

Negative DPs, A-Movement, and Scope Diminishment*

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1 Introduction

A-chains, like the one in (1a), have been claimed to allow reconstruction of the indefinite DP into its clause of origin because of the possibility for the interpretation in (1c), in addition to (1b) (May 1977, 1985, Barss 1986, Hornstein 1995, Fox 1995, Romero 1997, Johnson and Tomioka 1997, von Stechow and Iatridou 2002, Sauerland & Elbourne 2002, Sportiche 2005).¹

- (1) a. A Canadian₁ is likely t₁ to win.
b. There is a Canadian who is likely to win.
c. It is likely that some Canadian or other wins.

Reconstruction in A-chains, however, has also been disputed, because the phenomenon does not seem to extend to all scopal elements alike. One case in point is negative quantifiers (henceforth, NegDPs). Lasnik (1999) observes that NegDP subjects in derived positions cannot be interpreted in the lower clause, as in (c), and have only the “high” readings in (b).

- (2) a. No one₁ is certain t₁ to solve the problem.
b. No x, x is certain to solve the problem
c. *It is certain that no one will solve the problem.

We call this *Lasnik's empirical claim*. Lasnik assumes that the mechanism which would produce scope reversal with NegDPs is A-chain reconstruction, and therefore, he takes the paradigm in (2) to show that subject NegDPs do not undergo reconstruction in A-chains. This is what we will call *Lasnik's narrow theoretical claim*. From cases such as these and others, Lasnik (1999) concludes that there is no reconstruction in A-chains in general (*Lasnik's broad theoretical claim*). Lasnik 1999 takes the position of Chomsky 1995 and May 1985 that when scope reversal is observed in A-chains, as it is in (1), it is due to Quantifier Lowering, a process distinct from the one which delivers reconstruction in wh-movement chains.

We disagree with *Lasnik's broad theoretical claim* (that there is no A-reconstruction in general) and refer the reader to the aforementioned literature for cases where reconstruction in A-chains is attested. We also disagree with Lasnik's empirical claim that there are no scope reversals involving NegDPs and raising predicates. We show that with a well-defined set of predicates, NegDP may be interpreted below the scopal element (ScE) that it linearly precedes. These include a subset of deontic modals and a subset of raising predicates. As we show, there are deontic modals and raising predicates which independently scope above sentential negation. These predicates also scope above the NegDP which linearly precedes them, giving rise to scope reversal: the overt order is NegDP ScE, yet the interpretation is ScE>NegDP. However, even though scope reversal with NegDPs is more pervasive than previously considered, we agree with Lasnik's narrow theoretical claim and argue that these cases of scope reversal do not involve A-chain reconstruction. These points are summarized below:

Lasnik 1999		This paper
empirical claim	NegDPs never scope under the modal they are the subject of	we disagree
narrow theoretical claim	subject NegDPs do not reconstruct in A-chains	we agree
broad theoretical claim	there is no reconstruction in A-chains in general	we disagree

Table 1

In addition, we show that while the entire NegDP never undergoes A-reconstruction, the indefinite part may, recalling the phenomenon of Neg-Split in German and Dutch, in which negation scopes above some scopal element, and the indefinite scopes below it (Jacobs 1980, Ladusaw 1992, Rullman 1995, Kratzer 1995, Geurts 1996, De Swart 2000, Potts 2002, Zeijlstra & Penka 2005, Penka 2007, Zeijlstra 2007). Here too we observe that the scope position of the negative ingredient within NegDP is identical to the scope position of sentential negation. To the extent that this is correct, and the scope position of NegDP is determined by sentential negation, we can offer an explanation of Lasnik's findings which is consistent with the general availability of A-reconstruction: NegDP does not undergo total reconstruction because the scope of the negative ingredient is determined by sentential negation and therefore cannot

reconstruct. With this understanding in place, we show that NegDPs provide new evidence in favor of reconstruction in A-chains. While the entire NegDP cannot reconstruct, the indefinite part does.

The paper is organized as follows. Section 2 introduces scope reversal of NegDP with deontic modals and raising predicates and argues that the scope position of NegDP is identical to the scope position of sentential negation with respect to deontic modals and raising predicates. We also argue that these cases of scope reversal are not to be attributed to A-chain reconstruction. For raising predicates we argue, more specifically, that the relevant class of predicates in which scope reversal is observed are Neg-Raising predicates, and the effect of scope reversal is an inference from a presupposition associated with Neg-Raising predicates. Section 3 turns to contexts of Neg-Split in English and suggests that some reconstruction is observed even with NegDPs. Section 4 examines the claims made in sections 2 and 3 in the context of object NegDPs, and shows that objects basically pattern like subject NegDPs when it comes to the scope position of negation. Section 5 considers a number of potential counterexamples, in the domain of both subjects and objects, and suggests ways in which these cases may be understood without compromising the general validity of the proposed generalization. Section 6 considers the implications of our main points for the syntactic analysis of reconstruction effects.

2 The Scope of Subject NegDP

We begin by demonstrating the validity of Generalization A.

(3) Generalization A:

The scope of a subject NegDP with respect to scopal predicates such as modals, raising, and ECM predicates reflects the relative scope of these predicates with respect to the marker expressing sentential negation.

- a. When these predicates scope above negation, they will also scope above a subject NegDP.
- b. When they scope under sentential negation, they will scope under a subject NegDP.

2.1 Subject NegDP and Deontic Modals

In English, the relative scope of deontic modals and sentential negation varies with the choice of modal (see, among others, Cormack and Smith 2002, Butler 2003, von Stechow and Iatridou 2007).² As shown in (4-5) for deontic modals, some modals unambiguously scope below negation (from now on “Neg>Mod modals”), while others unambiguously scope above negation (from now on “Mod>Neg modals”).³

Neg > Modal modals	Modal > Neg modals
have to	must
need to	should
can	ought to
may (deontic)	

Table 2

- (4) a. John doesn't have to / need to leave. Neg>Modal
- b. He cannot / may not go to this party.

- (5) a. John must not go to this party. Modal>Neg
 b. John should not go to this party.
 c. John ought not to go to this party.

The relative scope of the modal and negation perfectly matches the relative scope of the modal and a subject NegDP: a Neg>Mod modal also scopes below a subject NegDP, in (6), while a Mod>Neg modal, also scopes above a subject NegDP, in (7).

Subject NegDP > Modal	Modal > Subject NegDP
have to	must
need to	should
can	ought to
may (deontic)	

Table 3

Interpretation: Subject NegDP > Modal

- (6) a. No student has to / needs to leave. (= All are allowed to stay)
 Not: It is required that no student leaves
 b. No student can / may leave. (= All are required to stay)
 Not: It is permitted that no student leaves

Interpretation: Modal > Subject NegDP⁴

- (7) a. No student should / ought to leave. (= All should / ought to stay)
 Not: All can stay
 b. No student must leave. (= All must stay)
 Not: All are allowed to stay

incompatible with *Lasnik's empirical claim*, they are still compatible with his *narrow theoretical claim*.

2.2 Subject NegDP and Raising Predicates

In this section we show that Generalization A also holds of the relationship between subject NegDPs and Raising Predicates. The predicate *certain* scopes under sentential negation, in (9). Given Generalization A, we correctly predict that it should also scope under a subject NegDP.

- (9) a. It is not certain that he will win.
Cannot mean: It is certain that he will lose
- b. No one is certain to win. NegDP > certain
Cannot mean: It is certain that nobody will win

Similarly, some passive ECM verbs scope below negation. When they do, they also scope below NegDP, in (10-11) (example (11a) is from Lasnik 1999).

- (10) a. This theory was not proven / shown / demonstrated to be false. Neg>V
Cannot mean: This theory was shown to be true
- b. The butler was not proven / shown / demonstrated to be guilty. Neg>V
Cannot mean: The butler was shown to be innocent
- (11) a. No Mersenne number was proven to be prime. Neg>V
Cannot mean: It was proven that no Mersenne number is prime
- b. No theory was shown / demonstrated to be false. Neg>V
Cannot mean: It was shown / demonstrated that no theory is false

The predicates *appear* and *seem*, on the other hand, do permit scope reversal. NegDP in (12) can be interpreted below the matrix predicate. Among the passivized ECM verbs, *is believed* also appears to allow scope reversal for NegDP:

- (12) a. No doctor appears to be present. V > NegDP
'It appears that no doctor is present.'
- b. No doctor seems to be present. V > NegDP
'It seems that no doctor is present.'
- c. No student is believed to have witnessed that crime. V > NegDP
'It is believed that no student witnessed that crime.'

The difference between *certain* and *appear / seem* or between *was proven / was shown* and *was believed*, has to do, again, with the interpretive position of sentential negation. *Appear, seem, and was believed* are neg-raising predicates. As neg-raising predicates, they optionally, though preferably, allow matrix negation to be interpreted within the embedded clause (Horn 1989, Gajewski 2005), in (13). *Certain, was proven* or *was shown* do not (*cf.* (9-10)).

- (13) a. It does not seem that he will win.
Can mean: It seems that he will not win = It seems that he will lose
- b. It does not appear that he will win.
Can mean: It appears that he will not win = It appears that he will lose
- c. I do not believe him to be a fool.
Can mean: I believe him to not be a fool
- d. He is not believed to be home.

Can mean: He is believed to not be home

The scoping of NegDP below the predicate in (12) correlates with the general interpretive position of negation: NegDP interacts with a Raising predicate exactly the way sentential negation does. Raising predicates, therefore, further support Generalization A.⁶

Once again, we see that scope reversal of NegDP is possible, contrary to *Lasnik's empirical claim*. Once again, however, the scope reversal effect does not appear to be due to actual syntactic reconstruction of the NegDP. For one thing, if the interpretations in (12) were due to A-reconstruction, it would be difficult to see why A-reconstruction is blocked in (11). Instead, we will argue, following Gajewski 2005, 2007, that the interpretation in (12) arises as an inference due to a presupposition associated with neg-raising predicates.

