Negative DPs, A-Movement, and Scope Diminishment

Sabine Iatridou
Ivy Sichel

Lasnik (1999) has claimed that NegDPs in derived subject position cannot be interpreted in the embedded clause and do not undergo A-chain reconstruction. We show that with a well-defined set of predicates, including deontic modals and raising predicates, scope diminishment of NegDP is observed. We argue, nevertheless, that scope diminishment in these cases is not produced by A-chain reconstruction. We also show that A-chain reconstruction of the indefinite part is possible. We conclude that the claim that NegDP does not undergo reconstruction reduces to the observation that the negative ingredient cannot reconstruct, and we suggest why this should be so. If we are correct, the analysis removes an obstacle to the view that A-chains exhibit syntactic reconstruction.

Keywords: scope diminishment, A-chain reconstruction, negative DPs, neg-raising, neg-split, decomposition

1 Introduction

A-chains, like the one in (1a), have been claimed to allow scope diminishment 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 1994, Chomsky 1995, Fox 1995, Johnson and Tomioka 1998, Romero 1998, Lasnik 1999, Boeckx 2001, von Fintel and Iatridou 2003, Sauerland and Elbourne 2002, Sportiche 2005).[1]

(1) a. A Kenyan$_1$ is likely t$_1$ to win the Boston Marathon.
    b. There is a Kenyan who is likely to win the Boston Marathon.
    c. It is likely that some Kenyan or other wins the Boston Marathon.

We assume that A-chain reconstruction (henceforth, *A-reconstruction*) is possible. We address one of the problematic cases that has been used to argue against it, the case of negative

[1] From 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).

DPs (henceforth, NegDPs). We will show that while the entire NegDP never undergoes A-reconstruction, part of it does, thus supporting the existence of A-reconstruction even when NegDPs are involved.

Lasnik (1999) claims that in general, NegDP subjects in derived positions cannot be interpreted in the lower clause and have only ''high'' readings. For example, the predicate *guaranteed* allows the interpretation in (2b) but does not have the interpretation in (2c).

(2) a. No one$_1$ is guaranteed t$_1$ to solve the problem.
     b. No x, x is guaranteed to solve the problem
     c. *It is guaranteed that no one will solve the problem.

We call this claim—that subject NegDPs do not have inverse scope with the raising predicate of which they are the subject—*Lasnik's empirical claim*. Lasnik assumes that the mechanism that would produce scope reversal with NegDPs is A-reconstruction, and therefore, he takes the paradigm in (2) to show that subject NegDPs do not undergo reconstruction in A-chains. We call the claim that NegDPs do not undergo A-reconstruction *Lasnik's narrow theoretical claim*. From cases such as these and others, Lasnik concludes that there is no reconstruction in A-chains in general (*Lasnik's broad theoretical claim*). We consider this position to be incorrect and assume instead that reconstruction in A-chains is available in the grammar, but that different quantifiers may behave differently when it comes to scope diminishment. From here on, we focus on the scope diminishment behavior of NegDPs.

Contra Lasnik's empirical claim, we show that with a well-defined set of predicates, NegDP may be interpreted below the scopal element (ScE) that it linearly precedes. These predicates include a subset of deontic modals and a subset of raising predicates. As we show, there are deontic modals and raising predicates that independently take scope above (hereafter, just *scope above*) sentential negation. These predicates also scope above the NegDP that 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 reported, 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 in table 1.

In addition, we show that while the entire NegDP never undergoes A-reconstruction, the indefinite part may. This recalls the phenomenon of neg-split in German and Dutch, in which negation scopes above some scopal element, and the indefinite component scopes below it (Jacobs

Table 1
Our (dis)agreements with Lasnik 1999 at a glance

	Lasnik 1999	This article
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.

1980, Kratzer 1995, Rullmann 1995, Geurts 1996, de Swart 2000, Potts 2002, Zeijlstra and Penka 2005, Penka 2007, Zeijlstra 2007a). 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 generally correct, we can offer an explanation of the absence of A-reconstruction with NegDPs that is consistent with the general availability of A-reconstruction in the grammar. NegDPs do not undergo total reconstruction because the scope of the negative ingredient is determined by sentential negation and sentential negation does not reconstruct. With this understanding in place, we show that NegDPs actually support the view that A-chains exhibit reconstruction: while the entire NegDP may not reconstruct, the indefinite part may.

The article 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 suggest that these cases of scope reversal are not to be attributed to A-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 produced by 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 (exceptional-Case-marking) predicates reflects the relative scope of these predicates with respect to the marker expressing sentential negation.
    a. When these predicates scope above negation, they also scope above a subject NegDP.
    b. When they scope under sentential negation, they also 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 (table 2; see, e.g., Cormack and Smith 2002, Butler 2003, von Fintel and Iatridou 2007).[2]

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[2] We 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 Fintel and Iatridou 2003). To our knowledge, the interaction of NegDP with epistemic modals does not contradict any of our conclusions.

Table 2
Deontic modals with sentential negation

Neg>Mod modals	Mod>Neg modals
have to	must
need to	should
can	ought to
may	

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*).

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

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

For the purposes of this article, we can remain agnostic about the mechanism behind the relative scope of negation and deontic modals. It seems clear, though, that we can exclude linear order. Among the Neg>Mod modals, *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)). On one view, the different scope patterns correlate with different syntactic base-generated positions for deontic modals, either above or below the position of negation (Cormack and Smith 2002, Butler 2003). On a more recent view, developed independently in Iatridou and Zeijlstra 2009 and in Homer 2009, modals are polarity sensitive, and the relative scope of deontic modals and negation derives from the polarity status of the modal.[3] While *need* is a negative polarity item (NPI) and must scope below negation, *must*, for example, is a positive polarity item (PPI) and scopes above negation. Iatridou and Zeijlstra (2009) argue, in addition, for a class of polarity-neutral modals, such as *have to*. These modals do not require negation, unlike *need*, yet do scope below negation. Like all verbal elements, they are base-generated below negation, where they are also interpreted at LF (for further details, see Iatridou and Zeijlstra 2009, 2010). In what follows, we set aside the exact mechanism underlying the scope pattern in table 2.

