. Note also that if in (60a) where the negation must have started out below to license *until next year*, it can still raise into the position where it is interpreted together with the existential realized as *nobody* (60b), presuming that negative indefinites are the phonological realization of an adjacent negation and indefinite (cf. Penka 2011, Zeijlstra 2011). Consequently, no phonologically deleted double negations are needed.

- (59) Nobody supposes that nuclear war is winnable.

- (60) a. Nobody supposes that nuclear war is winnable until next year.  
b. NEG  $\exists$ -body 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 complement 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 responsible for the Neg-Raising readings. Ideally, what renders some predicate a Neg-Raising predicate 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, unless it can be proven that these two properties are independent.

But, this independency can indeed be proven. Interestingly, there are predicates that only have this excluded middle or homogeneity presupposition and lack the weaker locality restrictions. *To be of the opinion* is a good example (Collins p.c.). Example (61a) clearly has the reading (61b). However, it cannot license strict NPIs or Horn-clauses.

- (61) a. I am not of the opinion you're right.  
b. I am of the opinion you're not right.
- (62) 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 on their complement clauses, and whether predicates come with an excluded middle or homogeneity presupposition, are independent properties. This predicts that there are indeed 4 (= 2 × 2) possible predicates with respect to the presence or absence of excluded middle or homogeneity presupposition, and with respect to the weaker or stronger locality conditions, as demonstrated is in the following table.

(63) Four types of predicates

	Imposes weak locality constraints on its complement	Imposes strong locality constraints on its complement
Excluded middle or homogeneity presupposition present	<i>think, believe, expect</i>	<i>to be of the opinion, to be true, to be the case</i>
Excluded middle or homogeneity presupposition absent	<i>know, to be convinced</i> ( <i>Cloud-of-Unknowing predicates</i> )	<i>say, claim, predict</i>

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 complement clauses than factive predicates do (cf. Giorgi 2004, a.o.). Both Neg-Raising and Cloud-of-Unknowing predicates indeed are generally non-factive.

The crucial property, that distinguishes predicates that allow licensing of strict NPIs in embedded (Horn-)clauses from predicates that do not, lies in the weaker locality conditions they impose on their complement clauses. The fact that clauses containing such predicates form a single syntactic domain with their complement clause can both account for the presence of extraction facts as well as the presence of domain-internal long-distance licensing. Both phenomena are known to be subject to the same kind of syntactic locality conditions. Hence, strict NPIs and Horn-clauses, licensed by negated Neg-Raising predicates can, but do not have to, start out in the embedded clause, depending on how the licensing of strict NPIs or parasitic licensing works exactly. Under the proposal spelled out above, (55a) can be analysed either as in (64a) or (64b), as in both cases the NPI and its licenser are in the same syntactic domain.

- (64) a. Stanley does NEG believe that Carolyn will <NEG> breathe a word about it.  
 b. Stanley does NEG believe that Carolyn will breathe a word about it.

At this stage, nothing principled hinges on either of the analyses, but there are reasons to actually favour (64b) over (64a). The first reason is that there is no need for the

movement in (64a), and then application of Merge-over-Move would already favour (64b) over (64a). But more importantly, it is unclear what the trigger would be for the movement in (64a). Why would negation in (64a) not stay in situ? Note that this is a question that is relevant for any version of the syntactic approach to Neg-Raising, not only for CP14. Assuming that in those cases, where strict NPIs are licensed under negated Neg-Raising predicates, negation starts out in the higher clause avoids having to address this question, though. For this reason, I argue that it seems more promising to think of strict NPIs, licensed under negated Neg-Raising/Cloud-of-Unknowing predicates, to be licensed by a negation that has not undergone any movement.

Things are slightly different for Horn-clauses licensed under negated Neg-Raising predicates. Take (22), the derivation of (55b), again, repeated as (65).

- (65) a. I think that the media have [NEG1 ever before] played such a major role.  
 b. I think that [NEG ever before] have the media <have> played <[NEG ever before]> such a major role.  
 c. I NEG think that [<NEG> ever before] have the media <have> played <[NEG ever before]> such a major role.

In (65), more can be said about the triggers of the movement. The first movement step can be motivated to license the fronted auxiliary; existing theories of Negative Inversion will require that some negative element moves into the specifier position of the CP whose head hosts the auxiliary. Hence, if Horn-clauses indeed display movement of the strict NPI directly to Specifier of the C-head, such movement steps can be accounted for.

Still, the second trigger question remains open. What motivates the step from (65b) to (65c)? Again, there does not appear to be a trigger for movement in the matrix clause. However, here I would like to point out that this instance of movement could also be accounted for. Such instances of movement may be the result of a more general phenomenon. Negation is known not to be at ease in the specifier position of a CP (cf. Zeijlstra 2013 and references therein). This can be shown on the basis of the following Dutch and German examples, so-called V2 languages with the finite verb moving into the head position of the main clause CP, whose specifier position generally can be filled, but cannot be occupied solely by negation.

- (66) a. \*Niet heb ik Hans gezien.  
NEG have I Hans seen.  
Int.: 'I haven't seen Hans.'
- b. \*Nicht habe ich Hans gesehen.  
NEG have I Hans seen  
Int.: 'I haven't seen Hans.'
- (67) a. \*Ik heb gezien niet dat Hans ziek is.  
I have seen NEG that have Hans ill is.  
Int.: 'I haven't seen that Hans is ill.'
- b. \*Ich habe gesehen nicht dass Hans krank ist.  
I have seen NEG that have Hans ill is.  
Int.: 'I haven't seen that it's not the case that Hans is ill.'

For Zeijlstra (2013) these examples are bad, since negation should be assumed to be base-generated in these positions. When it would be part of a bigger constituent, this constituent could be said to be base-generated in a lower position and then reconstruct; therefore, bigger negative constituents can be included in the examples above in the position where single *niet/nicht* is ruled out (cf. *Nooit heb ik Hans gezien* 'Never have I seen Hans'). Reconstruction at LF of the negated NPI (within the clause), however, is one option; raising the negation to a higher position (outside the clause) could be another one. But as said before, only predicates with weaker locality constraints allow for such a movement option. Hence, if Horn-clauses do indeed provide evidence for negative movement, the triggering of this movement might be less unexpected than other cases of movement that CP14/15 argue for.

## 5 Conclusions

As shown in the previous section, the proposed alternative in this paper reinstalls the standard, pragma-semantic approach to Neg-Raising. Whereas the syntactic approach suffers from various problems, none of the arguments

presented in favour of it form an argument against the standard, pragma-semantic approach, as it is equally well apt to account for the relevant distribution of strict NPIs and Horn-clauses (irrespective of the fact whether the proposed evidence by CP14/15 involves movement of a negation or not), as well as the behaviour of negative parentheticals. There are thus no non-theory-internal reasons to maintain CP14's syntactic approach to Neg-Raising to explain why negation sometimes seems to take scope from a position inside an embedded clause. The wide range of novel and striking facts presented in CP14 is fully compatible with the standard, pragma-semantic approach to Neg-Raising.

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