Classical NEG Raising

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Chapter 1 Background

English examples like (1a) seem on one reading to be paraphrases of corresponding examples like (1b):

(1) a. Karen expected that the moon would not turn purple.
b. Karen did not expect that the moon would turn purple.

In addition to the interpretation of (1b) which is a paraphrase of (1a), (1b) also has another interpretation where Karen had no expectations at all, perhaps because she had not thought of the matter.

This a priori unexpected semantic similarity between structures with negation in the complement clause and those with it in the main clause, found in many other languages as well, has been the subject of a great deal of work; see Horn (1972b, 1975, 1978, 1989) for extensive references to earlier periods dating back as far as Saint Anselm in the eleventh century. Beginning with Fillmore (1963), within the generative grammar tradition, there developed in the 1960s and 1970s considerable agreement that the roughly equivalent reading of pairs like (1a, b) was a function of a *syntactic* phenomenon of negation (henceforth: NEG) raising, from the complement into the main clause. That is, the shared reading was taken to be associated with cases like (1b) because the main clause NEG originates in the complement clause and is raised into the main clause. This conclusion involved the assumption that the pre-raised structure determined the meaning. The original syntactic conception is nicely represented in:

(2) Horn (1972b: 120)

"It is convincingly argued that the ungrammaticality of the sentences which result from substituting verbs such as *demand* or *claim* for *want* and *believe* –

(3) a. *Chauncey doesn't demand to die until he has touched fair Hermione's lips again.
b. *I don't claim you have remembered to button your fly in years.

reveals that NEG-raising is a minor rule applying to some predicates of opinion and expectation…, of intention…and of perceptual approximation…"

The posited raising involved a transformational movement rule, and we will assume such an approach in this article. But NEG Raising, as argued for in this work, could equally be given a nontransformational syntactic account.[1]

We refer to the phenomenon illustrated in (1) as *Classical NEG Raising* (hereafter: *Classical NR*). The modifier is motivated in relation to the fact that Postal (2005) posits a wide variety of NEG raisings distinct from that taken to be present in (1b). For concreteness, we assume that a syntactic version of Classical NR has the form in (3):

[1] Among the possible syntactic views of Classical NR which are not transformational are those which involve no generative rule at all. This would be the case in any framework assuming a grammar to be a model-theoretic system; see e.g. Pullum and Scholz (2001, 2005, 2007), Johnson and Postal (1980), Postal (2011).

(3) Classical NR

Raise NEG from clause C into the Aux position of the next higher clause dominating C.

Of course, (3) is schematic and leaves many necessary properties unmentioned. Some of these are specified in what follows. Specifically, (3) says nothing about the origin positions of raised NEGs and leaves the definition of 'Aux position' vague. Certainly though, all cases of *n't* adjacent to a finite auxiliary are in the Aux position, as are most instances of directly post-Aux *not*.[2]

While popular at the earlier period, not so long after Fillmore's (1963) article, acceptance of a syntactic approach to Classical NR began to erode; see Jackendoff (1971), Pollack (1974). Increasingly, a syntactic view of Classical NR was challenged by pragmatic and semantic approaches.[3] And even earlier adherents of a syntactic conception, e.g. Horn (1972a: 228; 1972b: 120, 127), came to reject it in favor of nonsyntactic views; see e.g. Horn (1978, 1989), Horn and Bayer (1984).

Uncontroversially, the Classical NR phenomenon only exists with a particular subset of higher clause predicates. Horn (1975, 1978, 1989: 322-330) argued extensively that this class has a universal semantic characterization, while stressing that it is nonetheless subject to parochial lexical restrictions excluding elements that otherwise fall under the universal characterization. These important issues are not germane to the present discussion. So we simply refer to a predicate which permits instances of Classical NR as a *Classical NR Predicate* (hereafter: CNRP) with no attempt to characterize commonalities defining them. Cited members of this class in English include those of (4) although there is a certain amount of speaker variation for some of these.

(4) appear, advise, believe, choose, expect, feel, feel (like), figure, guess, imagine, intend, likely, look (like), plan, reckon, seem, sound (like) suppose, think, want, wish

While intuitions about Classical NR readings are often subtle, the difficulties seem to arise in determining whether CNRP clauses with main clause NEGs have the reading equivalent to that when the NEG is only in the complement. But if one chooses a non-CNRP (using Horn's (1978) semantic criteria), then the lack of such a reading is palpable. Consider the following examples with *figure out*, which unlike *figure*, is not a CNRP:

(5) a. Karen figured that the moon would not turn purple.
b. Karen did not figure that the moon would turn purple.
c. Karen figured out that the moon would not turn purple.
d. Karen did not figure out that the moon would turn purple.

Whereas (5a) has a reading equivalent to (5b), (5c) clearly has no reading equivalent to (5d).

It will be convenient to refer to the *minimal* clause where a putatively raised NEG actually sits as its *host*, and to the clause where it putatively originates, as its *origin*. Thus in a syntactic view of Classical NR, there is raising of a NEG from its origin to its host. In many cases, a particular NEG will reach its host via several successive raisings, each into a clause containing a CNRP, hence a clause capable of independently acting as a host. In nonsyntactic views of Classical NR, the NEG in the host clause in no sense occupies a syntactic position in a lower clause distinct from its position in the host clause.

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[2] Exceptions include instances of *not* following *can* where the NEG scopes under the auxiliary.

[3] Seuren (1985: 166-172) represents a rare later defense of syntactic views against nonsyntactic alternatives. McCawley (1998: 595-604) is the most recent instance we can cite of a continuation of a syntactic view.

A recurrent type of argument for a syntactic conception of Classical NR stands on the claim that there are various *negative polarity items (NPIs)* which require *local* licensers.[4] Sometimes these are called *strict* NPIs, a terminology we will follow.[5] For present purposes we can be rather vague about how *local* needs to be understood. Minimally, lack of separation by a clause boundary is required (the licenser and NPI must be 'clause-mates'). Many NPIs (most notably *any* forms) do not manifest any locality requirement (see (6b)). The NPI most widely cited as requiring a local licenser is *until*, as in (6a).

(6) a. Calvin did not believe/*claim that Mona would move in until June.
b. Calvin did not believe/claim that Mona stole any of the money.

Contrasts like that in (6a) are typical of the difference between CNRPs like *believe* and non-CNRPs like *claim*. In syntactic terms, such contrasts arise from the fact that the local NEG needed by the strict NPI can raise out of the complement clause and end up in the main clause with *believe* but not with *claim*.[6]

We will appeal to a variety of other strict NPIs throughout.[7] First, we often cite fronted NPI-containing phrases like that in (7), a construction type discussed at length in chapter 3. The NPIs on which such fronted phrases are built are in general not strict NPIs, but we take fronting to render them such.

(7) Deborah did not believe/*argue that in any sense was he anti-American.

This claim might well strike a reader as bizarre at best, incoherent at worst, since in fact such phrases never occur with superficially local ('clause-mate') licensers. But we ignore this issue, driven by the parallelism between data sets like (6) and (7).

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[4] See Jackendoff (1971: 293), Horn (1972b: 120; 1975: 282; 1978: 136-150), Seuren (1974a: 184-185; 1974b: 121), Smith (1975: 68-74), Prince (1976: 405) for various instantiations of this line of argument. Horn (1978: 143-150) elaborates many difficulties facing this argument type, which we mostly ignore here, since this argument type is not the focus of this work.

[5] The term 'strict NPI' has been used in various senses in the literature; see e.g. Progovac (1994: 81, 145), citing Linebarger (1981), Linebarger (1987: 329, 347), van der Wouden (1997: 76), Giannakidou (2011: 1680). Our usage (an NPI requiring a local licenser) essentially follows that of Linebarger, Progovac and Horn (1978: 136-140).

[6] Contrasts like (6) must be segregated from cases of so-called *secondary triggering*, in which a strict NPI cooccurs in a local domain with a non-strict NPI; see e.g. Horn (2001: 181). Such cases are in general grammatical even in NEG-free complement clauses with non-CNRPs; compare (6) and:

(i) Calvin did not claim that anyone would move in until June.

We cannot consider why examples like (i) are well-formed. But we suspect that the range of ideas touched on in section 3.4 are relevant.

[7] There are many other strict NPIs which space prevents utilizing in the text. Here is a list of others which we believe function in essentially the same way as far as Classical NR is concerned as those we do cite. Readers may wish to substitute some of these in examples should they find that certain NPIs that we consider strict lack that property in their dialects. We cite them with a preceding *not* to bring out the often idiomatic meaning: *not believe one's eyes, not for anything in the world, not give it another thought, not be half bad, not long for this world, not miss much, not move a muscle, not be much of (something), not one iota, not be one's place, not sleep a wink, not feeling so hot, not take no for an answer, not accept someone's refusal, not touch (something) with a ten-foot pole, not worth a dime.*

Second, we take the idiomatic meaning of the phrase *stop at anything*, identical to that of the related *stop at nothing*, to define a strict NPI:

(8) a. Ted will *(not) stop at anything to get promoted.
b. I didn't believe/*state that Ted would stop at anything to get promoted.

Third, we assume the idiomatic expression *breathe a word about* defines a strict NPI:

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

Fourth, we take the expression *living soul* to represent a further strict NPI:

(10) a. Sandra *told/didn't tell a living soul about her sister.
b. Shelly didn't figure/think/*admit/*figure out that Sandra told a living soul about her sister.

Fifth, the phrases *a damn/fucking thing* form strict NPIs, as illustrated in (11):

(11) a. *(Not) a damn/fucking thing had gone wrong.
b. Steve didn't figure/*figure out that a damn/fucking thing had gone wrong.

Sixth, we find the expression *lift a finger* to form a strict NPI, as seen in (12):

(12) a. Karen would *(not) lift a finger to help Sidney.
b. Karen did not think/*declare that Ted would lift a finger to help Sidney.

Seventh, minimizers of the class {*squat*, *jack* (*shit*),…} are also assumed to be strict NPIs, as illustrated in (13):

(13) a. Ted would *(not) understand $squat_A$ about Turkish politics.
b. Karen did not expect/*predict that Ted would understand $squat_A$ about Turkish politics.[8]

Eighth and last, adverbials of the class *in days/weeks/months/years* also form strict NPIs:

(14) a. Teresa has *(not) been seen in days/years.
b. I don't think/*agree that Teresa has been seen in days/years.

In what follows, we freely cite sentences with one or another of the strict NPIs in (6)-(14) to make various points without further explicit indication of their strict NPI status.[9]

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[8] As discussed in Postal (2004, chapter 5), members of the *squat* class in general have both NPI uses, equivalent to 'anything', and non-NPI uses, equivalent to 'nothing'. Only the former is relevant here and all stars on *squat* sentences throughout this work refer only to that use, which is (thus redundantly) indicated by the inscription $squat_A$ (where A picks out the 'anything' reading).

[9] Examples like (ia-d) with strict NPIs in restrictive relative clauses parallel cases in (6)-(14).

(i) a. No one who left early/*until 10PM was arrested.
b. No one who they believe that she had spoken to anyone about/*who they believe that to anyone had she spoken about was hired.
c. *No one who would stop at anything was hired.
d. No one who said anything/*breathed a word about it was promoted.
e. No one who criticized anyone/*a living soul got interviewed.
f. No one who learned anything/*a fucking thing about that organization survived.
g. No one who worked/*lifted a finger to help Louise regretted it.
h. No one who knows anything/*$squat_A$ about lasers believes that.
i. No one who has been to Bulgaria recently/*in years would agree with that.

Such facts reveal that the possibility of a strict NPI occurring in the complement clause of a CNRP without a local licenser is the special case which needs explication.

In the literature advocating a syntactic view of Classical NR, contrasts between CNRPs and non-CNRPs like those in (6)-(14) have regularly been taken to support a syntactic raising view of the phenomenon.[10] The logic is straightforward. If strict NPIs require local licensers, then only a syntactic conception of Classical NR limited to CNRPs provides local licensers in the good cases and guarantees their non-presence in the bad ones. While we believe the argument involving strict NPIs is compelling (but see Gajewski 2007 for an attempt to deal with the strict NPI data in a semantic framework), the main data in this work is of a completely different sort.[11]

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[10] Vincent Homer (personal communication) observes contrasts like the following:

(i) a. It is unlikely that Kyle said a thing.
b. *It is not unlikely that Kyle said a thing.

The issue is why Classical NR, which is fine with the strict NPI *a thing* in (ia) fails in (ib). Homer suggests (as part of a general view of NPI licensing) that the ungrammaticality is due to the fact that the external NEG meaning in (ib) combines with the prefixed negation *un-* meaning to create an increasing context. This view is not available to us since in our terms the external NEG originates in the complement and has no semantic function in the main clause at all.

One alternative would attempt to reduce (ib) to the principle barring Classical NR into an independently negative clause:

(ii) *I don't not believe that Kyle said a thing.

We cannot consider this topic further here.

[11] Critical to the argument for Classical NR from strict NPI data are putative patterns like (10), repeated here, where (ia), lacking a CNRP main verb, putatively contrasts with (ib), which has such:

(i) a. Sandra *told/didn't tell a living soul about her sister.
b. Shelly didn't figure/think/*admit/*figure out that Sandra told a living soul about her sister.

We cite other instances of such cases in what follows.

However, in many of these cases (though not with the *squat* class), we find that expressions of the form in (ib) not based on CNRPs are nonetheless grammatical only if the main verb is not strongly stressed and the relevant part of the NPI is. So despite (10b), (iia) is acceptable for one of the authors. (iib) gives an additional example:

(ii) a. Shelly didn't admit that Sandra told a living SOUL about her sister.
b. Shelly didn't admit that Sandra breathed a WORD about the pact

In such cases, we find the relevant sentences to have an associated scope fact: the NPI and the main clause NEG form semantically a high scope negative quantifier. That is, we suggest that (iia) is equivalent to:

(iii) No one$_X$ is such that Shelly admitted that Sandra told X about her sister.

Similar facts are seen in infinitival complements (this time, including the *squat* class):

(iv) a. I didn't tell her to do a single thing/squat$_A$ to help him.
b. They didn't require us do a single thing to help him.

Here also it could be argued that the main clause negation and strict NPI in the complement form a negative quantifier with main clause scope. Vincent Homer has pointed out related facts involving negative verbs like *doubt* and *refuse*.

One conclusion which might be drawn is that, despite our assumptions, cases like (ii) and (iv) show that so-called strict nominal NPIs cannot be used to argue for the syntactic nature of classical NR since they in fact do *not* require local licensers, at least when stressed. Evidently,

Over time, purely semantic or pragmatic approaches appear to have become increasingly favored and our impression is that such views are dominant today.[12] Horn (1989: 308-330) represents an extensive argument for a pragmatic approach. See Tovena (2001), Gajewski (2005, 2007), Sailer (2006) and Homer (2010) for more recent presentations of nonsyntactic views.[13]

To clarify the issues dividing syntactic and nonsyntactic views of Classical NR, we will briefly characterize a particular nonsyntactic approach, due to Bartsch 1973 (following the discussion in Horn (1978, 1989), Horn and Bayer (1984), and Gajewski (2007)). This is far from an arbitrary choice since Bartsch's account is arguably the essential source for all modern nonsyntactic conceptions of Classic NR.

Consider a pair like (15), differing essentially only in whether the negation appears in the main clause or the complement clause:

(15) a. I don't think it will rain today.

b. I think it will not rain today.

Given Classical NR, (15a) is syntactically ambiguous. Either *not* is raised or it originates (without raising) directly in the matrix clause. Bartsch's conception, however, recognizes no syntactic ambiguity in (15a). Rather, she assumed that on a particular pragmatic assumption, the statement in (15a) can entail the statement in (15b). The pragmatic assumption is that the speaker either thinks it will rain today, or thinks it will not rain today, and so definitely has some opinion one way or the other. In other words, it is not true that the speaker has not thought about whether or not it will rain (and hence has no opinion). Nor is it true that the speaker is undecided about whether or not it will rain. Let us call this state of affairs the *Excluded Middle Property*.

Given the Excluded Middle Property, the inference to (16c) from premises (16a, b) is justified:

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we reject that conclusion about structures like (ii)/(iv) since we consider it a genuine possibility that the NEG occurring in the main clause and the strict NPI form a syntactic quantifier DP occurring in a syntactic scope position in the main clause. From that position, the NEG can raise out of the DP (given the conception of NEG-Raising in Postal 2005) to its surface position and there is no need to recognize nonlocal licensing of the NPI in such cases even though one cannot invoke Classical NR. We discuss related analyses in section 3.4 involving NEGs and NPIs separated by clause boundaries in their overt form but arguably associated directly in main clauses in nonovert structures.

[12] Relevantly, Pullum and Huddleston (2002: 839-842) discuss the Classical NR phenomenon in some detail without even raising the possibility that it might be syntactic. And Sailer (2005) states:

(i) "Syntactic analyses of NR have been refuted by argumentation as those referred by Horn or, most recently Kloster (to appear)."

[13] Gajewski (2005: chapter 1) lays out an argument for the syntactic nature of Classical NR from Ross (1973). This argued from the existence of *negative parenthetical* structures like (i):

(i) Tanya is not, I don't believe, willing to date Horace.

Ross's argument was one of four arguments putatively favoring a syntactic approach which Gajewski outlined. Gajewski stated (p. 17) that he would subsequently show how his nonsyntactic, semantic approach to Classical NR handles all the data for the first three arguments. Arguably though, the discussion in Dowty (2006) indicates that the material cited by Ross is irrelevant to questions of Classical NR so that Gajewski's failure to provide an account is irrelevant to the viability of his semantic approach.