The relative scope of the modal and negation perfectly matches the relative scope of the modal and a subject NegDP (see table 3): 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).[4]

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[3] As this article was going to print, Iatridou and Zeijlstra 2009 included one more bibliographical reference to the idea that modals like *must* and *should* are best seen as PPIs—namely, the forthcoming (at the point of this writing) Israel 2011.

[4] In section 5.1, we will see a particular intonational contour in which the excluded scope in (7b) may arise. See also Iatridou and Zeijlstra 2009.

Table 3
Deontic modals with subject NegDP

Subject NegDP>Mod modals	Mod>Subject NegDP modals
have to	must
need to	should
can	ought to
may	

(6) *Interpretation: Subject NegDP>Mod*
    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

(7) *Interpretation: Mod>Subject NegDP*
    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

    The correlation between the relative scope of sentential negation and the relative scope of the subject NegDP seems to be completely general.[5] It persists, for example, when NegDP originates as an embedded object, in (8). As expected, NegDP is interpreted over *have to* and under *should*.

(8) a. No student$_1$ has to [t$_1$ be arrested t$_1$]   (NegDP>Mod)
    b. No student$_1$ should [t$_1$ be arrested t$_1$]   (Mod>NegDP)

    In short, Generalization A holds with English deontic modals. Note, however, that when the modal is a Mod>Neg modal, the subject NegDP appears to have undergone scope reversal: its surface position is before and therefore above the modal, yet it is interpreted below the modal. This is in contradiction to Lasnik's empirical claim, according to which NegDPs do not scope below the predicate that they linearly precede. Nevertheless, we will not take these cases of scope reversal to imply that NegDP reconstructs and that A-movement is undone. Scope diminishment in A-chains is generally optional, and yields ambiguity (when no other binding conditions need to be met, such as the scope-trapping effects discussed in Fox 2000 among others). In contrast, the relative scope of a subject NegDP with respect to a particular modal shows no ambiguity. In addition, if scope reversal in (7) were produced by A-reconstruction, particular choices of modal should have no effect, and one would expect identical readings with the two groups of modals. These considerations lead us to conclude that whatever the principle regulating the scope of

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

NegDP and modals turns out to be, it will probably have little to do with the general mechanism of reconstruction in A-chains. Therefore, although the facts above are 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.   (NegDP>V)
Cannot mean: It was proven that no Mersenne number is prime
b. No theory was shown / demonstrated to be false.   (NegDP>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)
Can mean: It appears that no doctor is present
b. No doctor seems to be present.   (V>NegDP)
Can mean: It seems that no doctor is present
c. No student is believed to have witnessed that crime.   (V>NegDP)
Can mean: 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*, and *was shown* do not (see (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 in the same way that 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 Bartsch (1973), Horn (1978, 1989), and more recently 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). Bartsch (1973), Horn (1978, 1989), and Gajewski (2005, 2007) argue that a syntactic analysis is insufficient, and they develop a presuppositional account instead. Below, we present a new argument in favor of the presuppositional treatment of neg-raising based on the behavior of NegDPs.

Gajewski (2005, 2007), following Bartsch (1973), argues that neg-raising predicates are optionally (but preferably) associated with an excluded-middle (EM) presupposition. The content of the EM presupposition is that the holder of the attitude expressed by the neg-raising predicate

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[6] We set aside the interaction between subject NegDP and *likely* because speakers seem divided about what *likely* means. This can be seen when they are asked what *not likely* means. For some, *likely* means having probability higher 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 ≠ It is likely that Sue will lose

      b. No one is (particularly) likely to win ≠ 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 Susan will lose

      b. Nobody is likely to solve this problem = It is likely that nobody will solve this problem

must have the corresponding attitude either to the embedded proposition or to its negation. In other words, the presupposition rules out agnosticism regarding the truth of the embedded proposition. Compare, for example, the neg-raising predicate *believe* in (14) with the non-neg-raising predicates *show*, *demonstrate*, and *prove* in (17a). *Believe* in (14) is associated with the presupposition in (15). That presupposition, combined with the assertion (14), generates the inference in (16).

(14) John doesn't believe 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 (17b) associated with (17a), there is also no inference of the sort in (17c).

(17) a. John didn't show / prove / demonstrate that Mary is guilty.
    b. John showed / proved / demonstrated that [[Mary is guilty] or [Mary is innocent]]
    c. 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 presuppositions triggered in the scope of negative quantifiers project universally. In other words, the presupposition is formulated with a universal quantifier in the position occupied by the NegDP in the assertion. This means that (18)/(19a) are associated with the presupposition in (19b).

(18) No butler is 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 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) that has NegDP in the embedded clause at LF (see also Kayne 1998). If so, A-reconstruction is not necessary for deriving the inverse reading. Below, we suggest that a derivation with A-reconstruction is actually excluded, but before that we consider the advantages of the presuppositional account. First, the presuppositional account fits more naturally with the kind of lexical-semantic variation found 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 no EM presupposition is involved and agnosticism is permitted. 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 that reflects surface order would be expected to be favored over the inverse reading (thanks to Irene Heim (pers. comm.) for pointing this out).[7]

We will now show that A-reconstruction is not necessary for the low reading. We will look at examples in which the low reading of NegDPs in neg-raising contexts is possible even when A-reconstruction is excluded. We exclude A-reconstruction by imposing additional binding requirements that 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 butler$_1$ is believed by his$_1$ employer to be guilty.
b. A student of David's$_1$ is believed by him$_1$ to be guilty.
c. A student of his$_1$ is believed by David$_1$ to be guilty.

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

(22) a. No butler$_1$ is believed by his$_1$ employer to be guilty.
b. No butler of John's$_1$ is believed by him$_1$ to be guilty.
c. No butler of his$_1$ is believed by John$_1$ to be guilty.

In (22a–b), just as in (21a–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,

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[7] Recall that the presuppositional analysis is not intended to cover the deontic Mod>NegDP modals discussed in section 2.1.