The term *neg-raising* refers to the situation in which a negation realized in the matrix clause is interpreted as if it were in the lower clause. The phenomenon gets its name from early accounts, which derived this effect syntactically: the negation in the examples in (13) starts out in the lower clause, where it is interpreted, and subsequently raises to the matrix clause (Fillmore 1963, Ross 1973, Prince 1976). Gajewski (2005, 2007) argues, in the spirit of Bartsch 1973 and Horn 1978, 1989, that a syntactic analysis is insufficient, and develops a presuppositional account instead. Below we develop a new argument in favor of the presuppositional treatment of neg-raising based on the behavior of NegDPs.

According to Gajewski (2005, 2007), neg-raising predicates are associated with an Excluded Middle (EM) presupposition. The content of the EM presupposition is that the complement of these predicates must be either true or not true. In other words, the presupposition rules out agnosticism regarding the truth of the embedded proposition. Compare for example the neg-raising predicate *believe* with the non-neg-raising predicates *show*, *demonstrate*, or *prove*. *Believe* in (14a) is associated with the presupposition in (15). That presupposition, combined with the assertion (14a), generates the inference in (16).

- (14) a. John doesn't believe that Mary is guilty.
b. John didn't show / prove / demonstrate that Mary is guilty.

(15) John believes that [[Mary is guilty] or [Mary is innocent]]

(16) John believes that Mary is innocent.

No such presupposition, however, is associated with *show*, *demonstrate*, or *prove*, since it is never the case that one must show or prove that one of *p* or *not p* holds. Since there is no EM presupposition like (17a) associated with (14b), there is also no inference of the sort in (17b).

- (17) a. John showed / proved that [[Mary is guilty] or [Mary is innocent]]
b. John showed / proved / demonstrated that Mary is innocent

The presuppositional account can be extended to NegDPs in matrix clauses. (18), which contains a neg-raising predicate, is represented as in (19a) with NegDP in the matrix clause (i.e. without any A-reconstruction). Following Heim 1983, Gajewski 2005, 2007, and Chemla 2009 (among others), we assume that presupposition triggers in the scope of

negative quantifiers are universally interpreted. This means that (18/19a) are associated with the presupposition in (19b).

(18) No butler was believed by John to be guilty.

- (19) a. There is no x , x a butler, such that x is believed by John to be guilty
b. For every x , x a butler, x is either believed to be guilty by John or he is believed to be not guilty by John

Note now that (19b) combined with (19a) yields the inference expressed in (20a), and equivalently in (20b):

- (20) a. Every butler is believed by John to be not guilty
b. It is believed by John that no butler is guilty

(20b) expresses scope reversal of NegDP and what appears to be the result of A-reconstruction. On the presuppositional account, however, this reading is an inference. Crucially, there is no syntactic representation of (18) which has NegDP in the embedded clause at LF.⁷ If so, A-reconstruction is not necessary for deriving the inverse reading. Below we argue that a derivation with A-reconstruction is actually excluded, but before that we consider the advantages of the presuppositional account. First, it fits more naturally with the kind of lexical-semantic variation we find in this domain.

Presuppositions are known to be triggered by particular lexical items, and in this case the EM presupposition reflects part of the meaning of the predicates it is associated with. It is difficult to see why a general syntactic operation such as A-reconstruction would be sensitive to this particular lexical property, which arguably has no other syntactic manifestations. The second advantage is related to the nature of the optionality observed

in this domain. In standard cases of A-reconstruction, the choice between the two interpretations is completely free. While it is true that with neg-raising predicates both interpretations are available, the literature implies that there is a preferred reading, and that the preferred reading is the inverse reading discussed above. The "high" reading for negation and NegDP is available when agnosticism is permitted and no EM presupposition is involved. A syntactic account would be hard-pressed to explain why an asymmetry should exist and why it exists in this particular direction. If anything, the reading which reflects surface order would be expected to be favored over the inverse reading (Thanks to Irene Heim (p.c.) for pointing this out).⁸

We now turn to show that A-reconstruction of NegDP is excluded in Neg-Raising contexts. We do this by imposing additional binding requirements which keep the DP in its high surface position at LF (Fox 2000). In the following examples, an indefinite DP can only be interpreted with wide scope relative to the matrix predicate. This is due to the requirement on variable binding in (21a), and to the potential Principle C violation incurred by A-reconstruction in (21b). In (21c), narrow scope for the indefinite is possible since A-reconstruction would not incur any binding violation:

- (21) a. A butler₁ is believed by his₁ employer to be guilty.
b. A student of David's₁ is believed by him₁ to be guilty.
c. A student of his₁ is believed by David₁ to be in guilty.

Consider now the effect of these binding requirements on the interpretation of a sentence containing NegDP in subject position.

- (22) a. No butler₁ is believed by his₁ employer to be guilty.

- b. No butler of John's₁ is believed by him₁ to be guilty.
- c. No butler of his₁ is believed by John₁ to be guilty.

In (22a-b), just as in (20a-b), the subject scopes only in its surface position, above the matrix predicate. By this we mean that (22a-b) have only De Re readings, or in other words, that the beliefs are about individual butlers, and not about groups of butlers. (22a), for example, cannot mean that all employers believe that there is no guilty butler. This is consistent with the standard A-reconstruction account of binding-scope interactions. The issue for the presuppositional account, however, is whether, nevertheless, the negation in (22a-b) can be interpreted in the lower clause. If it can, this strongly suggests that A-reconstruction of NegDP cannot be involved, since if it were, it would violate the requirement on variable binding or Principle C. The readings in which negation scopes in the embedded clause are given in (23a-b), for (22a-b), respectively. They do seem to be available. Compare for example (22b), where A-reconstruction is precluded, and (22c), where it is allowed, with respect to the reading in (23b). (22b) can have this interpretation just as readily as (22c).

- (23) a. Every employer believes that his butler is not guilty
Every employer believes that his butler is innocent
- b. John believes that all his butlers are not guilty
John believes that all his butlers are innocent

The distribution of strong negative polarity items (strong NPI's) allows us to sharpen the intuition about the meanings of the sentences in (22). Lakoff (1969) notes that certain strong NPI's, such as punctual *until*, and *in* + indefinite time expressions are licensed by

negation across an embedding predicate only when that predicate is a neg-raising predicate, as shown by the contrast between *believe* in (24a) and *claim* in (24b). They are good diagnostics for neg-raising because the requirement they impose is stronger than that of prototypical NPI's such as *ever*, which do not require the embedding predicate to be a neg-raiser, in (24c) and (24d) (from Gajewski 2005, 2007. Example (24) is based on Gajewski 2007:(14)-(17)).

- (24) a. Mary doesn't believe that Bill has left the country in years.
b. *Mary didn't claim that Bill had left the country in years.
c. Bill didn't think that Mary had ever left the country.
d. Bill didn't claim that Mary had ever left the country.

Therefore, if the negation in (22) can be interpreted in the lower clause, as illustrated in the readings in (23), the sentences in (22) should be good with strong NPI's. They are:⁹

- (25) a. No butler₁ is believed by his₁ employer to have been guilty in years.
b. No butler of Bill's₁ is believed by him₁ to have been guilty in years.

To recapitulate, the additional binding requirements imposed in (25) force the DP to be represented only in its surface matrix position at LF. Nevertheless, negation can be interpreted in the embedded clause as suggested by the acceptability of a strong NPI in the embedded clause. This strongly suggests that the lowered reading for negation in neg-raising contexts cannot be due to a syntactic process. In other words, there is no syntactic reconstruction of NegDP in neg-raising contexts. So again, while Lasnik's empirical claim turns out to be false, his *narrow theoretical claim* stands.

2.4 Interim Conclusion

We have shown that a subject NegDP can be interpreted below the scopal element it is the subject of. This possibility tracks mechanisms that are unrelated to scope diminishment in A-chains and has no direct bearing on A-reconstruction of NegDPs.

This means that even though *Lasnik's empirical claim* is incorrect, his *narrow theoretical claim* seems correct.

3 Negative Split in English

We have shown that the subject NegDP cannot undergo A-reconstruction *in toto*. The literature on neg-split, however, suggests that a NegDP may be viewed as containing two separate semantic and syntactic ingredients, negation and a (narrow scope) indefinite. Here we show that while the negative ingredient in NegDP has its interpretive position fixed as established in section 2, the indefinite part may undergo scope diminishment. Based on scope-trapping effects of the sort introduced in (21-22) we argue that scope diminishment of the indefinite is produced by A-reconstruction.

Neg-Split has been primarily studied in Dutch and German, and refers to the situation in which the two ingredients of a NegDP may scope somewhat independently of each other (see Klima 1964, Jacobs 1980, Ladusaw 1992, Rullman 1995, Kratzer 1995, Geurts 1996, De Swart 2000, Potts 2000, 2002, Zeijlstra & Penka 2005, Penka 2007, Zeijlstra 2007; for Neg-split in English, see Klima 1964, Ladusaw 1992, Larson, Den Dikken & Ludlow 1996, Potts 2000). In the following Dutch example, the split reading is the most salient (from Rullman 1995):

(26) Ze mogen geen eenhoorn zoeken.

They are allowed no unicorn seek

'They are allowed to seek no unicorn.'

a. There is no unicorn such that they are allowed to seek it (De Re)

b. What they are allowed to do is seek no unicorn (De Dicto)

c. They are not allowed to seek a unicorn (Split)

When we look at subject NegDPs, in contrast to the much-discussed object cases like (26), and we observe split readings, an obvious possibility is that the indefinite has undergone some form of scope diminishment, as schematized in (27).

(27) Overt order: NegDP Modal V Object

Interpretation: Neg Modal \exists V Object

It should be clear that Neg-split with scope diminishment of the indefinite arises only for subject NegDPs of Neg>Mod modals. That is, the negation part and the indefinite part can be split across a modal or raising predicate only when negation independently scopes above the predicate. The negative part of a subject NegDP of a Mod>Neg modal scopes under the modal, on the same side of the modal as the indefinite part. Our discussion of Neg-Split focuses therefore on predicates which scope below sentential negation.

3.1 Scope Diminishment of the Indefinite under Neg>Mod Modals

Consider now the sentences in (28), both of which contain Neg>Mod modals, and the interpretations in (29) and (30). That is, (28a) can be interpreted as in (29a) and (30a); (28b) can be interpreted as in (29b) and (30b).

(28) a. No student has to / needs to leave.

- b. No student may / can leave.