(16) a. $F(x, p) \vee F(x, \sim p)$ [the Excluded Middle Property]
b. $\sim F(x, p)$ [from statement (15a), taken to involve main clause negation]
c. $F(x, \sim p)$ [logical consequence of (16a, b)]

So, assuming the Excluded Middle Property, given an assertion of (15a), the apparent complement scope of the main clause NEG is simply a deductive logical consequence, seemingly rendering any syntactic raising unmotivated and redundant.

However, based on earlier observations by George Lakoff (1970) and others, Horn (1975: 281-282; 1978: 179, 183-187; 1989: 321) and Horn and Bayer (1984: 399-401) stress that such an analysis cannot easily account for the seemingly idiosyncratic lexical differences within a language and between languages. For example, even though *want* and *plan* are CNRPs, and cognates of *hope* allow the Classical NR type of reading in other languages, this verb is not a CNRP in English.[14]

Therefore, Horn and Bayer (1984) show how to render the Excluded Middle Property *lexically specific*. For example, Horn and Bayer (1984: 407) claim that there is an implicature that applies 'to a proper subset of linguistic expressions appearing in the relevant frame.' Gajewski (2007: 297, fn. 7) also seems to adopt a lexical approach, where only certain lexical items introduce the Excluded Middle Property. We do not make any assumption about whether that property should be taken to be an implicature or a presupposition in nonsyntactic approaches. More precisely, in criticizing nonsyntactic approaches, we assume only that the Excluded Middle Property is lexically specified.

In this work, we discuss several sorts of data that are difficult for a semantic/pragmatic approach outlined in (16). In chapter 2, we show that Classical NR is sensitive to syntactic islands, a fact entirely unexpected under any nonsyntactic view, specifically under an approach like the one exemplified in (16). In chapter 3, we indicate that there are certain contexts (dubbed *Horn clauses*) that demand the syntactic presence of a negative constituent. These are in fact clauses like the complement in the grammatical variant of (7). But such a negative constituent exists in Horn clauses only under the assumption of the existence of syntactic Classical NR. In chapter 4, we argue that a widely accepted and *apparently* devastating argument against a syntactic view of Classical NR (dubbed there the *Composed Quantifier Argument*) is faulty and

[14] While this claim about *hope* is standard in the Classical NR literature and certainly represents the dialects of the present authors as well, the Web provides examples suggesting that for some English speakers, *hope* is a CNRP:

(i) a. That can only be a loosely compelling idea unless we've got a 7-year rebuilding plan and don't hope to even think about contention until the ... (www.fangraphs.com/.../expect-jays-to-cash-in-current-talent-for-futu...)
b. I really don't hope I have to wait until June 2011. It's bad enough they've put back The Last Guardian until ... (www.gamespot.com/news/3d-hd-team-ico-collection-official-6276184)
c. Although I don't hope to let this happen again (until it is wanted and planned of course), I feel very good about my experience and am very thankful for every ... (www.fwhc.org/stories/alycia.htm)

These examples provide some support for Horn's view that there is a universal semantic characterization of possible CNRPs, with lexical restrictions restricting the maximum class in particular languages.

in no way conclusive. In chapter 5, we discuss the phenomenon of *Never*-raising, which is not compatible with the approach outlined in (16). Chapter 6 presents our brief conclusions.

Chapter 2 Classical NEG Raising and Islands

2.1 Absent Classical NEG Raising Readings

Consider:

(1) a. Most experts do not believe that Kevin is a werewolf.
b. That Kevin is a werewolf, most experts do not believe.
c. That Kevin is a werewolf is not believed by most experts.

Although *believe* is of course a prototypical CNRP, the Classical NR reading possible in (1a) is absent in (1b,c). The latter examples represent the topicalization and passivization correspondents of (1a).

The readings in (1) can be clarified by what we will call *the agree-test*. If the statements in (1) are followed up by *Do you agree*, different interpretations result depending on the case. When (1a) is followed by 'Do you agree?', the most natural interpretation is that the speaker is asking the hearer whether he or she agrees (with the experts) that Kevin is not a werewolf. When 'Do you agree?' follows (1b) and (1c), the most natural interpretation is that the speaker is asking the hearer whether he or she agrees about the speaker's claim that most experts (as opposed to a small number of experts) lack a particular belief. So natural follow ups are the following:

(2) a. Do you agree?
Yes, I agree that he is not a werewolf.
b. Do you agree?
Yes, I agree that most experts do not have that belief.
c. Do you agree?
Yes, I agree that most experts do not have that belief.

The absent reading property found here is entirely general for the class of CNRPs, although documentation of this is hindered by the fact that independent constraints preclude topicalization and/or passivization for the complements of many CNRPs (see Postal, 2011: chapter 9). Nonetheless, the facts below are parallel to those in (1):

(3) a. Glen didn't expect that space aliens would appear today.
b. That space aliens would appear today, Glen didn't expect.
c. That space aliens would appear today was not expected by Glen.

As expected, the intuitively grasped lack of the Classical NR reading in (1b, c) and (3b, c) is supported by the ungrammaticality of topicalized and passivized putative host clauses for Classical NR when these contain strict NPIs whose only potential licensers are in the main clause:

(4) a. They did not expect that at any time would he venture outside the space capsule.
b. *That at any time would he venture outside the space capsule, they did not expect.
c. *That at any time would he venture outside the space capsule was not expected by anyone.
d. It was not expected that at any time would he venture outside the space capsule.

(5) a. I don't believe that in any sense was he a spy.
b. *That in any sense was he a spy, I don't believe.
c. *That in any sense was a he spy was not believed (by any friends of his).
d. It was not believed (by any friends of his) that in any sense was he a spy.

(6) a. Wanda does not believe that Kevin will breathe a word about it.
b. *That Kevin will breathe a word about it, Wanda does not believe.
c. *That Kevin will breathe a word about it was not believed by Wanda.
d. It was not believed by Wanda that Kevin will breathe a word about it.

(7) a. Victor did not believe that a fucking thing had gone wrong.
b. *That a fucking thing had gone wrong, Victor did not believe.
c. *That a fucking thing had gone wrong was not believed by Victor.
d. It was not believed by Victor that a fucking thing had gone wrong.

(8) a. Laura did not believe that Sheila had prayed in years.
b. *That Sheila had prayed in years, Laura did not believe.
c. *That Sheila had prayed in years was not believed by Laura.
d. It was not believed by Laura that Sheila had prayed in years.

Striking in paradigms (4)-(8) is that the strict NPIs are grammatical in the simple active cases and in those passives where the complement clause is extraposed. These are exactly the cases where the complement clause is *not* an island.

Moreover, similar semantic and grammaticality facts are associated with clauses in subject position even without passivization:

(9) a. It is not likely that at any time will Wanda plead guilty.
b. *That at any time will Wanda plead guilty is not likely.

Example (9a) has a Classical NR reading, that is, the negation semantically can scope within the complement clause. Correspondingly, the strict NPI represented by the fronted NPI-containing PP is grammatical. In (9b), the NEG can only take scope in the matrix clause and the same strict NPI is ungrammatical.

Facts like those in (4)-(9) are highly problematic for nonsyntactic views of Classical NR for the following reason. As we have indicated, such views take the phenomenon to be based on the possibility of constructing inferences from the wide scope reading of negation in host main clauses based on a CNRP to the reading where it scopes internal to the complement. Such a possibility depends on the semantic properties of the CNRPs and the posit of the Excluded Middle Property. But as far as we can see, the relevant semantic properties of CNRPs in (4)-(9) do not vary depending on whether the complement clause is postverbal, a topic, a passivized subject, or a nonpassive subject. Nor, given the same main clause predicate in each set of cases, would one expect any variation in the Excluded Middle Property. The conclusion then is that the Excluded Middle Property holds in all these cases if it holds in any of them. The nonsyntactic approaches would then appear to wrongly predict Classical NR should be found in all of them. So, minimally, such approaches need to be supplemented with some complicating further conditions of an unclear nature.

Any syntactic view of Classical NR of course also needs to block the bad cases. But a syntactic approach has the advantage that the distribution of the constraints has a recognizable syntactic basis. For while mysterious from currently popular nonsyntactic vantage points, from a syntactic point of view, the facts in (4)-(9) are approachable by noting well-known syntactic facts. Namely, Classical NR in the bad cases would have to take place from complements which end up as topics or subjects, *both known to be syntactic islands*, while the posited raising in the

grammatical original examples like (4a, d)-(8a, d) is raising from non-island object or extraposed complement clauses.

Suppose then on the basis of the evidence so far, we posit the following constraint:

(10) Island Sensitivity of NEG Raising (first version)

A NEG cannot extract from an island.

Of course, (10) generalizes far beyond what we have shown in this work since all our evidence about the interaction between islands and NEG extraction has involved Classical NR. But that yields no general problem. Condition (10) makes a testable claim and arguably, all proposed linguistic principles generalize far beyond any fixed evidence base. At issue are the kinds of NEG raising discussed in Postal (2005) and whether these also obey island constraints. We cannot discuss the issue here for reasons of space. We provide a modified version of constraint (10) in section 3 of chapter 3.

Previous discussion (that we are aware of) of a role for island constraints in constraining the Classical NR phenomenon consists only of the remarks in Seuren (1974a: 122; 1974b: 185).[15] There he explicitly claimed that cases like (11a, b) argued that Classical NR was subject to the island constraints posited in Ross (1967 [1986]) involving complex DPs and coordinate structures:

(11) a. *I don't believe the rumour that Tom has found the solution yet.

b. *I don't think Tom has found the solution yet and is a reliable chap.

However, in our view, (11a) does not provide a straightforward argument for the relevance of island constraints. The problem is that the verb *rumor* itself is not a CNPR and it could be argued that (11a) fails simply for that reason. We in effect address this objection below by considering cases where the noun with a clausal complement corresponds to a verb which *is* a CNRP.

For coordinate cases like (11b), even though the issue of whether Classical NR is constrained by the Coordinate Structure Constraint (CSC) deserves much further study, we will focus on different island types in this work.[16]

Despite the early invocation of the role of island constraints in constraining Classical NR, other works from that and later periods fail to say anything about islands, even including the near monograph-length work of Horn (1978). And although there are extensive discussions therein of Classical NR, neither the terms *island* nor *movement* (*constraint*) occur in the index of the

[15] Pollack (1974) cited Clinkenbeard (1969) (which we have not seen) for observations to the effect that (ic) lacks the Classical NR ambiguity found in (ia, b) (We add the NPI *not* in the original to make the point maximally clear):

(i) Pollack (1974: 206-207)

a. Joel does not believe that Hildy is coming (until tomorrow).

b. It is not believed by Joel that Hildy is coming (until tomorrow).

c. That Hildy is coming (*until tomorrow) is not believed by Joel.

And of course the subject clause in (ic) is an island while the clauses in (ia, b) are not. But Pollack did not attribute the nonambiguity of (ic) to the island property, instead invoking hesitantly some semantic ideas of Kiparsky and Kiparsky (1971) about subject positions.

[16] In considering whether Classical NR is constrained by the CSC, one relevant issue is that that certain sorts of intervening scopal elements block NPI licensing (see Linebarger, 1980). It can be plausibly argued both that conjunctive *and* is a member of that class and that in cases like (11b) it scopes between the main clause NEG and the NPI *yet* (Chierchia, 2004).

mammoth and extraordinarily wide-ranging and detailed study of negation represented by Horn (1989 [2001]).

Further cases (in addition to the ones given above in (1) through (9)) support the role of island constraints in the distribution of Classical NR. Consider first clausal complements of nouns. Such nominal complement clauses are islands and condition (10) then determines that these complements cannot be origins for Classical NR. This is correct, as illustrated in (12) and (13):

(12) a. I don't believe that the moon will vanish until Thursday.
b. When do you believe that the moon will vanish?
c. I hold the belief that the moon will not vanish until Tuesday.
d. *I don't hold the belief that the moon will vanish until Tuesday.
e. *When do you hold the belief that the moon will vanish?

(13) a. I don't expect that they will find a living soul in that town.
b. What town do you expect that they will find people in?
c. I have the expectation that they will not find a living soul there.
d. *I don't have the expectation that they will find a living soul there.
e. *What town do you have the expectation that they will find people in?

That is, just as noun complements preclude interrogative extraction, they do not allow strict NPIs whose licensers are outside of the complement clause. [17]

Other constructions as well support the view that Classical NR is sensitive to island constraints. As is well known, topicalization internal to an embedded clause makes that clause an island:

(14) a. When does Leslie believe that Jim should call Irene?
b. *When does Leslie believe that Irene, Jim should call?

(15) a. Leslie doesn't believe that Jim should call Irene until tomorrow.
b. Leslie doesn't believe that Irene, Jim should ever call/*call until tomorrow.

(16) a. Leslie doesn't believe that a damned/fucking thing upset Lester.
b. *Leslie doesn't believe that Lester, a damned/fucking thing upset.

(17) a. Leslie doesn't believe that Carl said $squat_A$ to the chairman.
b. *Leslie doesn't believe that the chairman, Carl said $squat_A$ to.

Since (14a, b) indicate that internal topicalization renders the complement clause an island, the fact that (15b), (16b) and (17b) containing strict NPIs are ungrammatical then argues that Classical NR is impossible out of that kind of island as well.

Our island argument for a syntactic view of Classical NR has depended heavily on evidence from strict NPIs. But it might be claimed that there are constraints on those NPIs which would block them in the key cases *independently of island constraints*. For example, it might be claimed that strict NPIs are subject to the constraint that their licenser both c-command and precede them. And facts like the ungrammatical case in (18b), where islands are not involved,

[17] Many examples involving a complex noun phrase island are nonetheless acceptable if *any* is the determiner of the noun phrase.

(i) a. I don't have [any faith [that they will find a living soul in town]
b. I don't have [any expectations of [finding a living soul in town]]
c. I don't see [any likelihood [of Jim calling Irene until tomorrow]]

We assume such grammatical cases involve the secondary triggering effects mentioned in note 6, although we cannot discuss this issue here.

lend this idea some plausibility since the putative c-command and precedence conditions on the strict NPI *until* are not met:

(18) a. Kevin under no imaginable circumstances will leave until midnight.
b. Kevin will leave at that time/*until midnight under no imaginable circumstances.

But the general idea that what we take to be island violations can be replaced by appeal to c-command/precedence is already undermined by the data in (15)-(17), where in the ungrammatical cases the strict NPIs are nonetheless both preceded and c-commanded by the negatives.

Similarly, appeal to a condition requiring a strict NPI to be c-commanded and or preceded by its licenser leaves entirely unexplained the ungrammatical cases of strict NPIs in cases involving nominalizations like (12) and (13) above since in these, the relevant NPI *is* preceded and c-commanded by the licensing NEG. Further cases are given in (19):

(19) a. *Deborah did not hold the belief that in any sense was he anti-American.
b. *Deborah did not have the expectation that Ted would stop at anything to get promoted.
c. *Deborah did not entertain the thought that Carolyn would breathe a word about it.
d. *Deborah did not hold the belief that Carolyn had told a living soul.
e. *Deborah did not have the expectation that a damned/fucking thing would go wrong.
f. *Deborah did not entertain the thought that Karen would lift a finger to help Sidney.
g. *Karen did not have the expectation that Ted would learn squat$_A$ about Turkish politics.

While appeal to c-command or precedence is impotent as far as explaining these cases, the ungrammaticality follows from constraint (10), given that all the noun complements here are islands.

Thus the data cited here suggest that no appeal to c-command/precedence constraints can account generally for data that are taken here to indicate that Classical NR obeys island constraints. Anyone taking the view that there might be other independently justifiable conditions which block the cases we attribute to island violations bears the burden of proposing and justifying the relevant constraints.

A further important issue clouds the status of our claim that island boundaries interfere with otherwise potentially good Classical NR examples. This is relevant specifically to islands formed by the topicalization of a clause or the presence of a clause in subject position in passives or unaccusatives. In such cases, which arguably involve the origin of the clauses in object positions which are not islands, topicalization yields a fronted topic position which is an island. The islandhood of topics is illustrated below:

(20) a. It is that kind of gorilla which Seth expects [that they can teach German to].
b. *It is that kind of gorilla which [that they can teach German to], Seth expects.

Correspondingly, as already shown, Classical NR from clausal topics is not possible, as illustrated above and in (21)-(23).

(21) a. They did not expect that Kevin would leave until midnight.
b. *That Kevin would leave until midnight, they did not expect.

(22) a. They did not believe that Sandra had told a living soul.
b. *That Sandra had told a living soul, they did not believe.

(23) a. They did not anticipate that Sandra would stop at anything to screw over Larry.
b. *That Sandra would stop at anything to screw over Larry, they did not anticipate.

Suppose though that in each of (21a)-(23a) the NEG was extracted from the complement clause's base position and not from the induced topic position. The result would then not be an island violation given the standard way island constraints are conceived, since the base positions do not represent islands.

This means that there remains a so far unblocked way to analyze ungrammatical cases like (21b)-(23b) under Classical NR *even if island constraints correctly block one analysis*. This conclusion suggests that there is a constraint on topicalization of the complement clause containing a <NEG> gap.[18]

In other words, analyses like the following (presented informally) are impossible:

(24) a. Wanda believes that Kevin will not breathe a word about it until Friday $\rightarrow$ via Classical NR
b. Wanda does not believe Kevin will breathe a word about it until Friday $\rightarrow$ via Topicalization of Classical NR remnant complement clause
c. *That Kevin will breathe a word about it until Friday, Wanda does not believe

In this schema, Classical NR is not blocked by the fact that topics are islands since raising of the NEG from the clausal object position is not raising out of an island. In a now common terminology, the step from (24b) to (24c) would be an instance of *remnant movement* of the finite clause from which NEG has raised. Since this is impossible, we propose:

(25) The NEG Remnant Movement Condition
If NEG raises out of a clause C, then C cannot itself be raised.