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

As suggested by Jon Gajewski (pers. comm.), the distribution of strong NPIs allows us to sharpen the intuition about the meanings of the sentences in (22). Lakoff (1969) notes that certain strong NPIs, 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). Strong NPIs are good diagnostics for neg-raising because the requirement they impose is stronger than that of prototypical NPIs such as *ever*, which do not require the embedding predicate to be a neg-raiser (see (24c–d)). The examples in (24) are 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 NPIs, and they are.

(25) a. No butler$_1$ is believed by his$_1$ employer to have been sick in years.
     b. No butler of John's$_1$ is believed by him$_1$ to have been sick 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 is not dependent on A-reconstruction. It follows that mechanisms other than A-reconstruction must be involved in the low reading. Considerations of parsimony lead us to conclude that these other mechanisms are the only mechanisms involved.[8]

So again, while Lasnik's empirical claim turns out to be false, his narrow theoretical claim stands.

2.3 Interim Conclusion

We have shown that a subject NegDP can be interpreted below the scopal element it is the subject of. This possibility is produced by mechanisms that are unrelated to scope diminishment in

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[8] Ideally, one would also like to show that even when A-reconstruction isn't blocked, it isn't involved in the low reading. That would entail that A-reconstruction *cannot* be involved in scope reversals involving a NegDP, rather than showing that it *doesn't have to* be involved. However, such a proof may be impossible to achieve.

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. On the basis of scope-trapping effects like those introduced in (21)–(22), we argue that scope diminishment of the indefinite component is produced by A-reconstruction.

In neg-split, which has been primarily studied in Dutch and German, the two ingredients of a NegDP may scope somewhat independently of each other (see Jacobs 1980, Kratzer 1995, Rullmann 1995, Geurts 1996, de Swart 2000, Potts 2000, 2002, Zeijlstra and Penka 2005, Penka 2007, Zeijlstra 2007a; for neg-split in English, see Larson, Den Dikken, and Ludlow 1996, Potts 2000). In the following Dutch example (from Rullmann 1995), the split reading is the most salient:

(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 component has undergone some form of scope diminishment, as schematized in (27).

(27) Overt order: NegDP Modal   V Object
     Interpretation: Neg   Modal ∃ V Object

It should be clear that neg-split with scope diminishment of the indefinite part 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 therefore focuses on predicates that scope below sentential negation.

3.1 Scope Diminishment of the Indefinite Component 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.

(29) *Neg > ∃ > modal:* De re *interpretations (no split)*
    a. There is no student x such that x has to / needs to leave
    b. There is no student x such that x is allowed to leave

(30) *Neg > Modal > ∃: Split interpretations*
    a. It is not required that a student leaves
    b. It is not allowed that a student leaves

Since the split reading entails the *de re* reading, 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 the *de re* reading in two kinds of contexts. Assuming that *de re* readings presuppose the existence of entities satisfying the descriptive content of NegDP, a *de re* reading is excluded in (31) via a contradiction in content, since books that have not yet been written at the time of the utterance cannot be presupposed to exist (examples based on the rationale in Fox 2000). To the extent that (31) is grammatical, it has only 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 be written next year

Our claim about the split readings in (30) is further confirmed in existential constructions, another context that 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 the choice of modal. Consider a scenario in which nurses are allowed to administer a medication by themselves, without the presence of a doctor. The lack of a requirement that a doctor be present can be conveyed with a neg-split reading, and so this interpretation is 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 be 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 that a doctor be absent. On this reading, both negation and the indefinite component scope below the modal. This is correctly predicted to be possible for Mod>Neg modals such as *must / ought to / should*.

(33) a. There must be no doctor present during the interrogations.
       'It is required that no doctors be present during the interrogations.'
    b. There should / ought to be no doctor present during the interrogations.
       'It is recommended that no doctors be present during the interrogations.'

3.2 Scope Diminishment of the Indefinite Component 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 footnote 6), as these predicates scope under sentential negation.[9] We have already shown that in sentences such as (34a–b), 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.

(35) De re: *Neg > ∃ > ECM verb*
    There is no specific butler who was shown / demonstrated / proven to be guilty

(36) *Split: Neg > ECM verb > ∃*
    It was not shown / demonstrated / proven that there is a guilty butler

To show 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 four 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 shown / demonstrated / proven to be guilty, but the murderer is definitely a butler.

To isolate the split reading, we exclude the *de re* reading via a contradiction in content. Here, we turn to predicates that future-shift their complements, such as *is expected* and *is likely*, since these make it possible to exclude *de re* readings when the embedded clause contains a verb of creation.[10] If at the time of the utterance the cheetahs referred to in (39) haven't yet been born,

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[9] It 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 (2005, 2007) 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 that permit split but not neg-raising (*show*, *demonstrate*, *prove*), and it is not necessary because the inference goes through just as well in contexts in which NegDP is interpreted *de re*.

[10] We 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 neg-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.

they can't be presupposed to exist, and *de re* interpretation is excluded. To the extent that the sentences in (39) make any sense, it could only be on their split readings (von Fintel 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, we now ask whether this form of scope diminishment is delivered by A-reconstruction. The answer seems to be positive. We have shown, 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 contexts, consider the contrast between (40a) and (40b). To force the neg-split reading, we exclude *de re* interpretation via a contradiction in content: books that 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 violate Principle C, neg-split is degraded. This suggests that scope diminishment of the indefinite component in neg-split is produced by A-reconstruction of the indefinite.[11]

(40) a. No new book about him$_1$ is expected by Nixon$_1$ to be written next year.
         'Nixon doesn't expect any new book about him to be written next year.'
     b. #No new book about Nixon$_1$ is expected by him$_1$ 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 when NegDPs are involved. Lasnik's narrow claim, then, reduces to the observation that the negative part of a subject NegDP does not reconstruct. But why not?

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[11] Ideally, we would expand the discussion to include all the raising predicates on our list, but space considerations preclude 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 Fintel and Iatridou 2003:194n27.