Neg > \exists > Modal: De Re interpretations (No split):

- (29) a. There is no student x such that x has to / needs to leave
- b. There is no student x that x is allowed to leave

Neg > Modal > \exists : Split interpretations:

- (30) a. It is not required that a student leaves
- b. It is not allowed that a student leaves

In order to establish that the sentences in (28) do have the split readings in (30) we need to show that there are contexts in which only the split reading is true. To individuate the split reading, we exclude De Re in two kinds of contexts. Assuming that De Re readings presuppose the existence of entities satisfying the descriptive content of NegDP, De Re is excluded in (31) via a contradiction in content, since books which have not yet been written at the time of the utterance could not be presupposed to exist (examples modeled after Fox (2000)). To the extent that (31) is grammatical, it only has the split reading.

- (31) No book about Nixon has to / needs to be written next year.

Split: It isn't required that a book about Nixon is written next year

Our claim about the split readings in (30) is further confirmed in existential constructions, another context which individuates split readings (modeled after Penka 2007). In existential constructions, the indefinite component is necessarily interpreted below the matrix predicate, while the negation component is interpreted below the predicate or above it, depending on choice of modal. Consider a scenario in which a

nurse is allowed to administer a medication by herself, without the presence of a doctor. The lack of a requirement for the presence of a doctor can be conveyed with a neg-split reading, and so predicted to be possible with Neg>Mod *has to / needs to*, but not with Mod>Neg *must / ought to / should*.

- (32) a. There has to be no doctor present for the nurses to administer the medicine.

Neg-Split: It isn't required that a doctor is present

- b. There should / ought to / must be no doctor present for the nurses to administer the medicine.

No Neg-Split occurs

The above context differs from one in which there is a requirement for a doctor to be absent. In this case the desired reading has both negation and the indefinite scoping below the modal. This is correctly predicted to be possible for Mod.>Neg modals *must / ought to / should*:

- (33) a. There must be no doctor present during the interrogations.

'It is required that no doctors are present during the interrogations.'

- b. There should / ought to be no doctor present during the interrogations.

'It is recommended that no doctors are present during the interrogations.'

3.2 Scope Diminishment of the Indefinite under Passivized ECM and Raising Predicates

The prediction from the previous discussion is that neg-split readings should be possible with subject NegDPs of the predicates *was proven, shown, demonstrated, expected, certain* (and *likely*; see fn 6), as these predicates scope under sentential negation.¹⁰ We

have already shown that in sentences such as (34), the entire NegDP does not undergo total reconstruction. However, split readings with indefinite scope diminishment are allowed.

- (34) a. No Mersenne number was proven to be prime.
b. No butler was shown / demonstrated / proven to be guilty.

De Re: Neg > \exists > ECM Verb

- (35) There is no specific butler who was shown / proven / demonstrated to be guilty

Split: Neg > ECM Verb > \exists

- (36) It was not shown / proven / demonstrated that there is a guilty butler

To see that the readings are distinct we first isolate the De Re reading by creating a context in which the De Re reading would be true and the split reading would be false.

- (37) Context: We know that the guilty party was a butler. However, there are 4 butlers in the manor and we do not know which of the four the culprit is.

In this context, (34b) is indeed fine, as seen in (38).

- (38) No butler was proven / demonstrated / shown to be guilty but the murderer is definitely a butler.

To isolate the Split reading we exclude De Re via a contradiction in content. Here we turn to predicates which future-shift their complements, such as *is expected* and *likely*, since these make it possible to exclude De Re readings when the embedded clause contains a verb of creation.¹¹ If at the time of the utterance the cheetahs referred to in (39) haven't yet been born, they couldn't be presupposed to exist, and De Re is excluded.

To the extent that the sentences in (39) make any sense, it could only be on their Split readings (von Stechow and Iatridou 2003):

(39) No cheetah is expected / likely to be born in this zoo next year.

Split: It isn't expected / likely that a cheetah will be born in this zoo next year

Having shown that scope diminishment of the indefinite component in NegDP is in principle available, the question we now turn to is whether this form of scope diminishment is delivered by A-reconstruction.¹² The answer seems to be positive. We have shown above, in the context of neg-raising predicates (22-25), that when additional binding requirements are imposed, the entire DP cannot reconstruct (and negation is nevertheless interpretable in the embedded clause). This already suggests that when we observe scope diminishment of the indefinite part, it is produced by A-reconstruction, since additional binding requirements block the operation. To see this more directly with neg-split predicates, consider the contrast between (40a) and (40b). To force the neg-split reading, we exclude De Re via a contradiction in content: books which have not yet been written cannot be presupposed to exist. In (40a) A-reconstruction encounters no binding violation, and neg-split is possible. In (40b), where A-reconstruction would be violated, Principle C, neg-split is degraded. This suggests that scope diminishment of the indefinite in Neg-Split is produced by A-reconstruction of the indefinite.

(40) a. No new book about him₁ is expected by Nixon₁ to be written next year.

'Nixon doesn't expect any new book about him to be written next year.'

b. #No new book about Nixon₁ is expected by him₁ to be written next year.

'Nixon doesn't expect any new book about him to be written next year.'

3.3 Interim Conclusion

We started out with Generalization A, according to which the scope of Subject NegDPs with respect to modal and raising predicates is identical to the relative scope of sentential negation. This yielded cases of apparent scope reversals, contra *Lasnik's empirical claim*. These scope reversals do not falsify *Lasnik's narrow theoretical claim* because they are not produced by A-reconstruction. We have also shown that neg-split in English is quite pervasive, and that the indefinite part of a subject NegDP may scope below a raising predicate or a Neg>Mod modal. These cases of scope diminishment do appear to attest to A-reconstruction. If so, then A-reconstruction is available even for NegDPs. *Lasnik's narrow claim*, then, reduces to the observation that the negative part of a subject NegDP does not reconstruct. But why not?

If we interpret the pattern behind Generalization A, a possible answer comes to mind. Generalization A tells us that the negative component of a subject NegDP behaves with respect to scopal predicates just as sentential negation does. If the Negative part of NegDPs is, in some sense, sentential negation, it is almost trivial that Generalization A should hold.

The literature on neg-split contains a variety of proposals on how to derive this phenomenon. We can divide them into two main camps: I. NegDP is a negative quantifier, and the existence of neg-split readings follows from the semantics of NegDP (Geurts 1996, De Swart 2000). II. NegDP corresponds at LF to two independent constituents: a negation and an indefinite DP (Klima 1964, Jacobs 1980, Ladusaw 1992, Rullman 1995, Potts 2002, Zeijlstra & Penka 2005, Penka 2007, Zeijlstra 2007). Setting

aside differences and details of implementation within each camp, we will group them together as the "semantic camp" and the "decomposition camp" and focus on differences regarding how NegDP scope is derived.¹³ For the semantic camp, NegDP is a generalized quantifier, and as such it is interpreted like any other non-negative quantifier. In particular, De Re readings and Split readings are equally delivered by QR. The leading intuition within the decomposition camp, on the other hand, is that NegDP is an indefinite of sorts, and its scope is determined by a separate (sentential) negation. To the extent that the scope of sentential negation and the scope delivered by QR are distinct, the two approaches fare differently.

It is clear that Generalization A and its satellite scope diminishment facts find a natural home in the decomposition camp, where NegDP is characterized as an indefinite which scopes in the position of sentential negation. Could these patterns be captured within the semantic camp? Possibly, though some additional assumptions would be necessary. The semantic camp would have to explain Generalization A by appealing to something other than the presence of sentential negation contained within NegDPs. It could be stated, for example, that modals scope in particular ways with respect to anything that contains negation in some abstract form. To briefly sketch how this might work, we will assume the approach to QR in May 1977, 1985, and in particular that (a) regardless of the kind of Generalized Quantifier involved, QR always targets the same position, and (b) that this position is higher than the surface position of the subject. Since De Re readings are derived by QR, QR would have to be excluded from applying with Mod>Neg modals, since De Re of NegDPs is not readily available with these predicates.

This leaves us with QR of NegDP for the class of Neg>Mod modals. But here QR seems superfluous, since it would be placing NegDP in a position which is indistinguishable from the scope position of sentential negation. This scope pattern is derived directly on the decomposition approach since NegDP contains sentential negation. Therefore, the evidence for QR as responsible for De Re with NegDP is relatively weak, if QR operates as in May 1977, 1985: with Mod>Neg predicates it would need to be blocked and with Neg>Mod predicates it is not necessary. To capture Generalization A more directly, the semantic camp might adopt an alternative view of QR, in which there exist multiple landing sites for QR corresponding to different kinds of Generalized Quantifiers (Beghelli and Stowell 1997, Szabolcsi 1997). On this view of QR, NegDP might be interpreted within the same projection that sentential negation is interpreted in, and QR would be bringing NegDP to the scope position of sentential negation directly. Even though NegDP itself is not taken to consist of two independent ingredients, the LF for NegDP on this conception of QR is virtually indistinguishable from the LF on a decompositional approach (especially Zeijlstra 2004, Zeijlstra and Penka 2005, and Penka 2007), since for these approaches too, NegDP qua indefinite scopes in the position of a covert negative operator. As far as the LF of the raised reading is concerned, we consider this version of the semantic camp to be equivalent to decomposition in the sense of Zeijlstra 2004, Zeijlstra and Penka 2005, and Penka 2007. Either way, then, the negation within NegDP cannot reconstruct because it is licensed locally, by sentential negation within its clause. We return in more detail to an explanation of the failure of full

NegDP reconstruction and the possibility for Neg-Split in section 6, after we discuss the scope pattern of object NegDPs.

4 Object NegDPs

Up until now we have focused on NegDPs in subject position, and on subject-to-subject raising of NegDPs. In this section and in section 5.2 we show that several interesting questions also arise when NegDP is placed in object position. Before beginning, we should point out that several of the English speakers we have consulted do not accept NegDPs in object position at all. For these speakers the examples in (41) are all degraded and questions about the scopal interactions between NegDP and the modal are irrelevant.¹⁴ Our observations in this section and in section 5.2 are about those English speakers for whom (41) are in principle acceptable, as well as about speakers of German and Dutch, languages in which object NegDPs are straightforwardly acceptable.

- (41) a. He has to read no books about Nixon.
b. He has to do no homework tonight.
c. He must do no homework tonight.
d. He has to get no new toys for a while.
e. He must get no new toys for a while.