2.2 Wh-islands

Condition (10), Island Sensitivity of NEG Raising, predicts that Classical NR should be constrained by wh-islands. The prediction is difficult to test since most Classical NR verbs do not take interrogative complements:

(26) a. I think that it will rain.
b. *I think whether it will rain.
c. I believe that it will rain.
d. *I believe whether it will rain.
e. It seems that it will rain.
f. *It seems whether it will rain.
g. I want to leave.
h. *I want what to eat.

However, the verb *plan* takes interrogative complements as in (27), and it is also a CNRP (see (28)).

(27) a. I always plan what to eat on a trip.
b. I did not plan whether or not I should tell John.

(28) a. I plan not to leave early.
b. I don't plan to leave early. (interpretation identical to (a))

[18] We use the notation <...> here and throughout to indicate the lower occurrence of some constituent. In the framework of Postal (2011), this would translate roughly to marking the head of a type I predecessor arc.

Furthermore, strict NPIs are possible with *plan* when Classical NR is found (supporting the classification of *plan* as a CNRP):

(29) a. I plan not to take the rap for a fucking thing
b. I don't plan to take the rap for a fucking thing'
c. I plan not to leave until tomorrow.
d. I don’t plan to leave until tomorrow

In addition to the low scope (Classical NR) reading of negation, in line with the remarks of note 11, we find that sentences like (29b, d) also have high scope readings equivalent to 'Nothing is such that....'. But these are irrelevant to supporting the role of island constraints in governing Classical NR.

Given the above, the verb *plan* can be used to test the prediction that Classical NR cannot extract NEGs from wh-islands:

(30) a. I plan what not to eat on a long trip.
b. I do not plan what to eat on a long trip.

Clearly, (30a,b) have different interpretations. While (30a) involves some planning about what people should not eat on a long trip, (30b) involves no planning at all. Rather it affirms the absence of any kind of planning with regards to trip food consumption. So (30a,b) lack the kind of semantic equivalence characteristic of Classical NR cases.

But that lack of equivalence follows from condition (10), Island Sensitivity of NEG Raising. Since the complement of *plan* in (30b) is a wh-island, Classical NR is impossible. Hence, (30b) can only be understood with matrix clause scope for the negation.

The conclusion from (30) is reinforced by data on strict NPIs:

(31) a. I plan who not to say a fucking thing to.
b. *I don’t plan who to say a fucking thing to.
c. I plan how not to tell a living soul about the money.
d. *I don’t plan how to tell a living soul about the money.

A matrix clause NEG cannot license a strict NPI in the embedded clause in (31). Under the syntactic approach, the data in (30) and the strict NPI data in (31) both follow from constraint (10). Since embedded interrogatives are wh-islands, it is impossible for NEG to raise out of the embedded wh-clause into the matrix clause, as illustrated below:

(32) *I do NEG plan who <NEG> to say a fucking thing to.

Since Classical NR is impossible in (32), the strict NPI *a fucking thing* has no local (clause-mate) licensing negation, and the result is ungrammatical.

Another CNRP that takes an interrogative complement is *guess* (dialectal). With *guess*, one can replicate the above results:

(33) a. I guess it will not rain tonight
b. I don't guess it will rain tonight. (interpretation equivalent to (a))

(34) a. I guessed why John did not show up.
b. I didn't guess why John showed up. (interpretation not equivalent to (a))

2.3. An Alternative to Islands

In the above section, we claimed that examples involving Classical NR from a topicalized or passivized clause are blocked because such *that* clauses are islands. Consider (35) repeated from (7):

(35) a. Victor did not believe that a fucking thing had gone wrong.
b. *That a fucking thing had gone wrong, Victor did not believe.

c. *That a fucking thing had gone wrong was not believed by Victor.
d. It was not believed by Victor that a fucking thing had gone wrong.

In (35c), NEG cannot raise from the *that* clause subject, because it is an island. But (35c) also violates an additional syntactic constraint. In such a case, the NEG must raise from the subject position to the Aux position to its right. Such movement violates the Principles and Parameters/Minimalist constraint on movement in (35):

(36) The C-Command Condition on Movement

If DP_1 moves from position A to position B, then the occurrence of DP_1 in B c-commands A.

From the point of view of this constraint, the *that* clause in (35c) is in subject position, which, in the PP/Minimalist framework, is Spec IP. But the NEG appears to the right of the auxiliary *was*, which itself occupies Infl. Therefore, the *that* clause asymmetrically c-commands the surface position of NEG. In particular, NEG is dominated by Infl', which does not dominate the *that* clause. But then, it is impossible for the surface position of NEG (following *was*) to c-command the base position of NEG contained in the *that* clause.

Parallel considerations hold of (35b), which involves a topic position rather than a subject position. Therefore, examples such as (35b,c) are blocked by the C-Command Condition on Movement (putting aside the illicit remnant movement derivations described above). The implication is that even if topicalized and passivized *that* clauses were not islands, the movement in (35b,c) would be blocked by an independent syntactic constraint. Hence, this alternative syntactic constraint is equally problematic for the semantic/pragmatic view outlined in (16) of Chapter 1. Note though that constraint (36) is not violated for the complex NP and internal topic islands discussed in section 2.

2.4 Summary

A body of evidence has been presented supporting the view that Classical NR is blocked when the origin and host sites are separated by syntactic island boundaries. This fact threatens nonsyntactic views of Classical NR because the semantic/pragmatic alternative depends on the semantic properties of CNRPs and some version of the Excluded Middle Property. The claim of the semantic/pragmatic approach is that the Classical NR reading of a standard case can be derived by logic from the combination of the Excluded Middle Property and the meaning associated with a NEG scoping over the main clause. But it is difficult to discern any reason why the construction of Classical NR *inferences* should be controlled by island boundaries determined by topicalization, subjects, and complex DPs.

To avoid possible misunderstanding, we have not claimed that it is *impossible* for such sensitivity to islands to be incorporated into semantic/pragmatic approaches. But the burden of proof clearly lies with defenders of semantic/pragmatic views to show how the latter can provide a principled basis for the island facts. We are aware of no past attempt in the large literature on the subject.

Finally, in chapter 3 we show that the relation between Classical NR and islands is more complex than assumed in the discussion so far. The complexity motivates a revised version of condition (10).

Chapter 3 Apparent Negative-Fronted Non-Negatives

3.1 Fronted Nominal and Adverbial NPIs

The highlighted phrases in (1) represent standard cases of the *Negative Fronting* construction (see Büring 2005 for a recent discussion):

(1) a. Never has he visited Madrid.
b. They proved that never had he visited Madrid.
c. No student did she manage to convince of that.
d. They determined that no student had she managed to convince of that.
e. Not every student/not many/few students did they convince of that.

The most obvious characteristic of the construction is that the extracted non-WH-constituent in the clause initial position, hereafter the *Negative Fronting (NF) focus*, cooccurs with subject auxiliary inversion, the latter obligatory, as the following indicate:[19]

(2) a. *Never he has visited Madrid.
b. *They proved that never he had visited Madrid.
c. *No student she did/DID manage to convince of that.
d. *They determined that no student she had managed to convince of that.

Classical NR issues related to Negative Fronting arise from Horn's (1975: 283) attestation of (3), which he had heard on a news broadcast:

(3) I don't think that ever before have the media played such a major role in a kidnapping.

That work cited no other examples of the construction involved and provided no analysis beyond advancing that the auxiliary inversion in the embedded clause 'would perhaps similarly have been triggered by a pre-transported negative below *think*'. The current relevance is that *think* is of course a CNRP and Horn added that analogs of (3) are impossible with non-CNRP main verbs, specifically *assume* and *realize* (but see section 4 of chapter 3 for apparent contraindications), a conclusion endorsed in McCawley (1998: 598). In other words, Horn (1975) assumed that the possibility of constructions like that in (3) depends on Classical NR.

Since we repeatedly refer to *that* clause complements like that in (3), with fronted NPI phrases and subject auxiliary inversion word order, we need a term for them. Let us honor Horn for what we take to be a genuinely important discovery by referring to them via the neologism *Horn clauses*. What follows provides a more systematic characterization of this construction.

Horn (1978: 168) repeated (3), but again provided no other examples. However, other cases are not hard to come by:

(4) McCawley (1998: 598)
a. I don't suppose that under any circumstances would he help me.

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[19] As Andrew Radford reminds us, the subject-auxiliary inversion characteristic of Negative Fronting only occurs in a clause actually containing the overt NF focus, not in lower clauses which the NF focus either originated in or passed through:

(i) a. None of the proposals would he accept.
b. None of the proposals could we persuade him that he should/*should he accept.
c. None of the proposals could we persuade him that he should tell Martha that she should/*should she accept.

There are various ways in different frameworks that this condition could be imposed, a matter we cannot go into here.

b. We didn't anticipate that at any time would our work create difficulties.

Furthermore, it is easy to find examples on the Web:

(5) a. and I don't believe that at any time did I have to resort to the 'always available' items that I sometimes did in the past.
(boards.cruisecritic.com/archive/index.php/t-970352.html)

b. I don't believe that at any time did traffic come to standstill.
(theragblog.blogspot.com/.../police-state-amerikkka-right-in-my-own...)

c. I don't believe that at ANY time did Rockstar consider closing shop.
(www.destructoid.com/.../offended-by-hot-coffee-rockstar-will-give-y...–)

We offer as well the following, which are perfect for the present authors:

(6) a. I don't believe that in any sense were those actions decisive.

b. I didn't expect that for any reason would she agree to that.

c. I don't guess that any of your friends have they yet interviewed.

d. I didn't imagine that either of them would she be anxious to marry.

e. I don't suppose that in any of his classes has he actually made such statements.

f. I didn't think that at any previous point in my life had I been a real socialist.

g. I didn't think that carvings of any respected deity had he destroyed.

Horn went on to add the following remarks about example (3):

(7) Horn (1978: 168-169)

> "In this sentence, Subject-Auxiliary Inversion has not only applied in a subordinate clause, it has apparently been triggered by a negative which appears in the surface structure in the clause above that where the inversion has taken place. In a theory with a syntactic rule of neg-raising, we might posit as an intermediate string in the derivation of (96) something of the form:
>
> > I believe that NEG [the media have (at) some time before played such a major role in a kidnapping]
>
> Whatever might be the details of the rules involved, *(at) some time* is realized as *ever* (triggered by the presence of NEG) and optionally fronted within its clause. If fronting applies, we get a structure approximating:
>
> (97') I believe that [S not ever the media have played ...]
>
> At this point Subject-Aux Inversion obligatorily applies, reversing the order of the media and *have*; inversion is triggered by the sentence negative in the downstairs clause. The negative element can now either raise over *believe*, resulting in the newsman's (96), or incorporate into *ever*, yielding:
>
> (98) I believe that never before have the media played such a major role ...
>
> If the higher predicate is not an NR-governor, only the latter possibility, Negative Incorporation, is available:
>
> (99) a. I {claim/?*regret} that never before have the media played ... [20]
>
> b. *I don't {claim/regret} that ever before have the mediaplayed ...

[20] We neither agree with the markings on *regret* in Horn's (a) example nor see any principle which would yield the ungrammaticality indicated. The ungrammaticality in his (c) example is, however, arguably due to conditions on licensing the NPI in the complement. In general, a 'negative' verb which licenses NPIs in its complement clause cannot do so if negated. None of these facts are relevant to the current discussion.

c. I don't {claim/*regret} that the media have ever before played ...

As (99c) shows, it is not *ever* which triggers inversion, since *ever*, a relatively lenient NPI, is triggered by negation over *claim*--although not over factive *regret*—but no inversion is possible in the lower clause [as (99b) shows]."

While perhaps opaque, Horn's remarks in (7) do seem to represent recognition that Horn clause-containing sentences like (3) involve syntactic raising of a NEG from the embedded clause, a conclusion accepted in McCawley (1998: 598).

But oddly, Horn's later work which ended up *denying* the syntactic nature of Classical NR did not attempt to indicate how the nonsyntactic treatment of Classical NR which Horn then advocated handles cases like (3). Contrast the two following remarks:

(8) a. Horn (1989 [2001: 315])

"As it happens, there are ample grounds to doubt both the feasibility and the desirability of a grammatical treatment of the NRP [= Classical NR: CC and PMP]."

b. Horn (1975: 284)

"The subj-aux inversion case of (16) [= (3): CC and PMP] is even more problematical for an interpretive approach, since the syntactic nature of this rule [= Classical NR: CC and PMP] is presumably beyond reproach."

More generally, we know of no nonsyntactic treatment since 1978, regardless of author, which treats such facts.[21] So, works like Klooster (2003, to appear), Sailer (2005, 2006), Tovena (2001), Gajewski (2005, 2007) and Homer (2010) simply do not mention examples like (3)-(5).[22]

For concreteness, we propose for Horn clause cases like (3) an analysis which treats a structure like (9b) as resulting from the raising via Classical NR of the NEG in structures like (9a); we subsequently address various issues such an analysis raises.

(9) a. I think that never before have the media played such a major role.

b. I don't think that ever before have the media played such a major role.

The core assumption is that the main clause NEG originates in the embedded clause in a constituent [NEG ever before], an assumption not found in Horn (1975, 1978). The extraction of this constituent via Negative Fronting to the initial position of the embedded clause triggers subject-auxiliary inversion. At that point, NEG either remains in-situ, giving rise to (9a) or raises

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[21] The only 21st century mention of cases like (3) we are aware of appears in Den Dikken and Giannakidou (2002, p. 53, note 25). They state:

"Richard Kayne (personal communication) suggests that (62b) becomes better if negative inversion applies in the embedded clause.

(i) ?1 don't think that any linguists would I invite to the party.

However, this judgment seems rather hard to replicate; note that for most speakers negative inversion with past tense remains unacceptable (but see Postal 2000).

(ii) *I don't think that any linguists did I invite to the party.

To the extent that cases like (i) are acceptable, the fact that a nonnegative constituent like *any linguists*, being licensed by negation in the matrix clause, may trigger negative inversion raises interesting questions orthogonal to our concerns in this article."

Their attribution of their awareness of Horn clauses to a then recent personal communication suggests that Den Dikken and Giannakidou were unaware of Horn's discovery and McCawley's (1998) brief discussion.

[22] While McCawley (1998, pg. 598) provided a brief discussion of such cases, this in essence merely restated the syntactic sketch given by Horn.

to the matrix clause, yielding (9b). Even if NEG raises to the matrix clause, it is still interpreted as having scope internal to the embedded clause. This is, we believe, a key property of all Classical NR cases. The subordinate scope of NEG is highlighted in the brief discussion of what we call *quasi-Horn clauses* in section 4 of this chapter.

Preliminary evidence for the claim that the fronted DP in a Horn clause represents a negative quantifier DP comes from comparing NPIs under the scope of negation to other NPIs. In general, only NPIs under the scope of negation can trigger inversion of the type seen in (3):

(10) a. If you think that John would leave at any point, let me know.
b. *If you think that at any point would John leave, let me know.

(11) a. Do you think that John would leave at any point?
b. *Do you think that at any point would John leave?

(12) a. Exactly three people think that John knows any physics.
b. *Exactly three people think that any physics does John know.

In none of (10)-(12) can the NPI DP be interpreted as an underlying negative quantifier (unlike the NPI in the Horn clause in (9b)). So the analysis presented in (9a,b) explicates the fact that no inversion is allowed in (10b)-(12b).

3.2 The Argument for a Syntactic Conception of Classical NEG Raising

The failure of nonsyntactic approaches to address examples like (3) is significant since such sentences provide, we claim, a strong argument for a syntactic view of Classical NR. While this is partly alluded to in (7), the facts were not analyzed in enough detail there to have sufficiently brought out the powerful implications of such cases for the question of whether Classical NR is syntactic or not.

To grasp the argument, one needs to focus initially on standard instances of Negative Fronting like (1). As previously indicated, the phenomenon is characterized by the leftward displacement of a phrase, as in topicalization, WH interrogatives, etc., distinctively combined with obligatory subject-auxiliary inversion.[23] An additional, subtler characteristic of the construction is the existence of strict conditions on the type of phrase which can be fronted. This has been an issue since at least Jackendoff (1972: 364-369). Büring (2005) claimed that the right characterization is a semantic condition which one can formulate essentially as in (13b), given the notation in (13a):

(13) The Negative Fronting Condition (first version)
a. Let $\sum$(G) represent the meaning of an arbitrary constituent G.
b. If in a structure K = [$_{\text{Clause}}$ Q Z], Q is an NF focus, then Q has higher scope than any other element in K and $\sum$(Q) is a decreasing function with respect to $\sum$(K).

Our use of *scope* here (and throughout) is syntactic and informal. It does not matter for present purposes whether the scope of quantificational phrases is marked via quantifier lowering as in

[23] The grammaticality of (ia) alongside (ib) need not be taken as attacking the claim that subject auxiliary inversion is obligatory with Negative Fronting.

(i) a. Those professors, none of whom they granted tenure, ...
b. Those professors, none of whom did they grant tenure, ...
c. Those professors, some/none of whom he thinks were granted tenure,...

The reason is that (ia) can be taken to be a non-Negative Fronting case with the leftward position of the negative phrase a function of the nonrestrictive clause type of pied-piping found in (ic).

McCawley (1973: 150, 294-295), Lakoff (1974), Seuren (1974a; 1996: 301, 318-319; 1998: 522-524), via quantifier raising as in May (1985) and much later work, or by multiattachment of the quantificational phrases in their actual and scope positions, or other alternatives. We need take no position on these matters for present purposes. In the approaches cited, a key shared notion is that the height of a quantificational expression in a graph/tree indicates scope. For example, in Principles and Parameters work, the c-command domain of a quantificational expression is identified as its scope. That is, a structurally higher quantificational expression at such a level by definition scopes over a lower one.