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: (1) NegDP is a negative quantifier, and the existence of neg-split readings follows from the semantics of NegDP (Geurts 1996, de Swart 2000). (2) NegDP corresponds at LF to two independent constituents: a negation and an indefinite DP (Klima 1964, Jacobs 1980, Ladusaw 1992, Rullmann 1995, Potts 2002, Zeijlstra and Penka 2005, Penka 2007, Zeijlstra 2007a). 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.[12] For the semantic camp, NegDP is a generalized quantifier, and as such it is interpreted like any other nonnegative quantifier. In particular, *de re* readings and split readings are equally delivered by QR (Quantifier Raising). 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 the negative and the indefinite ingredient of a NegDP may scope independently. 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) 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* interpretation of NegDPs is not readily available with these predicates. This leaves us with QR of NegDP for the class of Neg>Mod modals. This scope pattern is derived directly on the decomposition approach since NegDP contains sentential negation. Therefore, the evidence that QR is responsible for *de re* interpretation 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

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[12] Strictly speaking, Zeijlstra's and Penka's proposals do not involve (de)composition. For them, a NegDP is a plain indefinite, and the negative interpretation is given by a covert negative operator that 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.

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 as sentential negation, 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 representation for NegDP on this conception of QR is virtually indistinguishable from the LF representation on a decomposition approach (see especially Zeijlstra 2004, Zeijlstra and Penka 2005, Penka 2007), since for these approaches too, NegDP qua indefinite scopes in the position of a covert negative operator. As far as the LF representation 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 to this point, 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 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 scope interactions between NegDP and the modal are irrelevant.[13] Our observations in this section and in section 5.2 are about those English speakers for whom (41a–e) 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 who do accept object NegDPs, and all speakers of German and Dutch, 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.

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[13] We 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 also happens to be negative.

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

(42) *Generalization B*

The scope of (the negative component 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 also scope above (the negative component of) an object NegDP.
   b. When they scope below sentential negation, they also scope below (the negative component of) an object NegDP.

We now proceed to check whether Generalization B does hold.[14] The following sentences compare Mod>Neg modals and Neg>Mod modals in sentences with object NegDPs:

(43) *Mod>Neg modals*

You must do no homework tonight.
   a. You must skip homework tonight   (Mod>Neg)
   b. It is not required that you do homework tonight   (Neg>Mod)

(44) *Neg>Mod modals*

You have to / need to do no homework tonight.
   a. You must skip homework tonight   (Mod>Neg)
   b. It is not required that you do homework tonight   (Neg>Mod)

An ''absolute'' verification of Generalization B would mean that sentence (43) has only the reading in (43a), while sentence (44) has only the reading in (44b). But this is not exactly what we find. The prediction with respect to Mod>Neg modals is verified. That is, (43) has only the reading in (43a). The facts surrounding Neg>Mod modals are more complicated, however. Reading (44b) holds only for a subset of English speakers who accept object NegDPs. These speakers also accept reading (44a). In addition, there is a subset of speakers who accept only reading (44a). We return to these complications in section 5.2 and show that with the addition of independently motivated locality constraints, they do not counterexemplify Generalization B.

Generalization B seems to hold more straightforwardly in German and Dutch than in English. Crucially, German and Dutch speakers permit reading (44b). Dutch and German each have a modal that behaves like *have to* in being Neg>Mod. As Iatridou and Zeijlstra (2009) show, the negative part of the object NegDP can scope above this modal. Alongside this modal, there is another modal expressing universal force that, similar to NPIs, necessarily scopes below negation. As expected, the latter modal yields only Neg>Mod readings for object NegDPs. (45a–b) illustrate Generalization B with German *müssen* and *brauchen*, respectively.

(45) a. Er muss keine Hausarbeiten machen.   (Neg>Mod)
       he has.to no   homework   do   (optionally)
       'There is no homework that he has to do.'
       'It is not the case that he has to do homework.'

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[14] We leave open whether object NegDPs with Neg>Mod modals produce both *de re* and *de dicto* readings.

    b. Er braucht   keine Hausarbeiten (zu) machen.   (Neg>Mod)
       he NPI-modal no   homework   (to) do   (obligatorily)
       'There is no homework that he has to do.'
       'It is not the case that he has to do homework.'

We return to the caveats with respect to Generalization B in English in section 5.2.

     The introduction of object NegDPs, and in particular the similarity of their scope behavior to that of subject NegDPs (per choice of modal), leads to the conclusion that the negative component in NegDP is interpreted in the same manner within the clause, regardless of whether it is the negative component of a subject or an object. With Neg>Mod modals, the subject or object scopes above the modal, and with Mod>Neg modals, 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 surface position, and the lines, accordingly, indicate scope of the negative ingredient of NegDP, not movement.[15]

(46) *Neg>Mod modals*
    Subject$_{Neg}$ Neg   Mod   Object$_{Neg}$

(47) *Mod>Neg modals*
    Subject$_{Neg}$ Mod   Neg   Object$_{Neg}$

Several studies have proposed that clauses contain a scope position, which some call *NegP*, dedicated to the interpretation of negation (see, e.g., Pollock 1989, Laka 1990, Zanuttini 1997, Van Kemenade 1998, Haegeman 2002). Others claim that there are multiple positions in which negation can be semantically interpreted (e.g., Schwartz and Bhatt 2006, Penka 2007). We remain agnostic about whether there is one position for negation, or more than one. We also remain agnostic about whether the negation that surfaces overtly (in, say, *cannot*) is in fact semantic negation, or whether it merely marks the presence of a covert negation operator, as well as about the concomitant questions that come up in contexts of negative concord (Penka and von Stechow 2001, Zeijlstra 2004). All that matters for our purposes is that the negative component of NegDPs has the same semantic and syntactic behavior as sentential negation. In what follows, reference to *Neg* or *the position of Neg* is for the sake of convenience and should not be taken to indicate a choice between these possibilities.

5 Potential Counterexamples and What We Can Learn from Them

There are a number of modal contexts that 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

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[15] However, see Kayne 1998 for a reinterpretation 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.

Table 4
Deontic modals with subject and object NegDP

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$_{Neg}$

over the modal, contra Generalization A. Similarly, when the modal is a Neg>Mod modal, an object NegDP may scope below the modal, contra Generalization B. Table 4 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 that are not covered by Generalizations A and B.