Restricting our attention to those speakers (of English, German, and Dutch) who do accept object NegDPs, the question we now address is whether there exists a Generalization B, in the spirit of Generalization A, which determines the scope of an object NegDP with respect to modals and Raising predicates in its clause.

(42) Generalization B:

The scope of an object NegDP with respect to scopal predicates such as modals, raising, and ECM predicates reflects the relative scope of these predicates with respect to the marker expressing sentential negation.

- a. When these predicates scope above negation, they will also scope above objectNegDP.
- b. When they scope below sentential negation, they will scope below object NegDPs.

Setting aside finer distinctions related to the scope of the indefinite component of NegDP (neg-split), we will show that Generalization B does hold.¹⁵ We discuss some complications which arise with object NegDPs in section 5.2, but setting them complications aside for now, the scope of the negative component of an object NegDP appears to match the scope of the negative component of a subject NegDP. Object NegDPs scope under a Mod>Neg modal like *must*, as in (43), while the negative component of an object NegDP with Neg>Mod modals can scope above the modal, as in (44).

Mod>Neg modals:

(43) You must do no homework tonight.

'You must go without homework.'

Cannot mean: It is not required that you do homework tonight

Cannot mean: No homework is such that you must do it

Neg>Mod modals:

(44) You have to / need to do no homework tonight.

'There is no homework that you are required to do.'

Can mean: It is not required that you do homework tonight

While in English the possibility for the interpretation (44) holds only for the subset of English speakers who accept NegDPs in object position, both (43) and (44) are completely acceptable in German and Dutch. Iatridou and Zeijlstra (2009) show that in Dutch and German, the modal that behaves like *have to* in being Neg>Mod, can have the negative part of the object NegDP scope over the modal. Alongside this modal, there is another modal expressing universal force which, similar to NPIs, necessarily scopes below negation. As expected, the NPI modal *brauchen* yields only Neg>Mod readings for object NegDPs.

(45) a. Er muss keine hausarbeiten (zu) machen. Neg>Mod (optionally)

he has.to no homework (to) do

'There is no homework that he has to do.'

b. Er braucht keine hausarbeiten (zu) machen Neg>Mod (obligatorily)

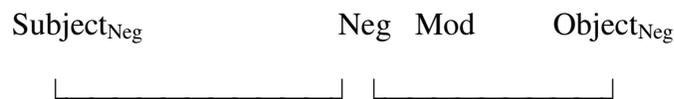
he NPI-modal no homework (to) do

'There is no homework that he has to do.'

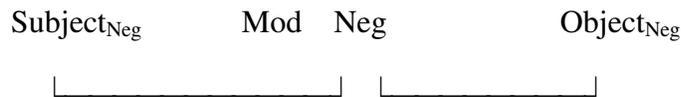
Up until now we have been characterizing the interpretive position of negation only relatively, relative to the interpretive position of the modal: Mod>Neg vs. Neg>Mod. The introduction of object NegDPs, and in particular the similarity in their scope behavior to subject NegDPs (per choice of modal) leads to the conclusion that the negative component in NegDP is interpreted in the same position within the clause,

regardless of whether it is a subject or object. With Neg>Mod modals this position is above the modal, and with Mod>Neg modals, it is below the modal. The diagrams in (46) and (47) illustrate Generalizations A and B graphically, now incorporating the scope behavior of object NegDPs. These representations are not to be confused with syntactic trees: the position of Neg in (46-47) refers to its scope position, not its syntactic position, and the lines, accordingly, indicate scope of NegDP, not movement.¹⁶

(46) Neg > Mod modals:



(47) Mod>Neg modals:



The observation that the negative ingredient in subject and object NegDPs is interpreted on the same side of the modal, the side of the modal in which sentential negation is interpreted, suggests that they are interpreted in the same position. This in turn suggests that clauses contain a scope position dedicated to the interpretation of negation, whether realized as sentential negation or within NegDP. In this respect, NegDPs are similar to Wh-phrases in that the negative ingredient, like the wh-ingredient within Wh-phrases, is interpreted in a particular position (whereas the residue may be interpreted in a lower position, as observed in neg-split). This is indeed the position taken by a variety of researchers (some of whom call this position “NegP”, see Zanuttini 1997 van Kemenade 1998, Haegeman 2002). For others, there are multiple positions in which negation can be

semantically interpreted (Schwartz and Bhatt 2006 and Penka 2007, among others).¹⁷ We remain agnostic as to how this scope is produced, other than to point out that it cannot involve A-reconstruction, as we already saw, and that locality considerations are involved, as we will shortly see. In what follows, we set aside a variety of questions raised by the implementation of NegDP scope, whether it is derived by movement, and if so movement of what, where to, or something completely different.

5 Potential Counterexamples and What We Can Learn from Them

There are a number of modal contexts which appear to not conform to Generalizations A and B. When the modal is a Mod>Neg modal, it is sometimes possible for a subject NegDP to scope over the modal, contra Generalization A. Similarly, when the modal is a Neg>Mod, an object NegDP may scope below the modal, contra to Generalization B. The table below illustrates the general picture. The terms *Subject_{Neg}* and *Object_{Neg}* stand for the negative component of a NegDP in subject and object position respectively. The grey cells represent the cases which are not covered by Generalization A and Generalization B.

Type of Modal	Interpretive possibilities
Mod>Neg	Mod > Subject _{Neg}
	Mod > Object _{Neg}
	Subject _{Neg} > Mod
Neg>Mod	Subject _{Neg} > Mod
	Object _{Neg} > Mod
	Mod > Object _{Neg}

Table 4

We address each of the grey cells in turn. We explain why the first grey cell may exist without compromising the validity of Generalization A. Regarding the second grey cell, we show that it is due to locality considerations which yield principled exceptions to Generalization B. We also examine a problematic case involving the modifier *particular*.

5.1 The first grey cell: Subject NegDPs

The first case we consider is that of a subject NegDP scoping over a Mod>Neg modal, contra Generalization A. This reading is brought out by stress on the modal:

- (48) a. A: Everybody must leave.
 b. B: Nobody **MUST** leave but they are encouraged to.

Stress on *must* in B's utterance, as well as the continuation, shows that *must* is contrasted with something. This suggests that the modal is in focus, and we propose, in the spirit of Jackendoff (1972), that the focus particle is negation. Negation in (48b) is within NegDP, as shown in (49).

- (49) NEG ∃ must

Following Jackendoff (1972), association by focus requires the focus particle to c-command its associate at S-structure. This configuration has to be maintained at LF, putting association with focus on the list of LF phenomena that have to meet their structural configuration already in the overt syntax. The requirement for c-command of the modal by negation at LF keeps the negation high, and as a result, the entire NegDP scopes above the modal. The structural requirement on focus overrides the usual behavior of negation and *must*, and it is possible, in Jackendoff's terms, that in the focus configuration (48b), negation doesn't negate the entire sentence, but focuses on a particular element, in this case the modal. Regardless of the ultimate analysis of negation in (48b), however, the special c-command requirement imposed by focus explains this deviation from Generalization A.

The claim that association with focus requires negation to c-command the associate makes a number of predictions regarding the interaction of negation, NegDP, and modals. First, we predict that parallel effects are not observed with a NegDP in object position. B's utterance in (50b) cannot be interpreted as if negation were focusing the modal, and a Neg>must interpretation does not arise.

- (50) a. A: He must read every article on the topic.
b. B: #He MUST read no article on the topic but he is encouraged to do so.

We also predict that sentential negation should not be able to focus the modal *must*, since it does not c-command it at s-structure. This is shown in (51b).

- (51) a. A: He must read 5 books.
b. B: #He MUST not read 5 books but he is encouraged to do so.

not must eat

'He does not have to eat.'

- c. Dhen prepri na figi. Mod > Neg Greek

not must leave

'He must not leave.'

- d. Dhen chriazete na figi. Neg > Mod

not need leave

'He does not need to leave.'

- (55) a. A: Debe leer cinco libros. Spanish

Must read five books

'He must read five books.'

- b. B: No DEBE leer cinco libros, pero lo incentivamos a que lo haga.

not must read five books, but he encouraged to that it do

'He doesn't HAVE TO read five books, but he is encouraged to do so'

- c. A: Prepi na dhiavasi pende vivlia. Greek

must read five books

'He must read five books.'

- d. B: dhen PREPI na dhiavasi pende vivlia ala tha itan kalo an to ekane.

not must read five books but FUT was good if it did

'He doesn't HAVE TO read five books, but it would be good if he did.'

The claim that the negative ingredient in NegDP can focus the modal also provides another argument in favor of the decomposition approach to neg split. It is

difficult to see how the semantic camp would derive the effect that the modal in focus has on the scope of NegDP.

5.2 The second grey cell: Object NegDPs

In section 4, we showed that object NegDPs follow Generalization B for all the Dutch and German speakers we consulted and for a subset of our English speakers. We now show that in addition to the scope pattern discussed in section 4, it is also possible for an object NegDP to scope under a Neg>Mod deontic modal. In fact, for several English speakers, this is the only reading that object NegDPs receive, including Neg>Mod modals.¹⁸ Consider the following sentence:

- (56) a. In order to see how others live, he has to / needs to get no new toys for a while.
- b. In order to see how others live, he must get no new toys for a while.

In the context given, the two types of modals (Neg>Mod and Mod>Neg) yield identical scopal interpretations, and both may be used to describe a situation in which there is an obligation to remain toy-less.¹⁹ Given Generalization A and Generalization B, this is surprising since the two classes of modals have yielded different scopal interpretations in the constructions we have discussed up until now. Combined with (44) above, where Neg>Mod was also available for the modals in (56a), we conclude that Neg>Mod modals with a NegDP in object position yield ambiguity.

The analysis which we propose to account for the Mod>Neg reading starts out from two related assumptions: (a) NegDPs are always interpreted in a given scopal position (see section 4), and (b) the low reading in (56a) is due to an additional scope

position for negation provided by the embedded infinitive (See also Larson, den Dikken and Ludlow 1996/7; See Penka 2007 for covert negation in many more positions).