In the rest of this chapter we assume such a syntactic approach to scope based on graph/tree height. The syntactic scope of a DP need not correspond to its overt position due to higher covert positions existing as a function of quantifier raising, quantifier lowering or multiattachment. We naturally assume that there are principles relating syntactic scope to the corresponding semantics (see e.g. Heim and Kratzer, 1998: chapter 7).

Condition (13) determines rightly that decreasing phrases like those in (1) and (14) can be NF foci, whether involving overt negatives or not:

(14) a. Not many unions has the government proposed that to.
b. Not every union has the government proposed that to.
c. No union has the government proposed that to.
d. Few unions has the government proposed that to.
e. Less than four unions has the government proposed that to.

But (13) also claims that nonmonotonic ones like those in (15) *cannot* be NF foci:

(15) a. Exactly one feature did I notice in the landscape (Atlas, 1996: 301)
b. Only three gorillas have we trained.
c. Between seven and ten people can we afford to keep in that facility.

For some speakers, including one of the present authors, (13) appears correct in that regard since many cases like (15a,c) are rejected. But for others, including Atlas, speakers cited in Büring (2005) and the other author, a restriction of all NF foci to decreasing phrases is not possible simply on the basis of acceptable cases like (15).

It might seem that the difference between the two variants of English along this dimension could be characterized by saying that the one excluding (15) has principle (13) and that the other has a variant otherwise like (13) with 'not increasing' replacing 'decreasing', thereby permitting nonmonotonic NF foci like those in (15). But this is too simple. We believe *all* speakers allow cases where the fronted phrase involves an antiadditive negative phrase expanded with an exceptive expression:

(16) a. None of the students but/except Barbara did they flunk.
b. Not one of the students except/with the exception of Barbara did they flunk.
c. None of the students but/except Barbara did they flunk twice.

The full fronted DPs in (16a,b) are nonmonotonic, not decreasing. For example, (16a) does not entail (16c). Since the matter plays no role in the current discussion of Classical NR, we will, for simplicity, hereafter mostly ignore nonmonotonic phrases of all types in our discussions of Negative Fronting.[24]

Issues of nonmonotonic cases aside, neither version of condition (13b) is, however, correct since even certain *increasing* phrases can be NF foci:

[24] Among the nonmonotonic phrases we ignore are coordinate combinations of increasing and decreasing phrases such as *some tall women but no short women*.

(17) a. No(t) less than three gorillas were they able to teach French to.[25]
b. No(t) fewer than three gorillas were they able to teach French to.
c. No(t) fewer than three gorillas were they able to teach both French and German to.

Here, while *Fewer/Less than three gorillas* are a decreasing phrases with respect to the main clause, *No(t)/No(t) fewer/No(t) less than three gorillas* are increasing. That is, (17c) entails (17b) and not conversely. Similarly, in the following example, the quantificational phrase *not less than three goddesses* is an increasing phrase.

(18) Karen's carvings of not less than three goddesses were they willing to buy.[26]

But rather special cases like those just gone over aside, it is nonetheless true that *most* increasing phrases are not subject to Negative Fronting, that is, cannot be NF foci. In other words, most increasing phrases cannot be phrases in clause initial position linked to subject auxiliary inversion in the minimal containing clause:

(19) a. *Every one/Most/Certain/Lots/Some of the gorillas did they teach French to.
b. *The/Those/These gorillas did they teach French to.
c. *Karen's carvings of most/each of the goddesses did they agree to sell.

Our suggestion is that the contrast between standard increasing phrases like (19) and those like (17) and (18) is the presence in the latter of an overt instance of NEG.

Given that, a better characterization of NF foci would be something like:

(20) The Negative Fronting Condition (second and final version)
If in a structure K = $[_{\text{Clause}}$ Q Z] Q is an NF focus, then:
(a) Q is (or dominates) a DP V such that V's scope position is higher than that of any other element in K, and:
(b) if $\sum$(V) is an increasing function, then V is of the form [NEG X].

This condition has both syntactic and semantic elements. The notion of scope position is syntactic, as is the reference to the NEG morpheme in (b). It also refers crucially to increasing functions, a semantic notion. So we are not claiming that one can account for the properties of Negative Fronting in terms of syntax alone. However, we will show that condition (20) provides a powerful argument that Classical NR is a syntactic rule.

The reason for the wording 'Q is (or dominates) a DP' is that the relevant DP triggering inversion is often dominated by the Negative Fronting focus. One such case was already illustrated in (18), where the key DP in determining whether condition (20) is satisfied is *not less than three goddesses*, which is dominated by the NF focus. We assume that this DP takes higher scope than any other element of the clause containing the NF focus, as outlined in the discussion below (13). The structure of (18) in such terms is roughly as in (21):

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[25] We ignore throughout prescriptive complaints that *less* cannot be used with countable nouns.

[26] These data conflict with the claims in Büring (2005) to the effect:

(i) "In sum, DE-ness seems a sufficient condition for NI, but more in general, all NPI licensing phrases are negative phrases in our sense."

Here Büring uses the term 'negative phrase' in an odd sense such that a phrase can be so characterized even if it is not negative and not even decreasing if it can be taken to license NPIs. And for him, negative phrases form the class of NF foci. Büring thus assumes that every NF focus is a phrase which licenses NPIs; but the existence of cases like (17) shows that this is wrong since the relevant increasing negative phrases do not license NPIs:

(ii) Not less than three gorillas (*ever) ate some/*any bananas

(21) [$_A$ [$_C$ not less than three goddesses] [$_B$ Karen's carvings of <not less than three goddesses> were they willing to buy.]]

In this structure, C has scope higher than any other element of B. Only the lower occurrence of *not less than three goddesses* is actually pronounced. We cannot pursue the details the representation of scope here for reasons of space.

Condition (20) rightly distinguishes contrasting pairs of the type probably first noted in Klima (1964: 300) and illustrated in (22a, b) from Jackendoff (1972: 364, 365)

(22) a. In no clothes does Bill look attractive.
b. In no clothes, Bill looks attractive.

While (22b) looks like it might be a counterexample to the claimed obligatoriness of subject auxiliary inversion with Negative Fronting, arguably it is not an instance of Negative Fronting at all. One notes the sharp difference in intonation represented by the absence of a comma in the first, and its presence in the second. In addition, the putative NF focus, *In no clothes*, would have to either be or contain a DP of the form [NEG X] with maximally high scope. *In no clothes* obviously contains a DP with the needed form but the scope of *no clothes* is not the highest in the clause since it is internal to the PP itself. This is why *no clothes* cannot scope over an existential or license an NPI in the rest of the clause:

(23) In no clothes, Bill might (*ever) shock the audience.

We speculate that the initial phrase in (22b) and (23) is a kind of reduced adverbial clause something like *while wearing no clothes*, with the scope of the quantifier phrase *no clothes* internal to that constituent.[27]

Condition (20) also rightly predicts that (24a) will only have reading (24c), and not reading (24b):

(24) a. Your belief in no god were the authorities willing to tolerate.
b. The authorities were willing to tolerate your not believing in any god.
c. No god x is such that the authorities were willing to tolerate your believing in x.

On one reading of (24a), the scope of *no god* in (24a) is lower than that of *your belief* hence not the highest in the matrix clause.[28] That reading is roughly equivalent to (24b), and in that case, (24a) is ungrammatical because the whole fronted DP then represents an increasing function with respect to the clause but the required [NEG X] DP fails to have highest scope. On a distinct reading, the scope of *no god* is higher than that of *your belief* and indeed higher than anything else in the clause. That reading of (24a) is essentially equivalent to (24c) and is compatible with Negative Fronting because the phrase with highest scope, *no god*, is then decreasing with respect to the entire clause.

Condition (20) allows both of the following:

(25) a. Her carvings of none of the nobles did they bid on.
b. Her carvings of no(t) fewer/less than three of the nobles did they bid on.

While the NF focus in (25a) contains a decreasing DP, *none of the nobles* and that in (25b) contains an increasing DP, *no(t) fewer/less than three of the nobles*, each NF focus satisfies condition (20). The former does so because the high scope DP it contains is not increasing and

[27] These remarks parallel Büring's (2005, (21)) claims about similar examples.

[28] How this scope is structurally possible is not self-evident. One answer might be that *belief in X* means on one reading roughly 'believe (X exist)', and has a parallel clausal syntactic analysis, in which case the quantifier scope can be internal to the complement of the 'believe' predicate.

hence vacuously satisfies the stated restrictions. The latter does so because it contains a high scope increasing DP of the form [NEG X].[29]

Returning then to Horn clauses, we can now say that if analyzed with no appeal to syntactic NEG raising, the fronted NPI phrase could not satisfy condition (20) and hence the constituent fronting in Horn clauses could not be treated as a function of Negative Fronting. This follows since the fronted phrase in a Horn clause is in the simplest case an NPI DP, and in other more complex ones a phrase containing an NPI DP as in (4a), (6g) and (33b) below. Such NPIs are essentially universally taken to be increasing indefinite DPs. On the contrary, under a syntactic analysis of Classical NR like our (9), which associates the fronted constituent with a main clause NEG, the fronted phrase reduces to a legitimate decreasing NF focus under condition (20). This provides a clear conceptual and simplicity advantage to a syntactic account.

And beyond simplicity considerations, there is direct factual evidence that despite the lack of an *overt* instance of NEG, the fronted phrases in Horn clauses do represent NF foci. This involves contexts in independent clauses where DPs satisfying condition (20) nonetheless, for reasons which need not concern us, cannot be NF foci. One involves the possibility sense of *may*, another the negative quantifier DP part of the idioms *stop at nothing*, *think nothing of*, and a third existential *there* clauses. In all these cases, the same contexts preclude the formation of Horn clauses:

(26) a. Ted may promote no salesperson.
b. *No salesperson may Ted promote.
(the * only references the possibility meaning of *may*)
c. I believe Ted may promote no salesperson.
d. *I don't believe that any salesperson may Ted promote.

(27) a. Carla will stop at nothing (won't stop at anything) to get that job.
b. *Nothing will Carla stop at to get that job.
c. I believe that Carla will stop at nothing to get that job.
d. *I don't believe that anything will Carla stop at to get that job.

(28) a. Vernon thinks nothing (doesn't think anything) of drinking nine beers.
b. *Nothing does Vernon think of drinking nine beers.
c. I believe that Vernon thinks nothing of drinking nine beers.
d. *I don't believe that anything does Vernon think of drinking nine beers.

(29) a. There is no (is not any) gorilla in that SUV.
b. *No gorilla is there in that SUV.
c. I believe that there is no gorilla in that SUV.
d. *I don't believe that any gorilla is there in that SUV.

Since Horn clauses and Negative Fronting cases manifest the same constraints, these data argue strongly that Horn clauses involve Negative Fronting and not some distinct, hitherto unknown left extraction.[30]

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[29] Formulation (20) determines correctly that, as long as the scoping requirement is met, it is irrelevant how deeply embedded an increasing or decreasing negative expression is:

(i) a. Not many gorillas' trainers' wives did they invite to the party.
b. Not less than thirty gorillas' trainers' wives did they invite to the party.

[30] Another case supporting the unity of NF foci and the fronted phrases in Horn clauses is that neither can be predicate nominals.

(i) a. Boris will be no Einstein.

This fact must count against any approach which cannot incorporate the fundamental unity of the two phenomena (Negative Fronting focus and Horn clauses) if there is an alternative which can. But the complication of regarding Horn clauses and Negative Fronting as two distinct phenomena is inherent in any nonsyntactic treatment of Classical NR cases whose complements are Horn clauses. That follows because although the main clause dominating a Horn clause contains a NEG, the essence of nonsyntactic accounts eliminates any possibility of syntactically associating that NEG with the fronted NPI. And without that NEG, the fronted phrases in Horn clauses cannot qualify as legitimate NF foci under condition (20) and hence the clauses cannot be taken to instantiate Negative Fronting.

On the contrary, we have sketched how a syntactic view of Classical NR can associate the NEG in the main clause with the fronted phrase in a Horn clause, reducing that phrase to an unexceptional NF focus. This clear clash between the consequences of syntactic and nonsyntactic views of Classical NR relative to Horn clauses thus provides a strong argument in favor of the former.

We stress that our syntactic analysis of Horn clauses adopting (20) and syntactic NEG raising is nonetheless significantly different from that assumed in Horn (1978: 168-169) and reiterated in McCawley (1998: 598). As already noted, that analysis did not take the raised NEG to originate in the fronted NPI DP. While in our view, NEGs arise in various distinct positions including internal to DPs, these authors essentially accepted the assumption of Klima (1964) that most syntactic negation, even that of negative DPs, arises as a so-called 'sentence negation' in a dominating position in clauses. Two strong objections to such a view are highlighted by the existence of Horn clauses.

First, under this view, negative DPs of the sort subject to Negative Fronting must involve lowering sentence negations into DPs, indefinitely deeply as indicated in (76):

(30) No doctor's assistant's cousin's home mortgage payment's suspension had Karen predicted.

But unbounded lowering is arguably otherwise unknown and hence its invocation for negative phrases is theoretically suspicious at best. That structures like (30) satisfy condition (20). follows from the independent fact that no matter how deeply the initial DP in recursive possessive cases is embedded, that DP has the highest scope in the clause. And in (30), that DP, *No doctor's*, is decreasing.

Second, under the assumption that the NEGs of NF foci originate in a high sentential negation position modifying clauses, the fronted DPs in Horn clauses are, if not taken as sources for Classical NR, systematically not decreasing phrases. Nor are they increasing phrases meeting the negative DP condition (of the form [NEG X]); hence nothing like (20) could be appealed to. We take this to be another reason for rejecting the idea that negation in general arises in some single high clausal position, or indeed, in any unique position at all.[31]

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b. *No Einstein will Boris be.

c. I figured that Boris would be no Einstein.

d. I didn't figure that Boris would be any Einstein.

e. *I figured that no Einstein would Boris be.

f. *I didn't figure that any Einstein would Boris be.

Again a constraint on Negative Fronting also appears in Horn clauses.

[31] The idea that negation originates exclusively in a high position modifying clauses has been defended via claim (i):

Moreover, the argument for a syntactic view of Classical NR from condition (20) can be strengthened. The relevant strengthening involves a comparison of the fronted phrases in Horn clauses with the fronted phrases which satisfy condition (20) (that is uncontroversial NF foci) in otherwise similar embedded clauses. A perfect correlation would exist if there were a grammatical Horn clause corresponding to every type of legitimate NF focus in non-Horn clauses. In fact, nothing like a full correlation exists. This is illustrated by imperfect correlations like those below:

(31) a. I believed that no gorilla/not a single gorilla/not even one gorilla/neither gorilla could they teach to speak Mohawk.
b. I didn't believe that any gorilla/a single gorilla/even one gorilla/either gorilla could they teach to speak Mohawk.

(32) a. I believed that not all gorillas/not every gorilla/not (that) many gorillas/not a lot of gorillas could they teach to speak Mohawk.
b. I didn't believe that *all gorillas/*every gorilla/*(that) many gorillas/*a lot of gorillas could they teach to speak Mohawk.

(33) a. I believed that offspring of not a single/not even one gorilla did they teach to speak Mohawk.
b. I didn't believe that offspring of a single/even one gorilla did they teach to speak Mohawk.

(34) a. I believed that offspring of not a lot of gorillas/not (that) many gorillas did they teach to speak Mohawk.
b. *I didn't believe that offspring of a lot of gorillas/(that) many gorillas did they teach to speak Mohawk.

The following principle appears to pick out the class of licit fronted phrases in a Horn clause:

(35) The Antiadditive Condition on Classical NR from NF Foci
If Q =[NEG_x +Y] is the highest scoping element of an NF focus, and NEG_x raises into the next highest clause, then Q represents an antiadditive function.[32]

(i) McCawley (1998: 582)
"If no such analysis proves viable, it might be necessary, for example, to allow the scopes of some negations to be something other than an S, though it is hard to see how something could be a negation without having a S as its scope."

This amounts to the assumption that semantically, all negation is propositional. But that claim, which McCawey did not defend, is arguably baseless. We adopt on the contrary the views in:

(ii) Haspelmath (1997: 203: note 6)
"The Fregean view of negation as a sentence operator contributes little to our understanding of the form of negation in natural languages."

(iii) Ladusaw (1996: 322)
"If negation is based upon an opposition of elements within a certain domain, we can recognize what is logically the same negative opposition in different semantic and pragmatic domains."

In such terms, there is no semantic barrier whatever to taking negation to originate in diverse constituents, including DPs, Ds, etc. A restriction of all negation to the propositional level is also rejected in Horn (1989 [2001]); see especially his chapter 7.

[32] A function F is anti-additive if and only if $F(a \vee b) = F(a) \wedge F(b)$.

Condition (35) holds for all the forms in (31a) having grammatical correlates in (31b) and for the forms in (33a) having well-formed correlates in (33b). But it is not satisfied by those which lack grammatical correspondents in Horn clauses. This is shown for the forms in (32a) and (34a) by the ungrammaticalities in (32b) and (34b), since *not all gorillas, not every gorilla, not a lot of gorillas* and *not (that) many gorillas* are not antiadditive.

Data involving conjoined cases with *neither/either* support condition (35), since *neither Jane nor Marla* is antiadditive:

(36) a. I believe that neither Jane nor Marla have they yet interviewed.
b. I don't believe that either Jane or Marla have they yet interviewed.