We address the grey cells in turn. We explain why the first grey cell may exist without compromising the validity of Generalization A. We then show that the second is due to locality considerations that 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 that the modal be c-commanded by negation at LF keeps the negation high.[16] 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 does not negate the entire sentence, but focuses on a particular element, in this case the modal.

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[16] This reasoning applies only to the negative ingredient of the NegDP. We leave open whether the split reading is available here and if not, why.

Regardless of the ultimate analysis of negation in (48b), however, the special c-command require-ment 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.[17] 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 five books.
     b. B: #He MUST not read five books, but he is encouraged to do so.

Have to and *need to* can obviously undergo association with focus with no accompanying effects, since they are Neg>Mod modals to begin with, as shown in (52b).

(52) a. A: Everybody has to read five articles on the topic.
     b. B: Nobody HAS TO / NEEDS TO read five articles on the topic, but they are encouraged to do so.

These modals can also be focused by sentential negation (though without a truth-conditional effect), since, in contrast to *must*, they are preceded and c-commanded by sentential negation at S-Structure, as shown in (53b).

(53) a. A: He has to / needs to read five books.
     b. B: He does not HAVE TO / NEED TO read five books, but he is encouraged to do so.

We also predict a difference between English *must* / *should* and the corresponding Mod>Neg modals in languages where sentential negation precedes the modal, since in these languages the c-command requirement imposed by focus is met at S-Structure. Examples (54a–d) establish that in Spanish and Greek, *debere* / *prepi* 'must' is a Mod>Neg modal, in contrast to *tenere* / *chriazete*. Mod>Neg *debere* / *prepi* is preceded by sentential negation, and, as predicted, this modal can be focused by negation. Examples (55a–d) illustrate the discourse conditions under which *debere* / *prepi* can be focused by sentential negation.

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[17] A reviewer astutely points out that this prediction depends on the particular implementation of decomposition. If, for example, NegDP composes at PF, and at S-Structure negation is separate from and higher than the modal, we might expect focus effects with object NegDPs. See the appendix for possible ways to implement decomposition.

(54) *Spanish*

   a. No debe comer. (Mod>Neg)

      not must eat

      'He must not eat.'

   b. No tiene que comer. (Neg>Mod)

      not has to   eat

      'He does not have to eat.'

  Greek

   c. Dhen prepi na figi. (Mod>Neg)

      not   must NA leave

      'He must not leave.'

   d. Dhen chriazete na figi. (Neg>Mod)

      not   need   NA leave

      'He does not need to leave.'

(55) *Spanish*

   a. A: Debe leer cinco libros.

        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.'

  Greek

   c. A: Prepi na dhiavasi pende vivlia.

        must NA 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 NA 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.'

We would finally like to note that 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 possible for an object NegDP to scope under a Neg>Mod deontic modal. In fact, for several English speakers we consulted, this is the only

reading that object NegDPs receive, including Neg>Mod modals.[18] Consider the following sentences:

(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 scope interpretations—namely, Mod>Neg—and both may be used to describe a situation in which there is an obligation to remain toyless.[19] Given Generalizations A and B, this is surprising since the two classes of modals have yielded different scope interpretations in the constructions we have discussed so far. If we combine this with (44), where Neg>Mod was also available for the modals in (56a), we can conclude that (non-NPI) Neg>Mod modals with a NegDP in object position may yield ambiguity.

    The analysis that we propose to account for the Mod>Neg reading starts out from the assumption that 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; and 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) (= (57a)), with neg-split of the object NegDP, and (56a) (= (57b)), where the entire NegDP is interpreted below the modal, 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

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[18] In 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.

[19] Not all Neg>Mod modals have the Mod>Neg reading with object NegDPs. There are NPI modals such as English *need* and German *brauchen* 'must'. Iatridou and Zeijlstra (2009) show that this reading is not possible with NPI *brauchen*, as this modal requires negation to be interpreted over it.

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

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) and (58b) 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 overgenerate nonexistent readings such as *de re* readings for subject NegDPs with Mod>Neg 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 that take a clausal complement. Only in (58b) is negation within the clause that 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. Negation must also be interpreted within the clause in which it occurs. This holds for sentential negation and NegDPs alike, suggesting a (finite) 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

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[20] David Pesetsky (pers. comm.) 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 will be interpreted in situ, producing the Mod>NegDP readings of (57b). However, *no toys* does not have to be interpreted as *zero toys* in order to scope under the modal. Zeijlstra (2007b) shows that *zero DPs* do not license NPIs, as can also be seen in (i). The acceptability of (ii) shows that *no toys* 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.

[21] Noam Chomsky (pers. comm.) 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 than the modal. On this scenario, it is phases, not clauses and scope positions for negation, that determine the domain in which negation is interpreted.

[22] One 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 NEG position of the embedded clause because it could not have raised from an embedded clause containing negation; negation blocks restructuring (Sportiche 2005).

The idea that restructuring might be involved in the reading in (57a) is supported by a number of additional considerations. First, none of the German and Dutch speakers we have consulted had difficulty with this reading, and both of these languages are known to make productive use of restructuring (e.g., Wurmbrand 1999). Second, as Richard Larson (pers. comm.) points out, our account predicts that (57a) will not be possible when the functional material in the embedded infinitival is increased—a factor that 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)

Further evidence that restructuring is involved for negation of object NegDPs to scope over the modal is provided by one of our anonymous reviewers. The reviewer points out that in German, optionally restructuring predicates allow the negative ingredient of the object NegDP to scope above the modal or below it. However, when restructuring is blocked, by extraposition of the infinitive, only the narrow scope reading is available.

(61) a. . . . weil   er nichts   zu sagen wagte.
              because he nothing to say   dared
         'He dared to say nothing.'
         'He didn't dare to say anything.'
      b. . . . weil   er wagte nichts   zu sagen.
              because he dared nothing to say
         'He dared to say nothing.'

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 will be 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, an 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 Generalization B, then, follows from general locality restrictions.