Following Bhatt 1997 and Wurmbrand 1999, we assume that deontic modals are raising predicates, and that the embedded infinitive has at least enough functional structure to include its own position for negation. The difference between (44) with neg-split of the object NegDP, repeated in (57a), and (56a), where the entire NegDP is interpreted below the modal, repeated in (57b), corresponds to the two structures in (58).

(57) a. You have to do no homework tonight.

'It is not required that you do homework tonight.'

b. He has to / needs to get no new toys for a while.

'It is required that he gets no new toys for a while.'

(58) a. Subject_i NEG Modal [IP t_i verb Object_{NegDP}]

b. Subject_i Modal [IP t_i NEG t_i verb Object_{NegDP}]

With Neg>Mod modals such as *have to*, (58a-b) produce different readings because there are two NEG positions above the object NegDP in which (the negative component of) the object NegDP may be interpreted, one above the modal and one below it. If the negative component of the object NegDP is interpreted in NEG of (58a) the sentence is interpreted as in (57a). If it is interpreted in NEG of (58b), the sentence is interpreted as in (57b), yielding the grey cell for object NegDPs.²⁰ These two positions may also be available for Mod>Neg modals, but the choice between (58a-b) will have no effect on truth conditions since both are below the modal. In other words, the extra interpretive position for negation depends on the presence of an embedded clausal constituent.²¹ Since the

distribution of these positions is constrained by the distribution of embedded clauses, we do not over-generate non-existent readings such as De Re readings for subject NegDP with Neg>Mod modals.²²

We return now to Generalization B. If all we had were speakers of German and Dutch, and the subset of English speakers who interpret an object NegDP over a Neg>Mod modal, Generalization B would be completely straightforward. However, among those English speakers who permit an object NegDP to begin with, all speakers can, and some speakers must, interpret an object NegDP under a Neg>Mod modal, *contra* Generalization B. Most likely, this is the result of locality conditions: NegDP is licensed by negation (or a negation position) within its clause. Recall that we assume that deontic modals are Raising predicates which take a clausal complement. Only in (58b) is negation within the clause which contains the object NegDP, hence only this negation is local. For NegDP to be able to access the higher negation in (58a), an additional mechanism must be invoked, and we suggest that restructuring may be involved for those speakers who accept *neg-split* in these contexts.

It seems clear that locality restrictions are generally at play in the interpretation of NegDP. For example, in a sentence with a Neg>Mod modal, the requirement that negation be interpreted above the modal is not the only constraint. It must also be interpreted within the clause that it occurs in. This holds for sentential negation and NegDP alike, suggesting a clausal upper bound on the domain in which negation may be interpreted.

(59) a. He heard that she doesn't have to leave.

Cannot mean: He didn't hear that she has to leave

- b. He heard that nobody had to leave.

Cannot mean: He didn't hear that somebody had to leave

The idea that restructuring might be involved in the reading in (57a) is supported by two additional considerations. The first one is that none of the German and Dutch speakers we have consulted had a difficulty with this reading and both of these languages are known to make productive use of restructuring (Wurmbrand 1999 among others). The second consideration is that, as Richard Larson (p.c.) points out to us, we predict that (57a) will not be possible when the functional material in the embedded infinitival increased, a factor which often, if not always, blocks restructuring. This prediction appears to be verified. The speakers we consulted who accept (57a) do not accept the Neg>Mod reading in (60).

(60) You have to be doing no homework tonight. Mod>Neg

In the absence of a process like restructuring, an object NegDP of an infinitive embedded under a modal will not have that modal inside its clause, and so Generalization B is irrelevant. Generalization B is relevant only for those speakers who allow an object NegDP to access the matrix negation represented in (57a): for these speakers, object NegDP can scope over the modal only when negation independently scopes over that modal (*have to* and *need to* vs. *must*). This apparent counterexample to Potential Generalization B then, follows from general locality restrictions and is not truly an exception.

5.3 NegDP+ *particular*

Another potential counterexample is observed with Object NegDPs modified by *particular*. Contrast the following two sentences:

- (61) a. (For her assignment,) She must read no particular book about Nixon, but she does have to read SOME book about Nixon
- b. #She must read no book about Nixon but she does have to read SOME book about Nixon

The status of (61b) is easy to explain: the first clause says that she is forbidden to read a book about Nixon and the second clause contradicts this by saying she must read a (non-specific) book about Nixon. The acceptability of (61a), however, implies that the DP *No particular book about Nixon* can scope over the Mod>Neg modal *must*, and can have the reading in (62).

- (62) There is no particular book about Nixon that she must read, but she does have to read SOME book about Nixon.

The behavior of *No particular book about Nixon* is a counterexample to Generalization B. This wide scope behavior, of course, is not unique to NegDPs since generally, DPs with *particular* are interpreted with wide scope:

- (63) a. Every student read a particular book. (only $\exists > \forall$)
- b. Five students read a particular book. (only $\exists > 5$)
- c. Every student read a particular book, namely one that was published on his birthday. (functional wide scope reading)

We do not know at this point how *particular* forces wide scope. And since we have remained agnostic in this paper about the (mysterious as of yet) factor(s) which determine a modal's scope with respect to negation, we cannot say what it is that *particular* manages to overcome, which a NegDP without it cannot. For example, in terms of the proposal that deontic *must* is a PPI (Iatridou and Zeijlstra 2009, Homer 2009) the first hypothesis to explore would be that when a NegDP which contains *particular* scopes over *must*, the intervention of *particular* rescues the PPI *must* from being in the scope of negation. One could explore the possibility that *particular* in (61a) is focused by the negation of the NegDP in the way discussed in section 5.1. If so, negation scopes over *must* by transitivity: *particular* scopes over *must* because of its (mysterious) wide scope properties, negation scopes over *particular* because it focuses it. As suggested above, the intervention of *particular* saves the PPI *must*. We leave the exploration of this option for future research.²³

6 How to Reconstruct and How to Decompose?

We have shown numerous cases in which NegDP as a whole appears to be scoping below its superficial position but, as we have argued, these scope reversal effects are due to mechanisms which have little to do with A-reconstruction.

Three related conclusions emerge from this study: (a) The scope position for NegDPs is the scope position of sentential negation; (b) the negative component of the NegDP never undergoes A-chain scope diminishment; (c) the existential component of the NegDP does undergo A-chain scope diminishment.

What is the relationship between (a), (b) and (c)? Conclusion (a) may explain conclusion (b): the scope of the negative ingredient within NegDP is the scope of sentential negation. Since negation scopes in a fixed position, it cannot undergo additional scope adjustment operations such as A-reconstruction. We believe that our conclusions may offer an explanation for the narrow theoretical claim in Lasnik 1999, that NegDPs do not undergo A-reconstruction: NegDPs do not undergo A-chain reconstruction (in toto) because the negative ingredient within NegDP cannot reconstruct. This is in line with conclusion (c), that the non-negative part of the NegDP can undergo A-chain reconstruction.

For this line of explanation of the absence of negative reconstruction to be complete, we need to tie several loose ends. In particular, we need to flesh out the details of the syntactic derivation of sentences with derived subject NegDPs. We also need to be more precise about the theory of scope diminishment and the theory of decomposition, which, taken together, are compatible with the behavior of NegDPs. We note at the outset that the patterns we have presented do not, in and of themselves, conclusively distinguish between different approaches to scope diminishment nor between decomposition accounts, so our focus will be on spelling out the details necessary for a complete explanation, and on demonstrating that reconstruction of negation can be excluded in a relatively principled way. By this we mean that while we will present one particular combination, it should be borne in mind there are other combinations of proposals of reconstruction and theories of decomposition which are empirically adequate. Limitations of space prevent us from presenting them all in detail and

comparing between them. The combination which we present below seems to be empirically adequate and explanatory but it is not intended as a unique solution.

6.1 Possible Derivations

We begin by laying out the details of the syntactic derivation. We have argued that decomposition accounts may well have an easier time dealing with the facts discussed in this paper than what we called the semantic camp. The observation that NegDPs scope in the position of sentential negation is straightforwardly explained if NegDP is in some sense associated with sentential negation. This property is common to all the approaches we characterize as decompositional: at some level of representation, negation and the indefinite are separate syntactic entities. This entails that a sentence such as *No student is certain to solve the problem* could in principle have several possible derivations. In (64a) negation is based-generated in the matrix clause and the indefinite is the subject of the embedded clause; raising of the indefinite to the matrix clause brings it into the immediate domain of the negative component, as shown in (64b). Since only the indefinite raises, only the indefinite is expected to reconstruct, and since negation is located in the matrix clause, we derive the partial reconstruction effect in a relatively straightforward way. (64), however, is not the only possible derivation. In principle, the negation could also be generated in the embedded clause. On one possible scenario, and depending on the theory of decomposition adopted, embedded negation would amalgamate with the indefinite and the two would raise as a constituent, as illustrated in (65). Since the entire NegDP has raised from the embedded position, the entire NegDP would be expected to reconstruct, counter to fact. On another possible scenario,

illustrated in (66), embedded negation remains in the embedded clause and only the indefinite part raises. Reconstruction of the indefinite part to a position below embedded negation will again produce scope diminishment of the entire NegDP, since negation is located in the embedded clause.²⁴

- (64) a. Neg is certain \exists student to solve this problem
b. Neg [\exists student]₁ is certain t₁ solve the problem
c. No student is certain to solve the problem
- (65) a. is certain Neg \exists student to solve this problem
b. is certain No student to solve the problem
c. No student₁ is certain t₁ to solve the problem
- (66) a. is certain Neg \exists student to solve this problem
b. \exists is certain Neg to solve the problem

Therefore, if we want to attribute the absence of A-reconstruction of NegDP to the position that the negative component cannot reconstruct, we need to explain what excludes the derivations in (65) and (66).

It might be possible to immediately exclude (66) on the grounds that the indefinite component of a NegDP cannot move out of the scope of the negative component. This is an old observation in the literature on neg-split (see references cited above), and appears to hold in all neg-split contexts, above and beyond the raising environments discussed here. For example, in the well-known Dutch example in (26) above (Rullman 1995), an object NegDP in a simple transitive clause can give rise to three readings: one, in which the entire NegDP is interpreted above the predicate, another

reading in which it is interpreted below the predicate, and a third reading, the split reading, in which negation scopes above the predicate and the indefinite scopes below it. Crucially, there is no reading in which the indefinite scopes above the predicate and the negation below. We will not discuss the reasons for this and will simply assume that the factor(s) which block the indefinite from moving from under the scope of the negative component will also exclude (66).