Assuming the considerations just gone over are correct, a syntactic approach to the interaction of Classical NR with Horn clauses can incorporate condition (35) on Classical NR. We fail to see though how a nonsyntactic view of Classical NR yields an analog of (35) since in any such approach, the fronted phrase in a Horn clause is not an antiadditive phrase, in fact, not a negative phrase at all.[33]

To summarize, an argument for a syntactic approach to NR and against nonsyntactic ones emerges from Horn clauses because the former can treat such clauses as deformed Negative Fronting clauses, and their fronted phrases as NF foci whose NEGs have raised to the matrix clause. The deformation is simply that due to Classical NR. But nonsyntactic views of Classical

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Despite its virtues, condition (35) is not quite right since addition of exceptive phrases does not alter the grammaticality of Horn clause fronted expressions:

(i) I didn't believe that any of the students (except Greg) would get a job.

And expressions like the NF focus in (ii) are nonmonotonic, hence not antiadditive:

(ii) I believed that none of the students except Greg would get a job.

This problem is parallel to that involving many other restricted ('strong') NPIs. While these are often said to require antiadditive licensers (see e.g., Gajewski (2008), Krifka (1995), Jackson (1995), Zwarts (1996, 1998, 1999), such NPIs are in fact also not degraded by addition of exceptives to their licensers:

(iii) No visitor (except Louise) contributed a red cent/squat$_A$.

The same problem arises when modifiers like *almost* or *nearly* are added to antiadditive negative quantifier DPs. These also eliminate antiadditivity without precluding NF foci:

(iv) Almost no doctor except Veronica could they contact immediately.

We will not address how to best overcome these difficulties.

[33] Constraint (35) imposes only a necessary condition; it does not claim that antiadditivity is sufficient and we do not know whether it actually is. Data like (i) might seem to argue that antiadditivity is not sufficient.

(i) a. I believe that not (even) a red cent did she offer them.
b. I don't believe that *(even) a red cent did she offer them.
c. I believe that not (even) once did she call her uncle.
d. I don't believe that *(even) once did she call her uncle

Although *not a red cent* and *not once* form antiadditives, Horn clauses directly corresponding to these are ungrammatical. However, placing the word *even* in front of *a red cent* and *once* yields grammatical variants of (ib, d) and has no effect on the meaning or grammaticality of (ia, c). This suggests that what is involved in the bad versions of (ib, d) is not a further constraint on the feeding of Classical NR by NF foci but a restriction on the deletion of *even*. *Even* deletion is apparently not permitted in NF foci from which the associated NEG has raised out.

NR must apparently treat the constituent fronting in Horn clauses as a distinct construction type limited to just those clauses (and to quasi-Horn clauses discussed in section 4 of this chapter).

3.3 An Apparent Island Paradox

In chapter 2 we claimed that Classical NR obeys island constraints, which supports the view that Classical NR is a syntactic phenomenon. But our analysis of Horn clauses creates a serious conceptual problem, since it assumes that Classical NR is possible out of an NF focus. Arguably though, such constituents (like all left-extracted phrases, we believe) are islands, as shown by standard tests involving DP extraction:

(37) a. They photoshopped no photos of Graham.
b. It was Graham that they photoshopped no photos of.
c. No photos of Graham did they photoshop.
d. *It was Graham that no photos of did they photoshop.
e. They photographed some photos of Graham.
f. It was Graham that they photoshopped some photos of.
g. Some photos of Graham, they photoshopped.
h. *It was Graham that some photos of, they photoshopped.

Given that NF foci are islands, why are Horn clauses, which we have taken to involve Classical NR from a fronted constituent, acceptable?

The solution to this dilemma involves a nontraditional view of the force of island constraints, one which differentiates that force in terms of the nature of the constituents extracted. Where, traditionally, islands have been assumed to restrict all extractions regardless of constituent type, we propose that NEG Raising is limited by island boundaries only for clausal islands, as follows:

(38) Island Sensitivity of NEG Raising (second and final version)
If I is a clause and an island, then a NEG cannot extract from I.

The innovative (38) claims that island boundaries bar NEG raising, hence Classical NR, only if they are clausal, where banning of extraction across island boundaries is much more general for extraction of DPs, PPs, etc.

To lend this substance, one needs a characterization of clausal islands. While the following list is surely not complete, it gives a good idea of those islands relevant to the current work:

(39) A clause K is an island if and only if:
a. K is a complement of a noun (Ross's 1967 [1986] Complex NP Constraint); or:
b. K is a restrictive or nonrestrictive relative clause; or
c. K is a clause which has been left-extracted (e.g., via topicalization) or:
d. K is the remnant of a left extraction, more precisely K instantiates B in the following structure: $[_A$ X $[_B$ ... <X> ...]].

Crucially, any full list containing (39a-d) plus possibly other clausal island specifications must *not* include clauses like A in (39d). This allows for the possibility that X (which could be a DP, PP,….) itself may be an island. For present purposes, the relevant implication is that Topics and NF foci are islands, which in itself does not block NEG extraction from them given (38), since, in most cases, they are not clauses.

A desirable consequence of the combination of condition (38) with the clausal island characterization in (39) appears from an ungrammatical Classical NR case like (40a), whose labeled bracketing corresponds directly to (36d):

(40) a. *I don't think that [$_A$ [$_B$ [no fewer than three dogs] did Tod say a fucking thing about]].
b. I think that no fewer than three dogs did Tod not say a fucking thing about.
c. No fewer than three dogs did Tod not say a fucking thing about.
d. *No fewer than three people said a fucking thing about those dogs.

According to (39d), the Negative Fronting of *no fewer than three dogs* in (40a) determines that clause B (but not clause A) is an island. If so, the NEG, seen in the non-Classical NR variant (40b), cannot raise into the *think* clause, since it is inside B in (40b), which would be (or only irrelevantly different from) the input to the Classical NR in (40a).

That the ungrammaticality of (40a) is, as just characterized, a fact about Classical NR is shown by the licensing of the strict NPI *a fucking thing*. Specifically, examples (40b,c) show that despite being an increasing DP, *no fewer than three dogs* can be an NF focus; but (40d) shows that it cannot (in fact, for that very reason) license *a fucking thing*. Hence, in (40a) only the raised main clause NEG could license that strict NPI.

Despite the virtues of (39d) just illustrated, there is a clear problem: condition (39d) might appear to block *all* multiple extractions from a single clause corresponding to B, since (39d) claims that even one extraction from a clause instantiating B suffices to create an island. This would properly account for facts like the following:

(41) a. *How long do you think that to Louise, we should point out that the party lasted?
b. *How long do you think that under no circumstances should the party last?
c. *the time when you think that Vic, Sandra accused of harassment
d. *the time when you think that no professor did Sandra defend against such charges

However, such a view predicts wrongly that (42a, b) should be ungrammatical, when some speakers accept (42a) and we suspect that (42b) is acceptable to a still wider range of speakers which includes the present authors:

(42) a. Tom, under no circumstances would I be prepared to vote for.
b. Tom, I think that under no circumstances would I be prepared to vote for.

Even clearer data making the same point are seen in (43):

(43) a. Tom, who under no conditions would they hire, is outside.
b. Tom, who I think that under no conditions would they hire, is outside.

Despite seemingly conflicting data like (42) and (43), the correctness of (39d) can arguably be maintained. This is possible if one can validly appeal to the division between *selective* and *nonselective* islands discussed in Postal (1998: chapter 1) and references therein together with the assumption that Negative Fronting only creates a selective island. The possibility exists since, as argued in Postal (1998), under certain very restrictive conditions, namely, when an invisible resumptive pronoun is left in the extraction site, extraction from selective islands is possible. This is a generalization of the claim of Ross (1967 [1986]) that overt resumptive pronouns sanction extraction from islands, a possibility seen in the grammatical nonstandard extraction in (44b):

(44) a. *Mary, who I wonder if will ever be happy, has yet to RSVP.
b. Mary, who I wonder if she will ever be happy, has yet to RSVP.

Selective island issues are directly relevant to our account of Classical NR as shown by the following data. Structured example (45a) is modeled on an example provided by Andrew Radford):

(45) a. Tom, I don't believe [$_A$ that under any conditions [$_B$ would they agree to hire]].
b. Tom, who I don't think [$_A$ that under any conditions [$_B$ would they hire], is outside]].

Here the clausal labeling corresponds directly to schema (39d) above. Given our analysis of Negative Fronting, Classical NR must, in both (45a,b), raise the NEG out of clause A, which is not an island, while both *Tom* and *under no/any conditions* must raise out of B and also out of A. Raising out of B is possible because B is only a selective island, so Topicalization (which leaves a null resumptive pronoun) out of it is possible. We cannot pursue these complex issues in detail here.

To illustrate the role of our view of islands and the functioning of condition (38), consider a typical Horn clause case like (46a), whose complement clause we take to have the relevant constituent structure in (46b):

(46) a. I didn't think that any of the candidates would he end up sending that much money to.
b. [$_A$ that [$_B$ [$_C$ any of the candidates] [$_D$ would he end up sending that much money to <C>]]]z

As already indicated, we assume that all left-extracted constituents like C here are islands and that their remnants, here D, are also islands, while clauses A and B are not islands. Nonetheless, our analysis *so far* assumes that a NEG has raised out of C into the main clause to define Classical NR in cases like (46a). That means the NEG has escaped island C and clauses A and B. But since C is not clausal *and neither A nor B is an island*, no violation of the island constraint formulated as in (38) ensues. The hedge 'so far' in the text here allows for a slightly different view of the immediate origin of the NEG in Horn clause cases, which we come to presently; see the discussion of (59) and (60).

It is revealing to compare the contrasting (47b), whose complement involves a Horn clause, and (44a), whose roughly parallel complement manifests topicalization.

(47) a. *I do not believe that Jerome's enthusiasm for any of the candidates, we actually discussed.
b. I do not believe that Jerome's enthusiasm for any of the candidates did we actually discuss.

Little additional need be said about (47b), since it arguably represents a regular Horn clause, corresponding to the Negative Fronting case (48):

(48) I believe that Jerome's enthusiasm for none of the candidates did we actually discuss.

Because its NF focus satisfies condition (20), example (48) is grammatical. That is, the NF focus dominates an element (*none of the candidates*) which scopes over the whole clause and since *none of the candidates* is not increasing, nothing further is required. In our terms then, (47b) is simply the Classical NR variant of (48) and thus expectedly grammatical.

The key question is why the topicalization case (47a) is *not* grammatical. One might attribute that property to the fact that the topicalized DP is an island while a NEG has been extracted out of it by Classical NR. Such a view would though attack our claim that Classical NR can licitly extract from *DP* islands, a key to our analysis of Horn clauses like (47b). But there is no real reason to accept that (47a) is bad because of an *island* violation. Rather, we will argue that it is ill-formed because two independently justified constraints (having nothing to do with islands) impose contradictory, hence mutually unsatisfiable, conditions, on any interactions of Classical NR and constituent fronting under Topicalization like that in (47a). The first of these is a general condition on English Topicalization. The second is a condition on Classical NR in effect already in the literature but ignored in this work up to this point.

Ignoring irrelevant issues and utilizing the term *Topic* to refer to the topicalized phrase, the condition on Topicalization is stateable as follows:

(49) The Topicalization Condition

If in a structure $K = [_{Clause}\ Q\ X]$, Q is a topic, then:

(a) Q is (or dominates) a DP V such that V's scope position is higher than that of any other element in K, and $\sum(V)$ is a nondecreasing function with respect to K; and:

(b) V is not of the form [NEG Z].

A condition like (49) is needed because of robust facts showing that neither decreasing DPs nor DPs dominating decreasing DPs *with high scope* are suitable targets for topicalization:

(50) a. That/*No fashion magazine, I am sure he read.
b. Those/*Not many fashion magazines, people still buy.
c. Almost/*Not everyone, they plan to interview.
d. Many/*Few professors, the dean said were vampires.
e. More/*Less than thirty two admission candidates, they did contact.

(51) a. The debarring of not a single corrupt lawyer, she approved of.
b. Your willingness to interview not one star, Ted was shocked by.
c. Interrogations of no one, he said took little time.
d. He said interrogations of no one (= no interrogations) took little time.
e. No person X is such that he said interrogations of X took little time.

Example (51a) is good despite the fact that the topic contains a decreasing negative DP because the latter fails to have scope over the matrix clause. Similarly, (51b) is good because *not one star* does not take scope in the matrix clause. The situation in (51c) is different. A priori it might have either of the readings in (51d,e). But we find that its only meaning is represented by (51d), which is the only meaning under which (51c) satisfies condition (49).

Just as the Negative Fronting condition (20) must allow some increasing DPs to be NF foci, specifically those containing high scope negative phrases, the Topicalization condition (49) must bar some increasing DPs from being topics, specifically those containing high scope negative phrases. See:

(52) a. Jane invited no less than 70 people to her party.
b. *No less than 70 people, Jane invited to her party.
c. Jane purchased carvings of not less than 13 dragons.
d. *Carvings of not less than 13 dragons, Jane purchased.

Condition (49) blocks (52b) since the topic is a DP of the form [NEG Z]. And it also blocks (52d) since the topic contains a DP of the form [NEG Z] having the highest scope in the containing clause.[34]

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[34] Since condition (49) allows nonmonotonic topics and must because of examples like (ia, b), it does not block nonmonotonic *only* DP topicalizations like the ungrammatical (ii):

(i) a. Exactly three engineers, they can certainly afford to hire.
b. Every student except Richard, he definitely plans to fail.

(ii) *Only Richard, he definitely plans to fail.

While we have no worked out account of this fact, it would follow from (49) if phrases of the form $[_{DP2}$ only [definite DP_1]] derive from underlying phrases of the form $[_{DP2}$ no one except DP_1].

The situation is different for striking *only* phrase contrasts like that in (iii) pointed out to us by Pieter Seuren and Vincent Homer:

(iii) a. Only last summer he made headlines (and now he is dead).
b. Only last summer did he make headlines (after much trying).

With condition (49) having been briefly justified, we can ask whether, and if so to what extent, that condition provides insight into the ungrammaticality of (47a), repeated here:

(53) *I do not believe that Jerome's enthusiasm for any of the candidates, we actually discussed.

Suppose (53) is a case of Classical NR. Then it would arguably relate directly by the relevant NEG raising to (54a), which would seemingly be the topicalized version of (54b):

(54) a. I believe that Jerome's enthusiasm for none of the candidates, we actually discussed.
b. I believe that we actually discussed Jerome's enthusiasm for none of the candidates.

But, actually, things are more complicated, since (54a,b) differ in terms of scope properties.

The latter has at least two possible scopes for the negative quantifier DP, one internal to the constituent *Jerome's enthusiasm for none of the candidates*, equivalent to (55a), and the other with the scope of the negative quantifier internal to the complement clause but higher than its main verb *discussed*, roughly equivalent to (55b):

(55) a. I believe that we actually discussed Jerome's lack of enthusiasm for any of the candidates.
b. I believe that no candidate X is such that we actually discussed Jerome's enthusiasm for X.

Critically though, the topicalization example (54a) has only reading (55a). The absence of reading (55b) follows from condition (49) since reading (55b) has a decreasing negative phrase as the highest scoping element in the complement clause of *believe*, while the condition (49) requires that the Topic or one of its constituents have highest scope and be nondecreasing.

What has been shown then is the following. If (54a) is the source for the ungrammatical (53) under Classical NR, it can only be such on analysis (55a). To explain the ungrammaticality of (53) without invoking any island violation inconsistent with our condition (38), it is then sufficient to find an independently justified condition which would block Classical NR from (54a) on the interpretation in (55a).

We suggest that there is such a principle, one already in effect stated nearly forty years ago, as follows:

(56) Seuren (1974b: 192)

"There is, furthermore, the fact that the negative can only be raised out of an embedded S when it [= the negation *not*: CC/PMP] is *the highest operator*." (our emphasis: CC/PMP)

While we have again not seriously studied these cases, we suggest that there are two distinct *only* here, both distinct from that in (ii). We find that the *only* of the adverbial focusing case (iiia) paraphrases *as recently as* or adverbial *just* and appears to be an increasing operator, while that of the Negative Fronting case (iiib) paraphrases *not before* and appears to be a decreasing operator. Under these assumptions, the fronted phrase in (iiia) would not qualify as an NF focus under condition (20), while that in (iiib) would. And while we have not said anything about the conditions on adverbial focusing, arguably it is subject to a condition similar to that on topicalization in (49). In that case, the posited increasing phrase would rightly qualify for adverbial focusing in (iiia). Compare the clearly decreasing adverbs in (iv) which yield ungrammatical adverbial focusing constructions, even if there is no overt NEG:

(iv) a. *During no/not many summers he visited Nice.
b. *During zero/less than three summers he visited Nice.

Seuren did not give a fully explicit statement of the principle he was alluding to here, and because he was a supporter of the exclusively clausal/propositional level view of negation we rejected in note (31), our formulation could not have followed his in any event.

But Seuren motivated his proposed constraint on Classical NR with observations like the following. A Classical NR example like (57a) can only have the interpretation of (57b) not that of (57c):

(57) a. I don't suppose Fred often falls asleep during meetings.
b. I suppose that Fred doesn't often fall asleep during meetings.
c. I suppose that Fred often doesn't fall asleep during meetings.

We propose to reconstruct Seuren's proposal as follows:

(58) The Highest Operator Constraint (on Classical NEG Raising)
If a NEG raises from clause B to clause A, and NEG originates in W = [NEG Y], there is no quantificational element having a higher scope in B than W.

Recall from our discussion earlier that we understand scope in terms of height in a tree/graph (leaving open whether this is to be understood in terms of Quantifier Raising, Quantifier Lowering, or multi-dominance).[35]

This proposal assumes that in cases like (57a), the NEG originates in a position higher than *often*, while in (57c) NEG originates in a position lower than *often*, consistent with their meanings. Under these assumptions, condition (58) properly blocks reading (57c) for (57a) while allowing reading (57b).