5.3 *NegDP* + particular

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

(62) 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 (62b) 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 (nonspecific) book

about Nixon. The acceptability of (62a), however, implies that the DP *no particular book about Nixon* can scope over the Mod>Neg modal *must* and can have the reading in (63).

(63) 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. Of course, this wide scope behavior is not unique to NegDPs since generally, DPs with *particular* are interpreted with wide scope.

(64) a. Every student read a particular book.   (only ∃>∀)
      b. Five students read a particular book.   (only ∃>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 here about the factor(s) that 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 (Homer 2009, Iatridou and Zeijlstra 2009, 2010), the first hypothesis to explore would be that when a NegDP that 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 (62a) 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]

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[23] A related problem arises in contexts of extraposition, as discussed by Fox and Nissenbaum (1999). 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 Fox and Nissenbaum, (ib) is equivalent to *There is no assignment that is required by his math teacher that John must hand in in order to stay in school*. Following Williams (1974), who argues that extraposition extends the scope of the object at least as high as the extraposed material, Fox and Nissenbaum show that the NegDP is interpreted in the position of the extraposed clause. It is unclear, however, that Williams's 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 discussing *particular*, if one takes Mod>Neg scope to follow from the PPI status of *must* (Homer 2009, Iatridou and Zeijlstra 2009), then, once Williams's 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*–phrase.

6 Possible Derivations

We have shown numerous cases in which NegDP as a whole appears to be scoping below its superficial position. As we have argued, these scope reversal effects are due to mechanisms that have little to do with A-reconstruction. Three related conclusions emerge from this study: (a) The scope position of the negative ingredient of 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 among (a), (b), and (c)? Conclusion (a) may explain conclusion (b). 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-reconstruction (in toto) because the negative ingredient within NegDP cannot lower (Horn 1989, Penka and von Stechow 2001, Zeijlstra 2004, Penka 2007). This is consistent with conclusion (c), that the nonnegative part of the NegDP can undergo A-reconstruction.

For this explanation for the absence of negative reconstruction to be complete, we need to tie up several loose ends. In particular, we need to flesh out the details of the syntactic derivation of sentences with derived subject NegDPs, to which we turn below. 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. This is discussed in the appendix.

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. Therefore, we will focus 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. Space limitations prevent us from presenting all possible combinations in detail and comparing them, but see the appendix for some discussion.

We have suggested that decomposition accounts may have an easier time dealing with the facts discussed here than semantic accounts. The observation that NegDPs scope in the position of sentential negation is straightforwardly explained if NegDP is in some sense directly 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 has to leave* could in principle have several possible derivations. In (65a), negation is based-generated in the matrix clause and the indefinite component is the subject of the embedded clause; raising the indefinite to the matrix clause brings it into the immediate domain of the negative component, as shown in (65b).[24]

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[24] We do not take a position on the placement of *to* and gloss it as part of the matrix predicate for convenience only.

(65) a. Neg has-to ∃ student leave
  b. Neg [∃ student]$_1$ has-to t_1 leave
  c. No student has to leave

Since only the indefinite component raises, only the indefinite component is expected to reconstruct, and since negation is located in the matrix clause, we derive the partial reconstruction effect in a relatively straightforward way. However, (65) 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 component and the two would raise as a constituent, as illustrated in (66).

(66) a. has-to Neg ∃ student leave
  b. has-to No student leave
  c. No student$_1$ has to t_1 leave

Since the entire NegDP has raised from the embedded position, the entire NegDP would be expected to reconstruct, contrary to fact. On another possible scenario, illustrated in (67), the embedded negation remains in the embedded clause and only the indefinite part raises.

(67) a. has-to Neg ∃ student leave
  b. [∃ student]$_1$ has-to Neg t_1 leave

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.[25]

  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 (66) and (67).

  It might be possible to exclude (67) immediately 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 it 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) (Rullmann 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; a second in which it is interpreted below the predicate; and a third, the split reading, in which negation scopes above the predicate and the indefinite component 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 that blocks (or the factors that block) the indefinite from moving from under the scope of the negative component will also exclude (67).

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[25] We exclude, a priori, the derivation in which both negation and the indefinite component start out in the matrix clause, since the embedded predicate's external θ-role would go unassigned.

How can we exclude the derivation in (66)? For this, we adopt a proposal made by Sportiche (2005). Sportiche 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 (68)—owing, again, to the presence of embedded negation. Note in particular the formal similarity between the ungrammatical (68b) (Sportiche 2005:(35)) and the impossible derivation of (66).

(68) 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 whenever 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 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 (65). This part of the proposal will allow a quantified DP, such as *every doctor* in (69b), to occur as a derived subject even when restructuring is blocked, as it is in (69b), since movement of the NP residue *doctor* is still possible. But because the entire DP *every doctor* could not have raised, it follows that it also cannot reconstruct, explaining the difference in scope possibilities of the universal and negation in (69a–b) (from Chomsky 1995: 327).

(69) a. Every doctor is not here.
         Can mean: Every doctor is not here
         Can mean: Not every doctor is here
     b. Every doctor seems not to be here.
         Can mean: 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 (65) but exclude the one in (66), repeated here:

(70) a. Neg has-to ∃ student leave
     b. Neg [∃ student]$_1$ has-to t_1 leave
     c. No student$_1$ has to t_1 leave

(71) a. has-to Neg ∃ student leave
     b. has-to No student leave
     c. No student$_1$ has to t_1 leave

In (70), there is no negation in the lower clause. Therefore, the existential can move out and reconstruct, deriving the neg-split reading. In (71), in contrast, the negative component of the NegDP starts out in the lower clause, so it blocks restructuring. As a result, NegDP cannot move out of the embedded clause. It is also not possible to move the indefinite part only, as we noted in the context of (67). Therefore, if we incorporate Sportiche's (2005) correlation among negation, restructuring, and reconstruction, it follows that when a NegDP has undergone apparent A-movement, its negative component necessarily started out in the matrix clause. In the appendix, we discuss some theories of scope diminishment, some proposals for decomposition, and their compatibility with the patterns presented above.