How can we exclude the derivation in (65)? For this we adopt a proposal made in Sportiche 2005. Sportiche (2005) argues that negation blocks restructuring. He also argues that some amount of restructuring is necessary for movement of full DPs from an embedded clause. The evidence for the relationship between negation and restructuring includes clitic climbing of various sorts in Italian and French, which is blocked by embedded negation. Similarly, negative concord with a matrix subject in a raising construction is impossible when negation is embedded, suggesting that the subject could not have raised from the embedded subject position, in (67), due, again, to the presence of embedded negation. Note in particular the similarity between the ungrammatical (67b) and the impossible derivation of (65) (example (67) is taken from Sportiche 2005 example (35)).

- (67) a. *Aucun enfant ne semble être venu.*
No child neg seems to.be arrived
'No child seems to have arrived.'
- b. **Aucun enfant semble n'être venu*
No child seems neg.to.be arrived

Sportiche argues that when movement of a full DP is possible, the option of full DP reconstruction necessarily exists. But when the requisite amount of restructuring is missing, only movement of an NP, as opposed to a DP, is possible. Sportiche (2005) proposes that all quantificational DPs can have a split structure, such that the determiner may be generated in the matrix clause, similar to the derivation we have sketched in (64). This part of the proposal will allow a quantified DP, such as *every doctor* in (68b), to occur as a derived subject even when restructuring is blocked, as it is in (68b), since movement of the NP residue *doctor* is still possible. But because the entire DP *every doctor* couldn't have raised, it follows that it also cannot reconstruct, explaining the difference in scope possibilities of the universal and negation in (68a-b) (from Chomsky 1995).

- (68) a. Every doctor is not here.
'Every doctor is not here.'
'Not every doctor is here.'
- b. Every doctor seems not to be here.'
'Every doctor seems not to be here.'
Cannot mean: 'It seems that not every doctor is here.'

While Sportiche does not provide an explicit analysis of NegDPs, we can incorporate some of his observations to include the derivation in (64) but exclude the one in (65), repeated below:

- (69) a. Neg is certain \exists student to solve this problem
b. Neg [\exists student]₁ is certain t₁ solve the problem

- c. No student is certain to solve the problem
- (70)
- a. is certain Neg \exists student to solve this problem
 - b. is certain No student to solve the problem
 - c. No student₁ is certain t₁ to solve the problem

In (69) there is no negation in the lower clause. Therefore, the existential can move out and reconstruct, deriving the Neg Split reading. In (70), in contrast, the negative component of the NegDP starts out in the lower clause, so it will block restructuring. As a result, NegDP will not be able to move out of the embedded clause. It is also not possible to move the indefinite part only, as we have already noted in the context of (66) above. Therefore, if we incorporate the correlation between negation, restructuring, and reconstruction from Sportiche (2005), it follows that when a NegDP has undergone apparent A-movement, its negative component necessarily started out in the matrix clause. With this conclusion in hand, we now turn to examine some theories of scope diminishment, as well as some proposals for decomposition and discuss their compatibility with the patterns presented above.

6.2 Some Theories of Scope Diminishment

We limit ourselves to three syntactic accounts of scope diminishment in A-chains: Quantifier lowering (May 1985, Chomsky 1995), the copy theory of movement (proposed to account for A-reconstruction by Fox 2000), and reconstruction as PF-movement (Sauerland and Elbourne 2002).²⁵

Chomsky (1995) suggests that when scope diminishment effects in A-chains are observed, as in (1c), they are due to Quantifier Lowering. On the Quantifier Lowering

approach, a quantifier is lowered to an A-bar position, typically IP-adjoined, of the clause in which it is interpreted. In order to capture the absence of reconstruction of NegDPs, NegDPs would have to be blocked from undergoing QL. This meshes well with the fact that most likely, neither can NegDPs undergo QR (from von Stechow and Iatridou 2002).

(71) Everybody touched no dessert

Cannot mean: No dessert is such that everybody touched it

Regarding the derivation of neg-split, QL will be compatible depending on what has actually raised from the embedded position. In a high split derivation, such as (69), negation starts out in the matrix clause and only the indefinite raises; the indefinite may well be lowered by QL in (69). For the case of (70), however, QL would need to be supplemented with a principle which excludes this derivation. For example, if (70) is excluded on the grounds discussed above, QL is compatible with the facts.

In the copy theory of movement approach to scope diminishment, there is no actual "lowering" in A-chains. The possibility for scope diminishment reduces to the choice of which copy is interpreted at LF. If it is the highest copy only, then only surface scope is observed; scope diminishment effects follow from interpretation of a/the lower copy or part of it. Interpretation of the full copy in (69) will yield neg-split, since on this derivation only the existential is generated in the embedded clause and subsequently raises. For this approach too, the challenge is the derivation in (70) with negation in the embedded clause. If (70) is excluded along the lines discussed above, the problem is neutralized.

The PF-movement approach to scope diminishment developed in Sauerland and Elbourne and (2002) (henceforth, S & E) makes stronger predictions about what can and cannot reconstruct. The question of scope diminishment reduces to the question on which branch of the derivation movement occurs. If the DP moves from its base-position to a higher position in the overt syntax, it is interpreted (only) in the derived position at LF. However, the DP can also undergo PF-movement. In this case it stays in its base position throughout the derivation to LF and is interpreted in its base-position, yielding scope diminishment effects. We see a problem for fitting the scope behavior of NegDP within the analysis of scope diminishment as PF-movement. Within this approach, the absence of scope diminishment of NegDPs *in toto* entails the absence of PF-movement for NegDP. In other words, NegDPs must obligatorily raise in the stem, before the derivation branches to LF. It is not so clear, however, what would keep a NegDP from delaying movement to PF, and the possibility that this option is excluded is not predicted by S & E 2002. S & E 2002 argue that within the class of weak DPs, DPs which cannot delay movement to PF and must move prior to PF are DPs which are deviant in existential constructions. This is because PF movement requires feature checking to be accomplished via covert feature movement, exactly as it is in existential constructions on the proposal they develop. Conjoined DPs in English, for example, are impossible with agreement in the existential construction, and also do not reconstruct (in other words, cannot delay movement to PF). But since NegDPs are perfectly fine in existentials, there seems to be no reason to exclude their movement at PF, and the absence of reconstruction of the entire NegDP is not predicted.

However, the PF-movement theory of reconstruction fares much better if we incorporate the proposal that negation interferes with restructuring, with the consequence that the negative component of the NegDP can only be merged in the higher clause. Then, if one were to adopt the PF-movement theory of scope diminishment, the issue would boil down to whether movement of the existential to the higher clause in (69) occurred before spell-out or at PF, resulting in scope diminishment of the existential.

In short, neither of these theories provides a ready-made solution to the question of lack of scope diminishment of NegDPs. Once (70) is independently ruled out, all three theories can derive the patterns of NegDP scope diminishment.

6.3 NegDP Decomposition

In 6.1 and 6.2 we introduced the correlation between negation, restructuring, and reconstruction proposed in Sportiche (2005) and showed how various theories of reconstruction might handle the absence of negative reconstruction when supplemented with Sportiche's insight. Our final step is to select the theory of decomposition most compatible with Sportiche's generalization. We emphasize again that our selection is not intended as a unique account.

Recall that the feature common to all theories of (de-)composition is that at LF, negation and the indefinite are two syntactically independent constituents, which can scope across a third scopal element. We also know that by PF, these components have amalgamated into a single unit. However, how does the NegDP start out? There are two possibilities: it could start out “composed” and decompose into its two ingredients at LF. We call this *alpha-decomposition*, in (72). Alternatively, the two components enter the

derivation as separate constituents (i.e. “decomposed”), remain separate through LF, and amalgamate at PF. We call this *beta-decomposition*, in (73).

(72) Merge NegDP Alpha-decomposition

PF: NegDP (German *kein*, Dutch *geen*, English *no*)

LF: Neg \exists

(73) Merge Neg \exists Beta-decomposition

PF: NegDP (German *kein*, Dutch *geen*, English *no*)

LF: Neg \exists

We cannot rule out the existence of alpha-decomposition, but we think that the data discussed in this paper receive a more general, hence explanatory, account if beta-decomposition is adopted. At the very end of this section we return to alpha-decomposition and discuss the auxiliary assumptions which would be needed.

Since we found that Sportiche’s proposal regarding the intervention of negation with restructuring and A-movement was a necessary addition to every theory of scope diminishment that we examined, we concluded that only the structure in (74a) could serve as input to NegDP derived subjects.

(74) a. Neg is certain [\exists student to solve this problem]

b. is certain [Neg \exists student to solve this problem]

The theory of decomposition compatible with Sportiche's generalization is therefore one in which negation and the indefinite enter the derivation as two independent constituents and merge only later on. This conclusion will ensure that the negation within NegDP is formally identical at the relevant stage to ordinary restructuring-blocking negation. Beta-

decomposition seems therefore to be the theory most compatible with the exclusion of (74b) via Sportiche's generalization. Proposals with this property include Klima 1964 and Rullman 1995.²⁶

Let us assume that movement of NegDP must be in overt syntax and before PF. Within a single spell-out model with beta-decomposition (74b) is excluded because it would require PF, and the formation of the NegDP, to precede overt syntax (A-movement). It is also excluded within a multiple spell-out model, since material sent to PF (the derived NegDP) is precluded from undergoing further non-PF-movement. It may appear, therefore, that Sportiche's generalization is no longer necessary, since (74b) is independently excluded by the logic behind the order of operations involved. The problem, however, rears its head again if we allow A-movement to be delayed to PF, following the composition of the NegDP, and PF movement yields reconstruction effects as in Sauerland and Elbourne (2002). This derivation would be legitimate, in Sauerland and Elbourne's terms, but it would produce scope-diminishment of the entire NegDP, counter to fact. The incorporation of Sportiche's generalization therefore seems necessary to block PF-movement of (an incorporated) negation as well.