Definite DP subjects never have any consequences for Classical NR. We assume that they are either not quantificational, thus always irrelevant for (58), or else that in any case where a definite DP might seem to otherwise wrongly invoke (58), the NEG involved raises from a higher position than the definite DP, yielding no detectable truth conditional difference.[36]

We can now return to the ungrammatical (53). We have already shown that a Classical NR analysis of this could only have (54a) as a source under scope analysis (55a). But under that analysis, the negative quantifier DP *none of the candidates* is not the highest scoping element in the complement clause. Rather, the increasing expression formed by the topic itself has the highest scope, as required by condition (49). But in that case, condition (58) is not satisfiable, and thus there is no legitimate Classical NR analysis of a topicalization example like (53). Moreover, this has been shown to be blocked without appeal to island constraints. Thus our goal

[35] Seuren's constraint in (56) and our modification of it in (58) resemble Linebarger's (1987: 338) Immediate Scope Constraint. Whereas the former governs the distribution of the special case of NEG raising represented by Classical NR, the latter governs the distribution of NPIs. This state of affairs could be taken to support the assumption of Postal (2005) that NPIs represent instances NEG Raising. Only that assumption appears to offer the possibility of unifying the two constraints. But it is beyond the scope of this article to attempt such a unification.

[36] Seuren also took his highest operator condition to be the basis of facts like (i):

(i) a. I suppose John might not be at home.
b. *I don't suppose John might be at home.

In his terms, the NEG itself was not the highest operator in (ia), but rather the modal *might* was. This worked because of a well-known constraint forbidding some modals including *might f*rom occurring under the scope of clausemate negation, accounting for the fact that (ia) has only the MIGHT > NEG reading. Given this constraint, Classical NR is blocked in (ib) by condition (58).

of showing that (53) did not conflict with our conception (represented by condition (38)) of the role of island constraints in constraining NEG raising has been achieved. What examples like (50) provide evidence for instead is the validity of the claim that the conditions on topicalization, here (49), and conditions on Classical NR, specifically, (58), yield mutually unsatisfiable requirements on Classical NR *from a topic*.

An important consequence for the understanding of the island condition in (38) emerges from the analysis above. Consider (47b) again. It follows from condition (58) that [NEG any of the candidates] in (47b) is the highest scoping element in the embedded clause. Hence given our structural notion of scope, that phrase will occur even higher in the structure of the complement clause of (47b) than the NF Focus. So the syntactic representation is roughly:

(59) I believe that [none of the candidates] [Jerome's enthusiasm for <[none of the candidates]> did we actually discuss.

If [none of the candidates] did not have the scope position indicated in (59), then condition (20) would not be satisfied. From this representation, Classical NR takes place, yielding:

(60) I NEG believe that [<NEG> any of the candidates] [Jerome's enthusiasm for <[none of the candidates]> did we actually discuss.

Actually, there is an equivocation here. Classical NR could a priori have raised the NEG from the high scope position or from the subconstituent of the NF Focus. Since in either case, there would be no extraction from a clausal island, no violation is predicted. Since the DP in the scope position is the highest in the embedded clause, we will assume that NEG raising takes place from the scope position. Such an approach is also more natural under our construal of Seuren's constraint in (58). However, solid argumentation to distinguish the two possibilities is beyond the scope of this article.

3.4 An Apparent Problem

As touched on in section 2 of this chapter, Horn (1975: 283; 1978: 169) offered, although with minimum data, the generalization that Horn clause complements are only possible with main predicates that are CNRPs, hence only in Classical NR environments. That generalization would determine patterns of CPNR/non-CPNR contrasts like that in (61):

(61) a. I did not anticipate/believe/feel/guess/imagine/think that ever would I have to flee the country.
b. McCawley (1998: 598)
*I didn't say that at any time has he visited Smith.
c. *I did not assert/admit/brag/concede/deny/determine/ grant/prove/state/suggest/testify that ever had my child won a prize.

However, cases one *might* take to be Horn clauses are possible with main clause predicates that never permit Classical NR, as in the following examples:

(62) a. I didn't accept that any of those problems had she ever really solved.
b. It was not proven that at any time had he contacted any of them.
c. She did not suggest that ever would she attempt to contact any of them.
d. We cannot testify that in any sense had he violated any law.
e. Nor can it be fairly said, that in any respect has he ever expressed a decided opinion **....** *(*books.google.com/books?id=4z8wAAAAIAAJ)

Readers may notice that the complement clauses in (62) all manifest an NPI-containing phrase distinct from that in the apparent NF focus position in the complement. While one might take this to be fortuitous, the ungrammaticality of (61b, c) suggests that it is not. We will refer to

clauses involving Negative Fronting of an NPI-containing phrase directly embedded under a matrix predicate which is *not* a CNRP as *quasi-Horn clauses*.[37]

The key question for the present study is what bearing quasi-Horn clauses have on the argument in earlier parts of this section favoring a syntactic approach to Classical NR, one based on the claimed linkage between Horn clauses and Classical NR? We suggest that the right answer is ultimately 'none'. The basis for that claim is our view that quasi-Horn clauses are not Horn clauses, thus cannot counterexemplify the claim that Horn clauses only occur with main clause CNRPs. That is, we claim that quasi-Horn clauses do not represent Classical NR as defined in section 1 because they do not involve the raising of a NEG from one clause to the next higher one.

That view of course leaves the proper analysis of quasi-Horn clauses unaddressed. While we cannot attempt a serious analysis here, we offer a few speculative remarks to suggest how and why it is justified to *doubt* that quasi-Horn clauses instantiate Classical NR.

We take the crucial factual difference between quasi-Horn clauses and Horn clauses proper to involve quantifier scope. As indicated earlier, in our view the scope of the quantifier represented by the fronted NPI-containing phrase is, for every genuine Horn clause, internal to

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[37] The Web provides cases of what we take to be quasi-Horn clauses which, however, unlike those in (62), have negative quantifier phrases or negative verbs in the main clause and not an isolated *not*. We have had no opportunity to study this type of quasi-Horn clause:

(i) a. No evidence was *presented* that at any time had the Complainant ever assigned, granted, licensed, sold, transferred or in any way authorized the Respondent to register or use the marks MARRIOTT REWARDS or MARRIOTT in any manner.
(arbiter.wipo.int/domains/decisions/html/2000/d2000-0610.html)

b. there was no *suggestion* that at any time had he been guilty of any impropriety at all.
(www.parliament.the-stationery-office.co.uk/pa/cm199293/cmhansrd/1992-11-12/Debate-7.html)

c. Dr. John Trotter denied that at any time had he knowingly caused any of Dr. Rooms's patients to be put on the firm's list
(www.ncbi.nlm.nih.gov/pmc/articles/.../pdf/brmedj03822-0041.pdf)

d. but nothing was found to indicate that at any time had he shown any talent or inclination towards this area.
(onlinelibrary.wiley.com/doi/10.1111/j.2044-8260.1967...x/pdf)

And Vincent Homer points us to:

(ii) I have found no evidence suggesting that at any time did the policymakers harbor doubts on the effectiveness of the law of one price to decisively and immediately reduce the rate of inflation of traded goods (Gil, 1980).
http://kellogg.nd.edu/publications/workingpapers/WPS/146.pdf

This case furthermore lacks the second complement NPI we suggested in the text might be characteristic of quasi-Horn clauses.

We suspect nonetheless that such cases fall under the same principle as the multiple NPI cases, involving formation of a complex quantifier DP. But all the cases in (i) and (ii) raise complex problems and seemingly unstudied issues and their treatment is far beyond the scope of the present work.

the complement clause. But for quasi-Horn clauses, the scope of the relevant quantifiers is the main clause. Consider first quantifier scope in a Horn clause like (63a):

(63) a. I don't think that under any circumstances would John do that.
b. I think that under no circumstances would John do that.

This pair shares an interpretation where the content of the specified thought is 'Under no circumstances would John do that'. This is supported by the agree-test of chapter 2. If, following statement of either (63a, b), somebody utters (64a), the further discourse represented by (64b) is perfectly natural.

(64) a. Do you agree?
b. Yes, under no circumstances would John do that.

What then of quasi-Horn clauses like (65a), which has the non-quasi-Horn clause variant (65b):

(65) a. Violette did not claim that at ANY time could Ted be elected to ANY office.
b. Violette did not claim that Ted could be elected to ANY office at ANY time.

We find them most natural with strong stress on both occurrences of ANY. We take (65a, b) to both mean (66):

(66) There is no pair X of offices and Y of times such that Violette claimed that Ted could be elected to Y at X.[38]

The meaning described in (66) is equivalent to taking the main clause negation and the two NPIs to form a binary polyadic negative existential quantifier with main clause scope. So (65a) denies that Violette made a proposal about Ted's electoral possibilities. It does not claim that Violette proposed (67):

(67) Under no conditions could Ted be elected to any office.

Nor does (65a) mean something like (68):

(68) Violette did not claim that Ted could be elected to some office at some time.

Regardless of whether the two existentials *some office* and *sometime* have main clause or embedded clause scope, the resulting interpretation is wrong. The former provides meaning (69a), the latter (69b):

(69) a. There is some office X and some time Y such that Violette did not claim that Ted could be elected to X at Y.

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[38] On polyadic quantifiers see e.g. van Benthem (1989), Keenan (1992, 1996), May (1989), Moltmann (1995), de Swart (1999), de Swart and Sag (2002) and Peters and Westerståhl (2006: 16, 66). It is plausible that formation of such a quantifier is a defining feature of quasi-Horn clauses, which would explicate the ungrammaticality of cases like (61b,c).

We also believe there is a close connection between quasi-Horn clauses and instances of so-called *secondary triggering* (see e.g. Horn, 2001: 181) as in:

(i) Jerome did not testify that *Karen/any manager knew a fucking thing/squat$_A$ about the missing funds.

This has been described as involving situations where the presence of a non-strict NPI like *any* X somehow rescues the grammaticality of a strict NPI in contexts where the strict NPI is otherwise ungrammatical. We note that such cases also seem to involve expressions forming a high scope polyadic quantifier. But multiple NPI presence not the presence of a non-strict NPI is arguably what is critical, since cases containing two or more strict NPIs seem acceptable:

(ii) Jerome did not state categorically that a fucking soul said *that/a fucking thing/squat$_A$.

b. Violette did not claim that there is some office X and some time Y such that Ted could be elected to X at Y.

Neither of these comes close to representing the meaning of (65a), which involves negative existential quantification scoping over the main predicate. For example, consider (69b). Suppose a speaker asserts that Violette made the claim that Ted could be elected to some office at some time (without specifying any particular offices). Example (69b) denies the assertion, but (65a) does not.

Against this background, quasi-Horn clauses give rise to the following paradox. Although occurring in the main clause and determining quantifier scope over the main clause, the NEG in quasi-Horn clauses appears in some sense to also occur in the complement permitting the fronted DP, as in Horn clauses, to be analyzed as an NF focus (e.g., providing for the fronted DP in (65a) an analysis [at NEG ANY time]), legitimizing subject auxiliary inversion. So the NEG in quasi-Horn clauses cases appears from certain points of view to be in both the main and complement clauses and to have this property without instantiating Classical NR (where the raised NEG always takes embedded clause scope).

Moreover, critically for our view of these matters, the negative quantifier DP which we take to be formed by the upstairs NEG and the downstairs apparent NF focus *at any time* also appears to be in both the main and complement clauses. It is in the main clause in the sense that that is where its scope lies. It is in the embedded clause in that it appears to sanction Negative Fronting there. That is, one wants the main clause scoping negative quantifier to provide the structure for the fronted DP in the complement clause to satisfy Negative Fronting condition (20). And it can do this since the formulation of (20) allows an NF focus (or some DP it dominates) to have scope higher than the clause immediately containing the fronted phrase. Of course, constraints will be needed on that possibility; we suspect that these allow higher scope only as part of a structure representing a polyadic quantifer.

We take the high scope of negative quantificational expressions like *at any time* (with representation [at <NEG> any time]) in (65a) to be crucial to understanding quasi-Horn clauses. As already stressed previously, we take no particular stance on how to represent the high scope of the negative quantificational expression. The possibilities include quantifier raising, quantifier lowering, and multi-dominance, e.g. via the existence of *overlapping arcs* in the sense of Postal (2011). Under any of these systems, the negative quantificational expression can be taken to syntactically occupy a position in both the matrix and complement clauses.

The key feature of the ideas sketched here is that since the negative quantifier including the NEG of the NF focus occurs in the main clause in the scope position, the separated NEG found in the main clause in cases like (65a) can achieve its surface position *by raising out of the negative quantifier phrase in the matrix scope position*. That is, the analysis need not invoke Classical NR, rightly taken in Horn's work and here to be impossible except with CNRPs. It is this possibility which underlies a resolution of the paradox of how a NEG which seems in one sense to originate in a complement clause can end up in the dominating main clause *without violating the constraints on Classical NR*. And this is our basis for suggesting that quasi-Horn clauses do not instantiate Classical NR.

We recognize the extremely programmatic character of these remarks and that they involve many radical and surely controversial ideas. In no sense do we claim to have justified any analysis of the sort hinted at. But our remarks suggest some basis for the conclusion that quasi-Horn clauses are not Horn clauses and hence cannot bear on the soundness of the argument from Horn clauses for the syntactic nature of Classical NR.

Chapter 4 An *Apparently* Decisive Antisyntactic Argument

4.1 The Argument

The argument at issue here depends on the existence of a well-documented variant of the Classical NR phenomenon involving not an overt main clause auxiliary instance of NEG as in (1a) but instead one or another negative quantifier phrase, as with those highlighted in (1b-f):

(1) a. Graham did not expect that she would arrive until Saturday.
b. *No one* expected that he would breathe a word about it.
c. *Not a single linguist* figured that in any sense was he anti-American.
d. *No linguist* imagined that Carla had told a living soul about her father.
e. *None of us* thought that he would stop at anything to achieve that.
f. *Not one linguist* thought that Ralph understood squat$_A$ about gas turbines.

Each of (1b-f) has a CNRP in the main clause and a strict NPI in the embedded clause. Such a strict NPI needs to be licensed by a local clause mate negation. However, the matrix clause of none of these examples contains an overt NEG that could have raised from the embedded clause. That renders it unclear how one could invoke Classical NR in such cases. So examples like (1b-f) pose a serious problem for the idea that Classical NR is what allows strict NPIs to be separated from negation in (1a) as supporters of a syntactic view of Classical NR have claimed. In the present chapter, we show how this argument has been elaborated in the literature on Classical NR and then argue why it lacks the force against syntactic views that it has been claimed to have.[39]

The basic argument against a syntactic view of Classical NR based on data like (1b-f) is seen in the following quote:

(2) Horn (1978: 170)

> "Similarly, the negatives appearing in the quantificational expressions in the sentences below would (on their lower-clause reading) be incorporated after raising from their positions in the corresponding primed examples:
>
> (101) a. *Nobody would suppose anymore that the war was worth it.*
> a'. Everybody would suppose {now/%anymore} that the war was not worth it.
> b. Not everyone thinks I ought to leave you.
> b'. Someone thinks I ought not to leave you.
> c. {Only/nobody but} John intends to vote for Porky Pig.
> c'. Everybody but John intends not to vote for Porky Pig.
>
> In each of these cases the negative is semantically associated with a clause below the NR predicate(s) (*suppose, think, ought, intend*) although lexically incorporated above it. A plausible alternative to account for this reading is to semantically decompose (e.g. via meaning postulates) *nobody*, *not everyone*, and *only* into quantifier+neg complexes feeding Neg-Association."

Let us refer to the argument based on data like Horn's (101) as the *Composed Quantifier Argument*. In a nutshell, the argument is this: to maintain Classical NR in examples like (1b-f), one would have to assume that there is a raised NEG and that it somehow lexically incorporates

[39] We assume that the high scope readings discussed in section 4 of chapter 3, and in particular in note 37, are not relevant here. Most importantly, whereas the readings in note 37 are possible with non-CNRPs, facts like those of (1) are restricted to CNRPs.

into the matrix clause quantifier. Since such an analysis is at best implausible, no NEG can have raised in (1b-f).

Horn and Bayer (1984) restated the argument and Horn (1989 [2001]) restated it once again:

(3) Horn (1989 [2001: 314-315]):

"Any coherent transformational program for the NRP must countenance a syntax in which Neg-Raising feeds those incorporation rules which result in the formation of the lexical items in (44) (cf. Horn 1978b: 170-71):

(44) nobody -er than
neither ... nor few
{neither/none} of scarcely (any)
only doubt

Thus, the sentences of (44') are understood with the (italicized) incorporated negative taken in each case as semantically within the scope of the (boldface) neg-raising trigger to its right:

(44') *Nobody* **supposes** that nuclear war is winnable.
Neither Mutt *nor* Jeff **think(s)** that Chris has been here in weeks.
{Neither/ None} of them is (are) **likely** to marry you.
Only Kim **intends** to seek reelection.
I spent *more than* I **should** have.
{Few/ Scarcely any} of my friends **believe** you'd lift a finger for me.
I *doubt* that he {**wants/plans**} to resign just yet.

Thus, the first example is taken as suggesting that everybody supposes nuclear war is not winnable, the second that both Mutt and Jeff think that Chris hasn't been here in weeks, and so on… For those who subscribe to the currently received view that rules of word formation (as opposed to rules of inflectional morphology on some accounts) are not to be interspersed with rules of syntax, the thesis that a syntactic rule of NR applies to the output of the lexical formative process involved in the creation of …the operators in (44) amounts to a reductio of the syntactic program for the NRP."