7 Conclusions

We argued that even though scope reversals involving raising predicates and NegDP subjects are observed, these scope reversals are not the result of A-reconstruction of the NegDP. The relation between a NegDP and the scopal predicate it is a subject of is 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, producing 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 Sportiche's (2005) proposal that negation blocks restructuring and all DP-movement from the embedded clause. This entails that in raising constructions with a derived subject NegDP, the negation is merged in the matrix clause, with subsequent A-movement of the indefinite part, subject to reconstruction.

Appendix: How to Reconstruct and How to Decompose?

A.1 Some Theories of Scope Diminishment

We limit ourselves to three syntactic accounts of scope diminishment in A-chains: Quantifier Lowering (QL; May 1985, Chomsky 1995), the copy theory of movement (see Fox 2000, where it is proposed that the copy theory accounts for A-reconstruction), and reconstruction as PF movement (Sauerland and Elbourne 2002).[26]

Chomsky (1995) suggests that when scope diminishment effects in A-chains are observed, as in (1c), they are due to QL. On the QL approach, a quantifier is lowered to an Ā-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, NegDPs also cannot undergo QR (example adapted from von Fintel and Iatridou 2003).

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

(72) 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 (70), negation starts out in the matrix clause and only the indefinite component raises; the indefinite may well be lowered by QL in (70). For (71), however, QL would need to be supplemented with a principle that excludes this derivation. For example, if (71) 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 (70) 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 (71) with negation in the embedded clause. If (71) is excluded along the lines discussed above, the problem is neutralized.

The PF movement approach to scope diminishment developed by Sauerland and Elbourne (2002) makes stronger predictions about what can and cannot reconstruct. The question of scope diminishment reduces to the question of which branch of the derivation movement occurs on. 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 with 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 Sauerland and Elbourne's approach does not predict the possibility that this option is excluded. Sauerland and Elbourne argue that within the class of weak DPs, DPs that cannot delay movement to PF and must move prior to PF are those DPs that 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 Sauerland and Elbourne 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, none of these theories provides a ready-made solution to the problem of lack of scope diminishment of NegDPs. Once (70) is independently ruled out, all three theories can derive the patterns of NegDP scope diminishment.

A.2 NegDP Decomposition

In section 6 we introduced the correlation among negation, restructuring, and reconstruction proposed by Sportiche (2005), and in appendix 1 we 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 component are two syntactically independent constituents, which can scope across a third scopal element. It is also clear 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 (α-*decomposition*, in (73)). Alternatively, the two components could enter the derivation as separate constituents (i.e., ''decomposed''), remain separate through LF, and amalgamate at PF (β-*decomposition*, in (74)).

(73) Merge NegDP   (α-decomposition)
    PF: NegDP (German *kein*, Dutch *geen*, English *no*)
    LF: Neg ∃

(74) Merge Neg ∃   (β-decomposition)
    PF: NegDP (German *kein*, Dutch *geen*, English *no*)
    LF: Neg ∃

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

Since we found that Sportiche's (2005) 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 (75a) can serve as input to NegDP derived subjects.

(75) a. Neg has-to [∃ student leave]
    b. has-to [Neg ∃ student leave]

The theory of decomposition compatible with Sportiche's generalization is therefore one in which negation and the indefinite component 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. Therefore, β-decomposition seems to be the theory most compatible with excluding (75b) via Sportiche's generalization. Proposals with this property include those made by Klima (1964) and Rullmann (1995).[27]

Let us assume that movement of NegDP must take place in overt syntax and before PF. Within a single Spell-Out model with β-decomposition, (75b) 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 (2005) generalization is no longer necessary, since (75b) is independently excluded by the logic behind the order of operations involved. However, the problem 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, contrary to fact. It therefore seems necessary to incorporate Sportiche's generalization to block A-movement of negation at PF.

Recall that what forced us to choose β-decomposition was adopting the proposal in Sportiche 2005. If we don't do that, there might in fact be a way to save α-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 would not follow on the copy theory of movement, since there would be a copy of the entire NegDP in the embedded clause. It could, however, be made to follow if QL were adopted. QL would lower only the indefinite component; it 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 β-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 noted earlier, our goal is to show that it is possible to exclude (75b) in a relatively principled way, rather than to argue in favor of a particular approach.

[27] While neither uses the term *PF* to describe where composition takes place, the prose implies that that is what was intended. For example, Rullmann (1995:196) says, ''Incorporatie van *niet* vindt plaats (of althans, kan plaatsvinden) op een betrekkelijk oppervlakkig niveau van representatie'' ('Incorporation of *niet* [Dutch sentential negation] takes place (or can take place) at a relatively superficial level of representation').

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 Szabolcsi, 71–108. Dordrecht: Kluwer.

Bhatt, Rajesh. 1997. Obligation and possession. In *Papers from the UPenn/MIT Roundtable on Argument Structure and Aspect*, ed. by Heidi Harley, 21–40. MIT Working Papers in Linguistics 32. Cambridge, MA: MIT, MIT Working Papers in Linguistics.

Boeckx, Cedric. 2001. Scope reconstruction and A-movement. *Natural Language and Linguistic Theory* 19: 503–548.

Butler, Jonny. 2003. A minimalist treatment of modality. *Lingua* 113:967–996.

Chemla, Emmanuel. 2009. Universal implicatures and free choice effects: Experimental data. *Semantics and Pragmatics* 2(2):1–33.

Chomsky, Noam. 1995. *The Minimalist Program.* Cambridge, MA: MIT Press.

Christensen, Kirsti Koch. 1986. Norwegian *ingen*: A case of post-syntactic lexicalization. In *Scandinavian syntax*, ed. by Östen 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, Frits Beukema, and Wim van der Wurff, 133–163. Amsterdam: John Benjamins.

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

Fillmore, Charles. 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 on Formal Linguistics*, ed. by Sonya Bird, Andrew Carnie, Jason D. Haugen, and Peter Norquest, 132–144. Somerville, MA: Cascadilla Press.

Gajewski, Jon. 2005. Neg-raising: Presupposition and polarity. Doctoral dissertation, MIT, Cambridge, MA.

Gajewski, Jon. 2007. Neg-raising and polarity. *Linguistics and Philosophy* 30:289–328.