Recall that what forced us to beta-decomposition was the adoption of the proposal in Sportiche 2005. If we don't do that, there might, in fact, be a way to save alpha-decomposition as well. NegDP would be generated as the embedded subject, and would raise to matrix subject position, followed by decomposition at LF. The absence of NegDP scope diminishment wouldn't follow on the copy-theory of movement, since there will be a copy of the entire NegDP in the embedded clause. It could, however, be

made to follow if Quantifier Lowering were adopted. QL would lower only the indefinite, and would not be able to lower the negative component on the reasonable assumption that QL can target only single, coherent, constituents. This approach may, however, seem less attractive than the one based on beta-decomposition because it is tied directly to the particular mechanics of decomposition, rather than to the general behavior of negation and its interference with restructuring and A-movement, as observed also in clitic climbing, negative concord, and reconstruction of universal quantifiers below embedded negation.

In short, there may be more than one way to block the negative component of the NegDP from undergoing scope diminishment, depending on which theory of scope diminishment and which theory of decomposition are adopted. As we said earlier in this section, our goal is to show that it is possible to exclude (74b) in a relatively principled way, rather than to argue in favor of a single approach.

7 Conclusions

We argued that even though scope reversals involving Raising predicates and NegDP subjects are observed, no mechanism of “undoing” A-movement is involved. The relation between a NegDP and the scopal predicate it is a subject of are determined by different mechanisms, which also determine the scopal relationship between sentential negation and the predicate. This implies that Lasnik’s (narrow) claim that NegDPs do not undergo A-reconstruction is correct, despite appearances to the contrary. We also showed that the indefinite component of the NegDP may reconstruct, and produces neg-

split. This suggests that even with NegDP, some A-reconstruction is possible. It also suggests that the absence of NegDP reconstruction reduces to the absence of reconstruction of the negative part. To address this issue, we adopted the proposal in Sportiche (2005) that negation blocks restructuring and all DP movement from the embedded clause. This entails that a derived subject NegDP never enters the derivation composed, and that the negation is merged in the matrix clause, with subsequent A-movement of the indefinite part, subject to reconstruction.

References

- Barss, Andrew. 1986. Chains and anaphoric dependence. Doctoral dissertation, MIT, Cambridge, MA.
- Bartsch, Renate. 1973. 'Negative transportation' gibt es nicht. *Linguistische Berichte* 27.
- Beghelli, Filippo and Tim Stowell. 1997. Distributivity and negation: The syntax of *each* and *every*. In *Ways of Scope Taking*, ed. by Anna Szabolsci, 71-108. Kluwer Academic Publishers.
- Bhatt, Rajesh. 1997. Obligation and possession. In *The proceedings of the MIT roundtable on argument structure*, ed. by Heidi Harley, 21-40. MIT Working papers in Linguistics (MITWPL) 32. Cambridge, MA: MIT, MIT Working Papers in Linguistics.
- Butler, Jonny. 2003. A Minimalist Treatment of Modality. *Lingua* 113:967-996.
- Christensen, K. K. 1986. Norwegian *ingen*: A case of post-syntactic lexicalization. In

Scandinavian Syntax ed. by Osten Dahl and Anders Holmberg, 21-35.

Stockholm: University of Stockholm, Institute of Linguistics.

Cormack, Annabel and Neil Smith. 2002. Modals and negation in English. In *Modality and its interaction with the verbal system*, ed. by Sjef Barbiers, F. Beukema, and W. van der Wurff, 133-163. Amsterdam: John Benjamins.

Cresti, Diana. 1995. Extraction and reconstruction. *Natural Language Semantics* 3:79-122.

De Swart, Henriëtte. 2000. Scope ambiguities with negative quantifiers. In *Reference and anaphoric relations*, ed. by Klaus von Heusinger and Urs Egli, 109-132. Dordrecht: Kluwer.

Fillmore, C. 1963. The position of embedding transformations in grammar. *Word* 19: 208-231.

von Fintel, Kai and Sabine Iatridou. 2003. Epistemic containment. *Linguistic Inquiry* 34: 173-198.

von Fintel, Kai and Sabine Iatridou. 2007. Anatomy of a Modal Construction. *Linguistic Inquiry* 38:445-483

Fox, Danny. 1995. Economy and scope. *Natural Language Semantics* 3:283-341.

Fox, Danny. 2000. *Economy and semantic interpretation*. Cambridge, MA: MIT Press.

Fox, Danny and Jon Nissenbaum. 1999. Extraposition and scope: A Case for overt QR. In *Proceedings of the 18th West Coast Conference in Formal Linguistics (WCCFL 18)* ed. by Sonya Bird, Andrew Carnie, Jason D. Haugen, and Peter Norqvist, 132-144. Somerville, MA: Cascadilla Press.

- Gajewski, Jon. 2005. Neg-Raising: Presupposition and polarity. Doctoral dissertation, MIT, Cambridge, MA.
- Geurts, Bart. 1996. On *No*. *Journal of Semantics* 13:67-86.
- Haegeman, Lilliane. 2002. West Flemish negation and the derivation of SOV order in West Germanic. *Nordic Journal of Linguistics* 25: 154-189.
- Horn, Lawrence. 1978. Remarks on Neg-raising. In *Syntax and Semantics 9: Pragmatics*, ed. by Peter Cole, 129-220. New York: Academic Press.
- Homer, Vincent. 2009. Epistemic Modals: High, ma non troppo. Paper presented at NELS 40, MIT, November 2009.
- Horn, Lawrence. 1989. *A natural history of negation*. Chicago: Chicago University Press.
- Hornstein, Norbert. 1994. An argument for minimalism: The case of antecedent contained deletion. *Linguistic Inquiry* 25: 455-480.
- Iatridou, Sabine and Hedde Zeijlstra. 2009. On the scopal interaction of negation and deontic modals: revealing a mystery. Paper presented at the 25th meeting of the Israeli Association of Theoretical Linguistics (IATL 25), Ben Gurion University, Israel, October 2009.
- Jacobs, J. 1980. Lexical decomposition in Montague Grammar. *Theoretical Linguistics* 7: 121-136.
- Johnson, Kyle & Satoshi Tomioka. 1997. Lowering and mid-size clauses. In *Reconstruction: Proceedings of the Tübingen Workshop*, ed. by Graham Katz, Shin-Sook Kim, and Heike Winhart, 185-206. Universität Stuttgart and Universität Tübingen.

- Kemenade, A. van. 1998. Sentential negation and clause structure in Old English. In *Negation in the history of English*, ed. by I. Tieken-Boon, G. Tottie, W. van der Wurff, 147-166. Berlin: Mouton De Gruyter.
- Kayne, Richard S. 1998. Overt and covert movement. *Syntax* 1: 128-191.
- Kratzer, Angelika. 1995. Stage-level and individual-level predicates. In *The Generic Book*, ed. by Gregory N. Carlson and Francis Jeffrey Pelletier, 125-175. Chicago: Chicago University Press.
- Klima, E. 1964. Negation in English. In *The Structure of Language*, ed. by Jerry Fodor and Jerry Katz, 246-323. Englewood Cliffs, NJ: Prentice-Hall.
- Ladusaw, William. 1992. Expressing Negation. In *Proceedings of the Second Conference on Semantics and Linguistics Theory*, ed. by Chris Barker and David Dowty, 237-259. Columbus: Ohio State University, Dept. of Linguistics.
- Laka, Itziar. 1990. Negation in Syntax: On the nature of functional categories and projections. Doctoral dissertation, MIT, Cambridge, MA.
- Lakoff, Robert. 1969. A syntactic argument for negative transportation. *Chicago Linguistic Society* 5: 149-157.
- Larson, Richard, Marcel Den Dikken & Peter Ludlow. 1996. Intensional transitive verbs and concealed complement clauses. *Rivista di Linguistica* 8: 29-46.
- Lasnik, Howard. 1999. Chains of arguments. In *Working minimalism*, ed. by Samuel D. Epstein and Norbert Hornstein, 189-215. Cambridge, MA: MIT Press.
- Lechner, Winnie. 1998. Two Kinds of reconstruction. *Studia Linguistica* 52: 276- 310.
- Lee, Felicia. 2006. *Have to* and the scope of modality. In *Proceedings of the 25th West*

- Coast Conference on Formal Linguistics (WCCFL 25)*, ed. by Donald Baumer, David Montero, and Michael Scanlon, 245-253. Somerville, MA: Cascadilla Press.
- May, Robert. 1977. The grammar of quantification. Doctoral dissertation, MIT, Cambridge, MA.
- May, Robert. 1985. *Logical Form: Its structure and derivation*. Cambridge, MA: MIT Press.
- Penka, Doris. 2007. Negative indefinites. Doctoral dissertation, Universität Tübingen, Tübingen, Germany.
- Potts, Chris. 2000. When even *no*'s neg is splitsville. Jorge Hankamer's Web Fest.
- Potts, Chris. 2002. The syntax and semantics of *As*-paranthenicals. *Natural Language and Linguistic Theory* 20: 623-689.
- Prince, Ellen. 1976. The syntax and semantics of neg-raising, with evidence from French. *Language* 52: 404-426.
- Romero, Maribel. 1997. Problems for a semantic account of scope reconstruction. In *Reconstruction: Proceedings of the Tübingen Workshop*, ed. Graham Katz, Shin-Sook Kim, and Heike Winhart, 185-206. Universität Stuttgart and Universität Tübingen.
- Ross, John R. 1973. Slifting. In *The formal analysis of natural languages: Proceedings of the first international conference*, ed. by M. P. Schutzenburger, M. Gross & M. Halle, 133-169. Mouton: The Hague.
- Rullman, Hotze. 1995. Geen eenheid. *Tabu* 25: 194-197.