This version of the argument makes explicit that the conclusion depends on rejection of the idea that the NEG putatively raised by Classical NR could disappear in the lexicalization of various quantifiers.[40]

The Composed Quantifier Argument really has at least two aspects. Both depend on the claim that a higher clause NEG is semantically associated with the lower clause, a claim supported by strict NPI examples like (1b-f), of which Horn gave several. The first aspect of the argument is that even in the clearest cases like Horn's (101a,b), building a syntactic Classical NR-based analysis including the lower negation seemingly requires treating the main clause quantifier DP, e.g. *Nobody* in his (101a), as involving a post Classical NR composition of some quantifier DP with the putatively raised NEG. This conclusion was based on the assumption that

[40] The lexicalization assumption central to it was not a straw man due to Horn. Actual proposals of that sort had been made. So Seuren (1974b: 195-197) explicitly claims the underlying structure of the Classical NR reading of (ia) is (ib), requiring lexicalization of *Everybody* + NEG as *Nobody*.

(i) a. Nobody thought that John would get here until tomorrow.
b. Everybody thought that John wouldn't get here until tomorrow.

only that kind of composition can yield the right meaning. The second aspect depends on the claim that there are certain matrix quantifiers that license embedded NPIs which cannot be naturally seen as being composed of another quantifier plus negation. We discuss both aspects below.

4.2 The First Aspect of the Argument

Consider the first aspect of the argument. A syntactic Classical NR analysis of (4a) requires taking the phrase *No linguist* to be a syntactic composition of the raised NEG and a distinct universal quantifier, *Everybody*, since (4a) is of course equivalent to (4c) not to (4b) (assuming the Excluded Middle Property of *believe*).

(4) a. No linguist believes that the columnist knows shit_A about the subject.
b. No linguist believes that the columnist does not know shit_A about the subject.
c. Every linguist believes that the columnist does not know shit_A about the subject.

So the first and most basic objection raised by the Composed Quantifier Argument to a syntactic view is that *lexicalization* would have to be fed by Classical NR. Putatively, the analysis of (4a) would involve combining the *Every* quantifier of (4c) with a raised NEG to yield the *No* of (4a). The conclusion seems to have been that cases like (4a) show that a syntactic conception of Classical NR requires a view of lexicalization under which the latter must operate on the output of syntactic operations. And that possibility was not popular in relevant grammatical circles at the time.

The first aspect of the argument, taken as showing that syntactic approaches in general are inadequate, is extremely weak since it attacks a particular syntactic analysis, not syntactic analyses in general. We outline one alternative without seeking to seriously justify it here, an unnecessary task for present purposes. What is minimally required is only to indicate that the argument based on (4a) taken to undermine a syntactic view of Classical NR has no force against the alternative that we present. We turn to a demonstration of that presently.

The Composed Quantifier Argument has apparently been broadly convincing. We know of no explicit rejection of it in the literature. And variants of it are restated as definitive by other authors, for instance, in the following quote:

(5) Gajewski (2007: 22)

"Also notice that to explain the licensing of *until* in (83) (=*No one thought Bill would leave until tomorrow*: CC/PMP), a syntactic account would have to decompose the negative subject into negation and a universal quantifier:

(91) a. SS: [every one not thought [that Bill _ left]]
"no one"
b. LF: [every one _ thought [that Bill not left]]

As Horn (1978) has already pointed out, this is problematic. While decomposition of negative quantifiers like *no one* is often proposed, most evidence supports decomposing it into negation and an existential/indefinite, cf. Kratzer (1995), Potts (2000), Penka & von Stechow (2001). Having two such different decompositions of a single form should be avoided."

The argument is also recently formulated as follows:

(6) Homer (2010: 3-4)

"This purely syntactic view is hard-pressed to explain neg-raising with negative quantifiers, e.g. *no one* and *never:*

(3) a. No one wants to help me.

b. *Paraphrasable as:* Everyone wants not to help me.

(4) a. John never wants to help me.

b. *Paraphrasable as:* John always wants not to help me.

(3a) and (4a) are preferentially interpreted as meaning (3b) and (4b) respectively. Here again, it seems that negation is interpreted in the scope of the embedding predicate; what is surprising though is that the paraphrases contain positive universal quantifiers (*every* and *always*). If interpreting negation in the embedded clause is all there is to neg-raising, then the facts are inexplicable. The reason is that if negative quantifiers spell out negation and an existential quantifier (as is now standardly assumed, cf. Jacobs 1980, Ladusaw 1992, Geurts 1996, de Swart 2000, Zeijlstra and Penka 2005, Penka 2007, Iatridou and Sichel 2008 a.o.1), the reading that the negative transportation hypothesis (i.e. syntactic neg-raising) predicts is inadequate. It is given in (5b) below; (5c) is the paraphrase of the result of reconstructing the entire negative quantifier (negation and the existential quantifier). Not only is the actual reading not derived, but the two readings obtained by reconstruction are simply unavailable.

(5) a. NEG_1someone want [$t_1$help]

b. Someone wants not to help me.

c. (There) wants no one to help me.

The syntactic accounts are therefore insufficient."

However, what the Composed Quantifier argument shows is not that syntactic accounts are generally insufficient but rather at worst only the inadequacy of certain *particular syntactic assumptions*. The flaw in the Composed Quantifier Argument as a *general* attack on syntactic views of Classical NR is simply this. The assumption that getting the meanings right in examples like (4a) needs to depend on post-Classical NR composition of the quantifiers cited is just false. The relevant sentences can be correctly characterized with no such composition of the quantifiers at all. One can avoid wrong meanings and obtain the right ones without lexicalization of raised NEGs. We will show this by presenting a viable syntactic analysis of the composed quantifier cases which is free of the properties underlying the strong criticisms we have just documented.

4.3 NEG Deletion

The alternative syntactic analysis of the putative composed quantifier cases to be presented depends on the recognition of the concept of NEG deletion. It is not our purpose to provide a worked out theory of NEG deletion in this section. Our more modest goal is to show that the idea of NEG deletion is not an ad hoc invention developed merely to undermine the Composed Quantifier Argument. We observe relevantly that the idea of NEG deletion goes back at least to Klima's (1964) analysis of Classical NR in terms of 'NEG absorption' (an account sharply different from our own).[41] Beyond historical points, we now indicate that there are reasons independent of our analysis of the composed quantifier cases to believe that NEG deletion is a real grammatical phenomenon.

We take NEG deletion to mean that a semantically contentful NEG (normally spelled *not*, *n't* or *no* in English) is realized as phonetically empty (but crucially still semantically present). We briefly consider two English cases which give plausible initial support for the existence of

[41] Fauconnier (1971: 222) proposed a rule of the form:

(i) NEG NEG $\rightarrow$ Ø

NEG deletion. The first involves so-called *expletive negation.* Expletive negation, which is extremely marginal in English (see Pullum, and Huddleston, 2002: 845-846), is illustrated in:

(7) I wouldn't be surprised if it didn't rain. (on reading: 'if it did rain')

Example (7) represents a case where morphological negation seems to have no semantic function. One approach to expletive negation (proposed in van der Wouden 1994: 41) assumes a second, null (identity function) meaning for NEG distinct from the standard meaning, which is the semantic complement function (see Keenan 1996: 53). That is, if X denotes K in model Q, [NEG(X)] denotes the complement of K in Q. Van der Wouden's view would assume that the embedded clause NEG in (7) instantiates the semantically vacuous NEG.

But an equally plausible approach denies the existence of a null meaning for NEG and instead posits a second, deleted, NEG in embedded clauses like those in (7), where both NEGs have the unique standard meaning. The underlying structure of (7) on this view would be the following:

(8) I wouldn't be surprised if it did [NEG_2 [NEG_1 rain]].

The meaning of such sentences is achieved by appealing only to the standard meaning of NEG since for all X, the complement of the complement of (NEG(X)) is X. So the complement clause in (7) is rightly claimed to be essentially equivalent semantically to *It didn't NOT rain.*

Evidently though, to relate (8) to the actual form of (7) requires that one of the NEGs, we assume this must be NEG_2, the highest, has to be deleted. We take this to be a special case of a general phenomenon of NEG deletion subject to a variety of general constraints, which we can barely touch on here; see Postal (2005) for more detailed discussion. The phenomenon has at least the following properties:

(9) Constraints on NEG deletion

a. NEG deletion is taken to only be possible via a syntactic relation R between a deleted NEG and a distinct constituent called a *NEG deleter*;

b. R must be local, possibly even requiring its arguments to be sisters;

c. NEG deleters are of at least two types, we will call *general* and *lexical*. The conditions on general NEG deleters are essentially identical to those generally now taken to govern NPI licensers. These are required to be semantically decreasing (or at least nonincreasing) elements. Thus negation and decreasing negative phrases are stereotypical general NEG deleters.

d. Elements (phrases) not satisfying the semantic conditions on general NEG deleters can be NEG deleters of the lexical type only via an explicit marking to this effect.

Under our view, in (8) the NEG deleter can be taken to be the complementizer realized as *if*; this is a lexical NEG deleter case. We claim that some main predicates select for such a NEG deleting complementizer.[42] The relevant predicate in (7) is arguably [NEG surprise], since *surprise* alone permits no expletive negation reading in its complement:

(10) I would be surprised if it didn't rain. ≠ 'I would be surprised if it rained'.

Furthermore, we claim that NEG_2 raises to *if* (perhaps by head adjunct), and then deletes.

As a second case of NEG deletion, consider complements of an adjectival phrase modified by *too*, as in (11a, b), where the complement clause main verbs are CNRPs:

(11) a. Dana is too cynical to believe/think that at any time would Mary help Kyle.

b. Dana is too cynical to believe/think that Mary would lift a finger to help Kyle.

[42] Plausibly, NEG-deleting complementizers in English are related to the so-called negative complementizers in languages like Basque (see Laka, 1990: 210).

Several factors suggest the presence of nonovert NEGs in these complements. First, each of the sentences is essentially equivalent to a corresponding finite clause in which the NEG is explicit (Pullum and Huddleston, 2002: 837):

(12) a. Dana is so cynical that she thinks that at no time would Mary help Kyle.
b. Dana is so cynical that she thinks that Mary would not lift a finger to help Kyle.

Second, in the light of earlier discussion, the presence of the strict NPIs represented by the Horn clause in (11a) and the expression *lift a finger* in (11b) also supports the conclusion that the complements in (11) contain NEGs. That is, the structure of (11b) would be:

(13) Dana is too cynical [COMP [to believe/think that Mary would [NEG lift a finger to help Kyle]]].

Moreover, the conclusion is strengthened by the fact that analogs to (11a, b) in which the complement main verb is replaced by a *non-CNRP* are ungrammatical:

(14) a. *Dana is too cynical to admit/conclude that at any time would Mary help Kyle.
b. *Dana is too cynical to admit/conclude that Mary would lift a finger to help Kyle.

In a framework which recognizes NEG deletion and adopts the view that this requires appropriate NEG deleters, the contrast is accounted for as follows. We assume that the highest complementizer in the infinitival complements of *too* phrases is the needed NEG deleter, again a lexically marked one. Presumably, this complementizer is a null infinitival realization of that realized as *if* in (7). In the cases like (11), where the intermediate clause main verb is a CNRP, as in structure (13), the NEG which originates in the lowest clause as part of the strict NPI can raise to yield a local (even sister) relation to the complementizer (e.g., in Principles and Parameters terms by head adjunct of NEG to COMP). This will satisfy the locality constraint on NEG deletion, because such NEGs can raise into the intermediate clauses whose predicates permit Classical NR. But in variants like (14), where the main verbs of the intermediate clause are not CNRPs, violations ensue for exactly the reasons they do in simple correspondents like:

(15) a. *Dana did not admit/conclude that that at any time would Mary help Kyle.
b. *Dana did not admit/conclude that Mary would lift a finger to help Kyle.

That is, recognition of NEG deletion permits the conclusion that in (14) just as in (15) the ungrammaticality is due to a violation of the condition permitting Classical NR only with CNRP main verbs.

The argument for NEG deletion associated with adjectival modifier *too* is strengthened by examples like (16a):

(16) a. Rachel is too nice not to help people in need.
b. Rachel is so nice that she won't fail to help people in need.

Here, curiously from a standard point of view, although the complement of (16a) contains an overt NEG, it is understood positively, that is, as roughly equivalent to (16b). The structure of (16a) is representable in our terms as:

(17) Rachel is too nice [COMP [NEG_2 to [NEG_1 help people in need]]]

Here again the complementizer would be the lexical NEG deleter, for NEG_2.

Of course, the examples of NEG deletion just invoked raise more questions than we could possibly attempt to address in this monograph. However, we hope to have provided enough initial evidence to show that the concept of NEG deletion, central to the analysis which we will now advance to undermine the composed quantifier argument, has not just been created ad hoc to handle the relevant quantifier DP cases of Classical NR.

4.4. A Syntactic Alternative to Composed Quantifier Analyses

Our analysis of the putatively composed quantifier examples focuses on the equivalent sentences in (18a,b) having main clause CNRPs and the ungrammatical parallel of (18b) in (18c), whose main predicate is not a CNRP:

(18) a. Every professor believes that Mike does not know jackshit$_A$ about physics.
b. No professor believes that Mike knows jackshit$_A$ about physics.
c *No professor claims that Mike knows jackshit$_A$ about physics

Three things need to be explained. First, why is the strict NPI *jackshit$_A$* licensed in the embedded clause in (18b), in the absence of any overt local licensing negation? Second, how is it that (18a, b) are logically equivalent (a question taken up in section 5 of this chapter)? And third, why is (18c) ungrammatical?

Our answer to the first and third questions hinges on the proposal that (18a,b) are associated with the respective structures (19a,b):

(19) a. Every professor believes that [Mike does know [NEG$_1$ jackshit$_A$] about Physics].
b. No professor believes that [NEG$_2$ [Mike knows [NEG$_1$ jackshit$_A$] about physics]]

In (19a), NEG$_1$ originates as a sister to *jackshit$_A$*, raises to the embedded Aux node, and is spelled out overtly. In (19b), NEG$_1$ originates in the same position of the embedded clause, accounting for the presence of the strict NPI. But in addition to NEG$_1$, there is also a NEG$_2$. And in (19b), both NEG$_2$ and NEG$_1$ are deleted, in ways we touch on presently. The critical element here is the posit of NEG$_2$, whose existence no version of the Composed Quantifier Argument has ever contemplated.[43]

The deletions rendering covert the two NEGs posited for (18b) in structure (19b) can satisfy the general conditions on NEG deletion in (9). First, NEG$_1$ can raise to be in a local relation with NEG$_2$, which satisfies the semantic conditions for being a general NEG deleter. No other element in the complement of *believe* satisfies those conditions, so NEG$_2$ finds no NEG deleter in that complement.[44] But since *believe* is a CNRP, NEG$_2$ can raise into the main clause and enter into a local relation with the decreasing phrase *No professor*, which does satisfy the conditions on general NEG deleters.

Next, we take the underlying structure of the ill-formed (18c) to be:

(20) No professor admits that [NEG$_2$ [Mike knows [NEG$_1$ jackshit$_A$] about physics]].

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[43] We should comment on the fact that NEG$_2$ in such a structure appears to be a clausal NEG. Our posit of such is not incompatible with our earlier rejection (see note 31) of the idea in Klima (1964), McCawley (1998) and many other places that natural language negation is *always* clausal syntactically and hence propositional semantically. Nothing in our rejection entails the nonexistence of *some* instances of clausal negation.

[44] The marking of any particular form as a lexical NEG deleter is a complication of a grammar which otherwise needs no such marking and is thus always to be avoided if possible. Notably then, there is no motivation to take the complementizer *that* of (18b) to be specified as such. And to add to the Occam's Razor basis for rejecting that idea, it would yield undesirable results in cases like:

(i) *Sarah believes that Tom stole a damn thing.

Here, if the complementizer *that* were a NEG deleter, it would be obscure why it cannot delete the NEG associated with the strict NPI.

Since the complement clause here is overall identical to that in (19b), the deletion of NEG_1 is as unproblematic here as in the earlier structure in (19b). But again NEG_2 finds no deleter in the complement clause and hence could only find one in the main clause.[45] But the fundamental difference between (18b,c) is now apparent. NEG_2 in (20) unlike its correspondent in (19b) could raise into the main clause only by violating the conditions on Classical NR, since the main verb is not a CNRP.

We have thus shown how in a system recognizing a rich array of NEG deletions subject to strict conditions including those in (9), one can provide a syntactic analysis of putative composed quantifier cases which involves no quantifier composition at all and which yields a clear and intuitive account of the difference between pairs like (18b,c), a difference which reduces as desired to the difference between main verbs which allow Classical NR and those which don't.

The considerations presented here render the sort of data involved in the Composed Quantifier Argument irrelevant to the issue of whether Classic NR is syntactic. These considerations also hold for the variant based on coordinate cases like (21) (based on examples in Horn (1978: 171-172):

(21) a. Neither Mutt nor Jeff thinks that the movie is half bad.
b. Both Mutt and Jeff think that the movie is not half bad.

Here too an analysis with two NEGs in the complement as in (22) eliminates any motivation for appealing to composed quantifiers:

(22) Neither Mutt nor Jeff thinks that [NEG_2 [the movie is [NEG_1 half bad]]

Everything proceeds just as in our analysis of (18b), with the phrase *Neither Mutt nor Jeff* the general NEG deleter of NEG_2, which is legitimate because *Neither Mutt nor Jeff* is semantically a decreasing function.

This excursus then shows that there is a syntactic treatment invoking Classical NR which in no way invokes lexicalization operating on the output of Classical NR and which requires no complex building of one set of quantifier expressions from combinations of raised NEGs with others. Hence no argument based on the assumed nonexistence of such phenomena has any relevance.[46]

Of course, one might object to several aspects of our proposed syntactic account of cases like (18), (20) etc. The biggest issue is what syntactic principles determine when a NEG is deleted and when not. Since we have offered only a sketchy indication of the nature of these principles in (9) and hardly any justification for them, one objection is that our alternative

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[45] This conclusion depends on a further general condition on NEG deletion to the effect that NEG_a cannot delete another, NEG_b, if NEG_b's underlying position c-commands that of NEG_a.