Geurts, Bart. 1996. On *no. Journal of Semantics* 13:67–86.

Haegeman, Liliane. 2002. West Flemish negation and the derivation of SOV order in West Germanic. *Nordic Journal of Linguistics* 25:154–189.

Heim, Irene. 1983. On the projection problem for presuppositions. In *Proceedings of the 2nd West Coast Conference on Formal Linguistics*, ed. by Michael Barlow, Daniel P. Flickinger, and Michael T. Wescoat, 114–125. Stanford, CA: Stanford University, Stanford Linguistics Association.

Homer, Vincent. 2009. Epistemic modals: High, ma non troppo. Paper presented at NELS 40, MIT, November 2009.

Horn, Laurence. 1978. Remarks on neg-raising. In *Syntax and semantics 9: Pragmatics*, ed. by Peter Cole, 129–220. New York: Academic Press.

Horn, Laurence. 1989. *A natural history of negation.* Chicago: University of Chicago 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 Israel Association of Theoretical Linguistics (IATL 25), Ben Gurion University, October 2009.

Iatridou, Sabine, and Hedde Zeijlstra. 2010. Modals, negation, and polarity. Ms., MIT, Cambridge, MA, and University of Amsterdam. Presented at GLOW Asia 8, Beijing, August 2010; and at Sinn und Bedeutung 15, Universität des Saarlandes, Saarbrucken, September 2010.

Israel, Michael. 2011. *The grammar of polarity: Pragmatics, sensitivity, and the logic of scales.* Cambridge: Cambridge University Press.

Jackendoff, Ray. 1972. *Semantic interpretation in generative grammar.* Cambridge, MA: MIT Press.

Jacobs, Joachim. 1980. Lexical decomposition in Montague Grammar. *Theoretical Linguistics* 7:121–136.

Johnson, Kyle, and Satoshi Tomioka. 1998. 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.

Kayne, Richard S. 1998. Overt and covert movement. *Syntax* 1:128–191.

Kemenade, Ans van. 1998. Sentential negation and clause structure in Old English. In *Negation in the history of English*, ed. by Ingrid Tieken-Boon, Gunnel Tottie, and Wim van der Wurff, 147–166. Berlin: Mouton de Gruyter.

Klima, Edward. 1964. Negation in English. In *The structure of language*, ed. by Jerry Fodor and Jerry Katz, 246–323. Englewood Cliffs, NJ: Prentice-Hall.

Kratzer, Angelika. 1995. Stage-level and individual-level predicates. In *The generic book*, ed. by Gregory N. Carlson and Francis Jeffry Pelletier, 125–175. Chicago: University of Chicago Press.

Ladusaw, William. 1992. Expressing negation. In *Proceedings of the Second Conference on Semantics and Linguistic Theory*, ed. by Chris Barker and David Dowty, 237–259. Columbus: Ohio State University, Department of Linguistics.

Laka, Itziar. 1990. Negation in syntax: On the nature of functional categories and projections. Doctoral dissertation, MIT, Cambridge, MA.

Lakoff, Robin. 1969. A syntactic argument for negative transportation. In *Papers from the 5th Regional Meeting of the Chicago Linguistic Society*, ed. by Robert Binnick, Alice Davison, Georgia M. Green, and Jerry L. Morgan, 149–157. Chicago: University of Chicago, Chicago Linguistic Society.

Larson, Richard, Marcel den Dikken, and 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 David Epstein and Norbert Hornstein, 189–215. Cambridge, MA: MIT Press.

Lechner, Winfried. 1998. Two kinds of reconstruction. *Studia Linguistica* 52:276–310.

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.

Penka, Doris, and Arnim von Stechow. 2001. Negative indefinita unter Modalverben. In *Modalität und Modalverben im Deutschen*, ed. by Reimar Müller and Marga Reis, 263–286. Hamburg: Helmut Buske Verlag.

Pollock, Jean-Yves. 1989. Verb movement, Universal Grammar, and the structure of IP. *Linguistic Inquiry* 20:365–424.

Potts, Chris. 2000. When even *no*'s neg is splitsville. In *Jorge Hankamer webfest*, ed. by Sandy Chung, Jim McCloskey, and Nathan Sanders. Available at http://ling.ucsc.edu/Jorge/.

Potts, Chris. 2002. The syntax and semantics of *as*-parentheticals. *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. 1998. Problems for a semantic account of scope reconstruction. In *Reconstruction: Proceedings of the Tübingen Workshop*, ed. by Graham Katz, Shin-Sook Kim, and Heike Winhart, 127–153. 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 Marcel-Paul Schützenberger, Maurice Gross, and Morris Halle, 133–169. Mouton: The Hague.

Rullmann, Hotze. 1995. Geen einheid. *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 *Crosslinguistic 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.

Sportiche, Dominique. 2005. Division of labor between Merge and Move: Strict locality of selection and apparent reconstruction paradoxes. Available at http://ling.auf.net/lingbuzz.

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

Szabolcsi, Anna, ed. 1997. *Ways of scope taking*. Dordrecht: Kluwer.

Williams, Edwin. 1974. Rule ordering in syntax. Doctoral dissertation, MIT, Cambridge, MA.

Wurmbrand, Susanne. 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. 2004. Sentential negation and negative concord. Doctoral dissertation, University of Amsterdam.

Zeijlstra, Hedde. 2007a. On the lexical status of negative indefinites in Dutch and German. Available at http://ling.auf.net/lingbuzz.

Zeijlstra, Hedde. 2007b. Zero licensers. *Snippets* 16:21–22. Available at http://www.ledonline.it/snippets/.

Zeijlstra, Hedde, and Doris Penka. 2005. Negative indefinites in Dutch and German. Ms., Universität Tübingen.

(Iatridou)
Department of Linguistics and Philosophy
32-D808
MIT
77 Massachusetts Avenue
Cambridge, MA 02139

iatridou@mit.edu

(Sichel)
Linguistics Department
Faculty of Humanities
The Hebrew University of Jerusalem
Mount Scopus, Jerusalem, 91905
Israel

isichel@mscc.huji.ac.il