- Sauerland, Uli and David Elbourne. 2002. Total reconstruction, PF movement, and derivational order. *Linguistic Inquiry* 33: 283-319.
- Schwartz, Bernhard and Rajesh Bhatt. 2006. Light negation and polarity. In *Cross Linguistic Research in Syntax and Semantics: Negation, tense, and clausal architecture*, ed. by Raffaella Zanuttini, Héctor Campos, Elena Herburger, and Paul H. Portner, 175-198. Washington, DC: Georgetown University Press.
- Szabolcsi, Anna. 1997. *Ways of Scope Taking*. Dordrecht: Kluwer.
- Sportiche, Dominique. 2005. Division of labor between Merge and Move: Strict locality of selection and apparent reconstruction paradoxes. LingBuzz/000163.
- Wurmbrand, Susi. 1999. *Infinitives*. Amsterdam: John Benjamins.
- Zanuttini, Raffaella. 1997 *Negation and Clausal Structure: A comparative study of Romance languages*. New York: Oxford University Press.
- Zeijlstra, Hedde. 2007a. On the lexical status of negative indefinites in Dutch and German. LingBuzz/000566.
- Zeijlstra, Hedde. 2007b. Zero licensors. *Snippets* 16: 21-22.
- Zeijlstra, Hedde and Doris Penka. 2005. Negative Indefinites in Dutch and German. Ms, Universität Tübingen, Tübingen, Germany.

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¹From now on, we will often use the descriptive terms "scope reversal" and "scope diminishment" instead of "(A-)reconstruction" in order to remain neutral regarding the mechanism that yields (1c).

²We assume a raising analysis for deontic modals (Bhatt 1997, Wurmbrand 1999). We do not include epistemic modals in our presentation because of complications due to the Epistemic Containment Principle (von Stechow and Iatridou 2003). To our knowledge, the interaction of NegDP with epistemic modals does not contradict any of our conclusions.

³In this paper we remain agnostic about the reason for these scopal properties, though we can exclude linear order. Among the class of modals which scope under negation, *have to* and *need to* occur to the right of negation, while *can* occurs to the left of negation. Such discrepancies between linear order and relative scope are also found in Spanish and Greek for some modals (see (54-55) below). See Iatridou and Zeijlstra 2009 and Homer 2009 for the view that the scopal properties of modals with respect to negation result from the status of modals as negative or positive polarity items. See Cormack and Smith 2002, Butler 2003, and Lee 2006 for a variety of alternatives.

⁴In a later section, we will see a particular intonational contour in which the excluded scope in (7b) may arise. See also Iatridou and Zeijlstra 2009.

⁵A speaker who, for example, interprets *must* under a subject NegDP would contradict this pattern only if that speaker also interprets *must* above sentential negation.

⁶We set aside the interaction between subject NegDP and *likely* because speakers seem divided as to what *likely* means. This can be seen when they are asked what *not*

likely means. For some, *likely* means having probability larger than 50%. For these speakers *not likely* does not mean *unlikely*, since not having a probability higher than 50% does not mean having a probability lower than 50%. That is, (ia) can be used when one thinks that Sue's chances are equal to others'. For such speakers, *likely* is not a neg-raising predicate and negation only scopes over it. Generalization A correctly predicts that for these speakers subject NegDP will only scope over *likely*:

- (i) a. It is not (particularly) likely that Sue will win \neq It is likely that Sue will lose
- b. No one is (particularly) likely to win \neq It is likely that no one will win

For speakers for whom *not likely* can also mean *unlikely*, Generalization A correctly predicts that the subject NegDP can scope under *likely*.

- (ii) a. It is not likely that Susan will win = It is likely that she will lose
- b. Nobody is likely to solve this problem = It is likely that nobody will solve it

While both groups can say things like 3% *likely*, speakers belonging to the first group recognize this as a potential contradiction.

⁷See also Kayne 1998.

⁸We would like to remind the reader that the presuppositional analysis is not intended to cover the deontic Mod>NegDP modals discussed in the previous section. See also fn. 3.

⁹Thanks to Jon Gajewski (p.c.) for suggesting this diagnostic to us.

¹⁰It is reasonable to assume that Neg-Split also applies to Neg-Raising predicates such as *believe*. If so, (18) with Neg-Split would have the representation in (i):

(i) It is not believed by John that a butler is guilty.

Applying Gajewski's logic to (i) would derive the inference where *believe* scopes over negation and one might wonder whether it was necessary to build presuppositions for representations such as (19a) with the entire NegDP in the matrix clause, rather than directly on the split representation in (i). As it turns out, neg-split is neither necessary nor sufficient to account for the inverse reading. It is not sufficient because there are verbs which permit split but not neg-raising (*show, demonstrate, prove* above), and it is not necessary because the inference goes through just as well in contexts in which NegDP is interpreted De Re.

¹¹We refer here to the reading in which negation scopes above these predicates. See footnote 6 for speaker variation regarding the possibility that *likely* is a Neg-raising predicate and also allows negation to be interpreted in the embedded clause; the same may very well hold for *was expected*. Recall that on our presuppositional account of reg-raising with NegDP subjects, the NegDP is syntactically represented only in its surface position. The split readings in (39) are expected, therefore, even for those speakers for whom these predicates are neg-raising predicates.

¹²Ideally, we would expand the discussion to include all the raising predicates on our list, but considerations of space preclude us from doing so. We should also point out that there may be additional constraints on reconstruction (of the indefinite part of the NegDP) that complicate the data, like the one suggested for *certain* in von Stechow and Iatridou 2002:fn. 27.

¹³Strictly speaking, Zeijlstra's and Penka's proposals do not involve (de)composition. For them, a NegDPs is a plain indefinite, and the negative interpretation is given by a covert negative operator which licenses the NegDP in its scope. We group Penka and Zeijlstra in the decomposition camp because on these analyses too negation and the existential are syntactically separate.

¹⁴We have nothing to say about why object NegDPs might be degraded, other than to point out that there is at least one other English quantifier that is restricted to subject position and which also happens to be negative.

- (i) a. Not everybody likes Adamo.
- b. *I saw not everybody.

¹⁵Specifically, since the indefinite part of the NegDP can find itself on the opposite side of a scopal element from the negative component, there might be more than one reading in which negation scopes above the modal. We leave open whether object NegDPs with Neg>Mod modals produce both De Re and De Dicto readings.

¹⁶See however Kayne 1998 for a re-interpretation of the Norwegian facts discussed in Christensen 1986, in terms of overt movement of object NegDP to spec NegP and the claim that in English, object NegDPs also move overtly to spec NegP.

¹⁷Such accounts would have to ensure that some of these positions are (de)activated in the presence of certain kinds of modals. Setting aside these finer details, what is relevant for us is that negation is always interpreted on the same side of these scopal elements.

¹⁸In other words, there are two splits among English speakers: Some do not accept object NegDPs at all. Among the rest, some permit ambiguous readings for an object NegDP in a sentence with a Neg>Mod modal. Others permit only the Mod>Neg readings with modals that we have classified as Neg>Mod. The latter is also the judgment reported in Larson, den Dikken, and Ludlow 1996.

¹⁹Iatridou and Zeijlstra 2009 show that the attempted Mod>Neg reading is not possible in German with NPI *brauchen* 'must' as this modal requires negation to be interpreted over it:

- (i) Um zu sehen, wie andere leben, muss / *braucht er eine Zeitlang keine
in order to see how others live, has to / NPI mod he for a while no
neuen Geschenke (zu) bekommen.
new gifts receive

'In order to see how others live, he has to get no new gifts for a while.'

²⁰David Pesetsky (p.c.) suggests a different analysis for (57b): NegDP can also be understood as a DP with the cardinality marker *zero*. When NegDP is understood as *zero DP*, it would be interpreted in-situ, producing the Mod>NegDP readings of (57b).

However, *no children* does not have to be interpreted as *zero children* in order to scope under the modal. Zeijlstra (2007) shows that *zero DPs* do not license negative polarity items, as can also be seen in (i). The acceptability of (ii) shows that *no children* can scope under the modal even when it licenses an NPI (i.e. does not function as *zero NP*).

- (i) *He has to get zero new toys from anybody.
(ii) He has to get no new toys from anybody.

²¹Noam Chomsky (p.c.) suggests an alternative, in which the object NegDP can scope under negation even with a Neg>Mod modal because it is in a different phase from the modal. On this scenario, it is phases, not clauses and scope positions for negation, which determine the domain in which negation is interpreted.

²²One may wonder why the extra position for covert negation in (58b) is not accessible to subject NegDPs. If it were, sentences with modals such as *have to* and subject NegDPs would be ambiguous, on a par with the ambiguity attested with these modals and object NegDPs. In section 6 we propose that the subject NegDP cannot scope in the embedded NEG position because it could not have raised from an embedded clause containing negation; negation blocks restructuring (Sportiche 2005).

²³A related problem arises in contexts of extraposition, as discussed in Fox and Nissenbaum (1999) (henceforth, F & N). Extraposition forces the reading in which the object NegDP scopes above *must*:

- (i) a. John must miss no assignment that is required by his math teacher in order to stay in school. (must>no assignment)
- b. John must hand in no assignment in order to stay in school [that is required by his math teacher]. (no assignment>must)

According to F & N, (ib) is equivalent to *There is no assignment that is required by his math teacher that John must hand in order to graduate*. Following Williams (1974), who argues that extraposition extends the scope of the object at least as high as the extraposed material, F and N show the NegDP is interpreted in the position of the extraposed clause. It is unclear, however, that Williams' generalization is sufficient for the NegDP to

outscope *must*, because, as we have shown, Subject NegDPs are also higher than *must* in the syntax, yet scope under *must*. So what is going on in (ib)? The solution surely lies in a combination of the proper understanding of Williams's Generalization and the proper understanding of what is overridden when a NegDP is forced to scope over a mod>neg modal like *must*. As we said in the discussion of *particular*, if one takes mod>neg scope to follow from the PPI status of *must* (Iatridou and Zeijlstra 2009 and Homer 2009) then, once Williams' Generalization is understood, the question becomes what intervenes between negation and PPI *must*, such that the modal is protected from negation. We hypothesize that this is the *in order to*-clause.

²⁴ We exclude, apriori, the derivation in which both negation and the indefinite start out in the matrix clause since the embedded predicate's external theta-role would go unassigned.

²⁵ There are also accounts that propose semantic reconstruction in A-chains (Cresti 1995, Rullman 1995, Lechner 1998). It is unclear to us how the facts discussed in this paper could be couched within these proposals.

²⁶ While neither uses the term "PF" for where composition takes place, the prose implies that that is what was intended. For example, Rullman (1995) says "Incorporatie van *niet* vindt plaats (of althans, kan plaatsvinden) op een betrekkelijk oppervlakkig niveau van representatie." ("Incorporation of *niet* [Dutch sentential negation;SI] takes place (or can take place) at a relatively superficial level of representation.")