[46] Arguably, elements of the Composed Quantifier Argument originate in Jackendoff (1971: 292). Discussing examples including (i), Jackendoff made the flat claim in (ii):

(i) Scarcely anybody expected him to get there until after 5:00.
(ii) "For these sentences *there is no way to have an underlying negative in the complement sentence* that will condition the use of *until.*"
(Emphasis ours: CC and PMP)

Evidently though, statement (ii) was simply an early advancement of the central error of the Composed Quantifier Argument, the failure to consider the logical possibility NEG Deletion. As that shows, there is a way, specifically for Jackendoff's (ii):

(iii) Scarcely anybody expected him [NEG_2 to get there [NEG_1 until after 5:00]]

syntactic treatment is neither well-grounded nor plausible. We cannot address that objection here. But such is unnecessary for the logic of our argument that the Composed Quantifier Argument has not been shown to bear on the syntactic nature of Classical NR. That is, our goal has not been to provide a justified syntactic analysis of the supposed composed quantifier cases but only to show that previous conclusions based on the Composed Quantifier argument that such cases *definitively undermine* syntactic views of Classical NR *in general* depend on unjustifiably (and never justified) restricted and narrow assumptions about the class of syntactic analyses which need be considered.

To close this section, note that deriving the semantic equivalence of the sentences (18a) and (18b) demands the Excluded Middle Property.

4.4 The Second Aspect of the Argument

The failure of the first aspect of the Composed Quantifier Argument to genuinely undermine a syntactic conception of Classical NR renders the secondary aspects entirely irrelevant as well. For Horn (1978: 171), those involved the observation that for cases like (23), there is no exact paraphrase in which a *not overtly negative* quantifier phrase in the main clause with an overt NEG in the complement yields an equivalence:

(23) a. Few of my friends think I would lift a finger to help them.
b. Only my friends think I would lift a finger to help them.

The assumption is that *few x VP* is not equivalent to for instance *many x V not P* and that *only x VP* is equivalent only to complexes like *someone other than x V not P*. But internal to the sort of analyses we have suggested, these nonequivalences, or equivalences with highly implausible required combinations, are entirely irrelevant. The structure of (23a), which would be (24), doesn't involve any main clause quantifier DP distinct from the overt one in (23a).

(24) Few of my friends think that [NEG_2 [I would [NEG_1 lift a finger] to help]]

The same logic defangs the other points made by both Gajewski and Homer. Their key point is that the syntactic view of Classical NR requires not only composition of quantifiers with raised NEGs, but in particular compositions such that *no* must be composed of *every* + NEG. This is undesirable since, as they observe, it is conventional wisdom that in general *no* is a composition of NEG + *some*. But this consideration is rendered irrelevant by the fact that the analysis we sketched involves no quantifier phrase composition at all.

4.5. The Independence of Classical NR from the Excluded Middle Property

In this section, we consider more closely the relations between the Excluded Middle property and Classical NR, particularly, in connection with the composed quantifier examples. We show that while the Excluded Middle property can derive the paraphrase or logical equivalence relation between e.g. (25a,b), that is insufficient to account for facts for which Classical NR has been invoked and hence *does not render the latter redundant*.

Consider the following sentences:

(25) a. Everybody thinks that Carol is not happy.
b. Nobody thinks that Carol is happy.

Their equivalence follows from the Excluded Middle property, as follows. Assume that for each person x, either x thinks that Carol is happy, or x thinks that Carol is not happy so that every person has some definite opinion about Carol's happiness. Then supposing that (25b) is true yields the following inferences:

(26) a. Nobody thinks that Carol is happy.

b. Everybody does not think that Carol is happy. (on reading every > not)
(from the logical equivalence: no x (P(x)) = every x (not(P(x)))
c. In particular, A does not think that Carol is happy.
d. Therefore, by the Excluded Middle property,
A thinks that Carol is not happy.
e. Since A was arbitrarily chosen, everybody thinks that Carol is not happy.

This set of inferences has nothing to do with syntactic Classical NR and depends only on the Excluded Middle Property. That is shown by the critical fact that even in cases where Classical NR is blocked (out of islands), the same inferences are valid, as long as the Excluded Middle property is invoked.

(27) a. Everybody has the belief that Carol is not happy.
b. Nobody has the belief that Carol is happy.

Clearly, given the Excluded Middle property, (27a,b) are equivalent. However, as shown in detail earlier, Classical NR is impossible from the complement of a derived nominal (see chapter 2), as supported by the fact that strict NPIs are not licensed in these complement clauses:

(28) a. Everybody has the belief that Carol doesn't know jackshit$_A$ about physics.
b. *Nobody has the belief that Carol knows jackshit$_A$ about physics.
c. Everybody has entertained the thought that Carol won't arrive until later.
d. *Nobody has entertained the thought that Carol will arrive until later.

These examples show that syntactic Classical NR is not only not necessary to obtain the logical equivalence between (27a, b) (since the Excluded Middle Property does what is needed), it is irrelevant to obtaining the equivalence. Similar examples of equivalences can be given with the other islands we discussed in chapter 2.

Returning to (18a,b), one needs the Excluded Middle Property to derive their semantic equivalence, but the Excluded Middle Property has nothing to do with licensing the strict NPI in (18b). Rather, the licensing of the strict NPI in (18b) depends on the presence of a covert NEG, which undergoes raising and deletion.

The documented independence of the Excluded Middle Property and Classical NR means that no appeal to the former can account for facts linked narrowly to the latter, such as the possibility of strict NPIs in cases like (29a,c), their impossibility in (29b,d):

(29) a. No professor believed that Tony would breathe a word about it.
b. *No professor had the belief that Tony would breathe a word about it.
c. No professor believed that in any sense had Sandra plagiarized that work.
d. *No professor had the belief that in any sense had Sandra plagiarized that work.

On the contrary, we have indicated that the claim that such NPIs require local negation combines with island condition of chapter 2 to rightly distinguish these pairs.

Now one might claim that while always associated with the verbs *think/believe*, the Excluded Middle Property is not lexically attached to the nouns *thought/belief*. Such an account would differentiate semantic deductions where the EM property is lexically specific and those where the EM property is contextually invoked (depending on the context of utterance). Such an account is a priori implausible given that *think/believe* and *thought/belief* in their complement clause-taking usages differ only in grammatical category. Therefore, it would be difficult indeed to justify an approach where *think/believe* but not *thought/belief* are associated with a specific lexical property.

We conclude that the influential idea in Bartsch (1973) that the Excluded Middle property permitted a nonsyntactic account of everything Classical NR was intended to account

for was an error. Specifically, contrary to what the formulations of the Composed Quantifier argument have assumed, the inferences derivable from the Excluded Middle Property are present in a much broader range of cases than can be analyzed in terms of Classical NR. Hence even acceptance of some role for the Excluded Middle Property does not exclude an independent phenomenon of Classical NR and hence cannot serve as any basis for a conclusion that there is no independent syntactic conception of Classical NR.

4.6 The Apparently Decisive Argument: Conclusion

Several consequences need stressing. First, one might of course adopt a syntactic view in which either structures like those in (19) and (20), etc., or the NEG deletions they require, or both are impossible. And even internal to a framework in which both are possible, there might be arguments against the proposed analyses. But the relevant argumentation in Jackendoff (1971), Horn (1978, 1989), Gajewski (2007) and Homer (2010) doesn't begin to address such issues. The type of facts they lean on and which we have gone over could only bear on the general viability of a syntactic view of Classical NR if, minimally, they led to arguments that the kind of syntactic analyses sketched in (19) and principles like (9) are untenable. Such arguments are though of course not found in the works just cited and we strongly suspect that nothing like what would be needed has ever been presented anywhere.

So despite having apparently been taken to be decisive, the Composed Quantifier Argument has in fact so far never been shown to even bear on the issue of whether or not Classical NR is a syntactic phenomenon.

Chapter 5 Classical NEG Raising and *Never*-Raising

In this chapter we focus on a phenomenon referred to as *Never-raising*. We highlight problems in a potential nonsyntactic account of *Never*-raising akin to the nonsyntactic account that has been given of Classical NR, and hence conclude that the syntactic approach sketched in this work receives some support.

The earliest recognition of *Never*-raising we are aware of is found in the following remark:

(1) Fillmore (1963: 220)

> "Transposition of NOT(EVER) to Main Verb (Partly Obligatory)
> Under certain conditions (e.g. after verbs like WANT or THINK which are themselves not negated) a NOT in the embedded sentence may be moved in front of the main verb. If NOT has been shifted, then an EVER in the embedded sentence may also be moved forward."

Fillmore cited the following example of *Never*-raising:

(2) I never expect you to do that again.

The point was that in such examples, the main clause *never* can be understood to modify only the complement clause.

A subsequent description of *Never*-raising is found in (3):

(3) Horn (1972b: 125-126).

> "It will be recalled that *hope*, although in the class of intention verbs, does not permit NEG-raising. But consider the following examples:
>
> (20) a. I don't hope to see a brown cow.
> a'. never

b. I hope to not see a brown cow.
b'. never
c. I never hope that I see a brown cow.
d. I never want to see a brown cow.
wish
?care

While (20a) shares no readings with (20b)—i.e. its negation must originate in the upper sentence—(20a') does have a reading synonymous with, and presumably derived from, (20b'). (20a') on this reading expresses a hope, rather than the absence of a hope, just as e.g. (1b) and (19c) express wishes rather than non-wishes. There is then, alongside a NEG-raising, an optional rule of *never*-raising, … *Never*-raising seems to be restricted, unlike NEG-raising, to cases where the lower sentence manifest a *for-to* complementizer (hence the absence of a lower sentence reading for *never* in (20c))."

We agree with Horn (1972) that *Never*-raising represents a syntactic raising phenomenon and, moreover, we believe that fact strengthens the case that Classical NR does as well.

Here are a few more examples involving main predicates distinct from those Horn cited:

(4) a. You seem to never be happy nowadays.
b. You never seem to be happy nowadays.

(5) a. Kate Middleton is likely to never appear on Oprah for money.
b. Kate Middleton *is never likely to* appear on Oprah for money
(www.huffingtonpost.com/social/jeanrenoir/sarah-ferguson-royal-wedding-oprah_n_860224_87789465.html)

(6) a. I expect to never see Minnesota again.
b. I never expect to see Minnesota again.

(7) Although *he is never supposed to* use his magic…
(www.bookrags.com/notes/hp/TOP4.html)

Besides the paraphrase relations between putative *Never*-raising cases and otherwise parallel clauses in which the *never* is in the complement, there is evidence for the syntactic character of the phenomenon from adverbial modification:

(8) a. I never watch foreign movies.
b. Sometimes, I never watch foreign movies.
c. I never want you to leave.
d. Sometimes, I never want you to leave.
e. Sometimes, I want you never to leave.

Clearly, (8b) is semantically ill-formed in a way that (8d) is not. Modification of a clause C by *sometimes* yields a contradiction if C expresses a negative universal quantifying over time. But example (8d) can express the perfectly coherent claim that sometimes the speaker has the wish that the addressee never leave.

A stronger argument for the syntactic character of *Never*-raising is that it obeys island constraints, just like Classical NR. The *never* variants of sentences from section 2.2 on wh-islands make the point:

(9) a. I plan never to return
b. I never plan to return

(10) a. I plan what to never eat on a long trip
b. I never plan what to eat on a long trip.

Examples (10a,b) have sharply different interpretations. The former involves planning about

what people should never eat on a long trip, while the latter merely affirms the absence of planning with regards to trip food consumption. So (10a,b) lack the kind of semantic equivalence characteristic of *Never*-raising cases like (9a,b).

It is also possible to show that *Never*-raising obeys the Complex Noun Phrase Constraint.

(11) a. I wish to never see her again.
b. I never wish to see her again.

(12) a. I have a wish to never see her again.
b. I never have a wish to see her again.

Here, while (11a) has a reading equivalent to (11b), not so with (12a, b). So the data in (11)-(12) show that the semantic equivalences characteristic of *Never*-raising are not found in cases where the raised adverbial would have to exit a Complex NP Island.

Lastly, we observe that the conclusion that cases like (10b) and (12b) do not involve *Never*-raising is supported by the distribution of strict NPIs, as in:

(13) a. You never (*have a) wish to help a living soul.
b. I never plan (*when) to do jackshit$_A$ on a long trip.

On the syntactic view elaborated in this work, the cases in (9b) and (11b) simply result from the raising of *never* from the embedded to the matrix clause. This raising can be formulated informally as follows:

(14) *Never*-raising
For a member V of a specific class of verbs with nonfinite complements, *never* optionally raises from the clausal complement of V into the next highest clause.[47]

Rule (14) is, evidently, nonspecific about the exact locus in the clause in which the raised adverbial ends up. As far as we can tell, the relevant position is that where *never* occurs when it is not raised from an embedded clause.

Although (14) only mentions *never*, it appears that the little studied, reduplicated version of *never/ever* also undergoes the relevant raising.

(15) a. Harriet wants to never (never) (ever) see you again.
b. Harriet never (never) (ever) wants to see you again.

We will not attempt to extend (14) to account for this case.

What now is the relation between *Never*-raising and the issue of the status of Classic NR? That there is a relation between the phenomena is shown first by the fact that cases like (4b)-(7b)

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[47] Although *Never*-raising appears not to be possible out of finite complements (see (ib)), we find the cases in (ic) and (ii) to be fine.

(i) a. I think I will never be happy again.
b. I never think I will be happy again. (not equivalent to (a))
c. I don't ever think I will be happy again. (equivalent to (a)).

(ii) a. I don't ever think I've seen rain come down this hard.
(twitter.com/KeishaNicole/status/72076919805444096)
b. I don't ever think that I laughed so much while reading a book.
(www.myspace.com/manamina22)

These appear to involve the raising of both NEG and *ever*. One might interpret such cases as involving *Never*-Raising with obligatory further raising of the NEG out of the adverb. But space precludes pursuing the issues such examples raise.

manifest main clause negations whose scope is understood to be in the complement clause, arguably the defining property of Classical NR. We have indicated how a syntactic approach to *Never*-raising already proposed by Fillmore and Horn handles this fact unproblematically.

But how do semantic views of Classical NR like that described in section 1 fare? Simply, we see no way such an approach can account for the facts. Assume that *never* means something like 'at no point in time' and further that the Excluded Middle property holds for *expect*. Then the inferences from (16a) in (16b, c, d) are justified:

(16) a. I never hope to see a brown cow.
b. At no point in time do I hope to see a brown cow.
(from the meaning of *never* equivalent to 'at no point in time')
c. At every point of time, I do not hope to see a brown cow.
(from the meaning of *no point in time* and the equivalence
[no x (P(x)) = every x (not(P(x)))])
d. At every point of time, I hope to not see a brown cow.
(from the Excluded Middle property)
e. I hope to never see a brown cow.

The problem though is the hypothetical step from (16d) to (16e), which nothing sanctions. Perhaps, some additional implicature or presupposition can be added to make this inference go through, but we know of no development of such a view.

In conclusion, although we have not studied *Never*-raising extensively, it has been shown that there are parallelisms between *Never*-raising and Classical NR. The further speculation that the two are different instances of a single phenomenon is plausible. Furthermore, as we have argued, it is unclear that *Never*-raising can be stated in nonsyntactic terms. If it is true that *Never-r*aising and Classical NR are two instances of a single phenomenon, then Classical NR must on these further grounds be analyzed syntactically as well.

Chapter 6 Conclusion

This study has maintained several points vis a vis the issue of whether Classical NR is a syntactic raising phenomenon or not. First, we argued that clear aspects of Classical NR, specifically island sensitivity and its relation to Horn clauses, have been largely ignored by recent advocates of nonsyntactic views but nonetheless, appear to represent serious and perhaps grave obstacles to the success of such approaches. Second, we argued that the Composed Quantifier argument, taken by advocates of nonsyntactic approaches to be an essentially insurmountable objection to syntactic views, has actually not been shown to have any relevant implications at all. Third, the scope of the explanatory power of the Excluded Middle Property with respect to the Classical NR phenomenon has been seriously exaggerated. Fourth, our brief survey of *Never-r*aising indicates that this phenomenon is also a serious problem for nonsyntactic views of Classical NR.

One can then draw the following minimal conclusions. A syntactic view of Classical NR is much *better* motivated, a nonsyntactic one much *less* well-motivated, than has been taken to be the case in recent semantic/pragmatic-oriented approaches to the problem. So claims that we earlier cited from (Horn, 1978: 179; 1989: 314-315), (Sailer, 2005), (Gajewski, 2007: 22) and (Homer 2010: 3-4) suggesting that syntactic approaches have been definitely shown to be wrong are unfounded. Given that many properties of Classical NR have yet to receive an account in any

terms, the weakest claim consistent with our results is that the relative merits of syntactic and nonsyntactic approaches arguably remain far from having yet been fully or objectively measured.

The conclusions of this study dovetail with those of Collins and Postal (2012). In their study of pronominal agreement, they note that many current semantic approaches to anaphora (e.g., those where the value of pronoun is set by a contextually determined assignment function) can be show to be wrong on syntactic grounds. While the conclusions of Collins and Postal (2012) do not deny the importance of formal semantic rules, they sharply constrain the role of semantics in accounting for anaphoric phenomena. Similarly, clear syntactic facts (e.g., those linked to islands) narrowly constrain the role of semantics in accounting for Classical NR phenomena. We have shown that rules of interpretation should be formulated such that the original complement clause position of negation can be the position determining its semantic role.

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