INTERPRETIVE EFFECTS OF HEAD MOVEMENT[1]

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1. INTRODUCTION

Traditionally, the taxonomy of movement distinguishes between head movement (HM), which consists in dislocation of terminals, and phrasal movement, which targets categories recursively built from terminals. Although the higher degree of abstractness underlying the concept of constituency makes HM the unmarked option, which should be given ontological privilege over phrasal movement, various recent trends in syntactic research converge in pursuing the opposite goal of eliminating HM from core syntax. Sceptics of HM have considered at least three different alternative options. While some researchers relocate HM into the phonological component (Boeckx and Stjepanovic 2001; Chomsky 2000, 2001; Harley 2004a), others derive its effects by means of iterative applications of phrasal movement (*remnant movement*; Hinterhölzl 1997; Koopman and Szabolcsi 2000; Mahajan 2000; Müller 2004; Nilsen 2003). Still others make HM out to be epiphenomenal (Brody 2000).

The present project is part of a broader strategic move against such alternative conceptions of HM.[2] Specifically, the study aims at recruiting arguments for the standard view that HM consists in syntactic displacement of terminals by investigating phenomena which have so far only received sporadic attention in the literature: the interaction between HM and interpretation. This domain is of particular interest inasmuch as a demonstration that HM can affect interpretation, or can be affected by principles of interpretation, as expressed by the SAHM-conjecture in (1), generates a strong argument for computing HM in syntax, and not at PF.

(1) **SAHM-CONJECTURE:** There are instances of ***s***emantically ***a***ctive ***h***ead ***m***ovement.

More concretely, the combination of (1) and the assumption implicit in the current model that PF-operations do not influence LF representations entails (by contraposition[3]) that HM has to apply in the stem of the derivation. In addition, such a finding directly implies that HM cannot be epiphenomenal.

In what follows, I will outline a chain of evidence embedded in a discussion of scope splitting phenomena in English that will support the conclusion that HM indeed affects

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[2]For further discussion of arguments pro and conta HM see Fanselow (2002); Matushansky (to appear); Riemsdijk (1998); Roberts (2004); Zwart (2001), among others.

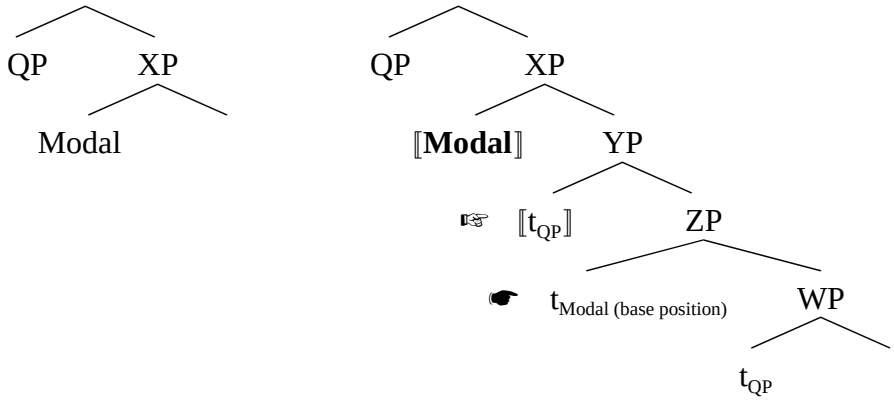
[3]The argument by contraposition: If α is a PF-operation, then α does not have an impact on interpretation. α has an impact on interpretation. Hence, α is not a PF-operation.

interpretation.[4] Section 2 outlines the essence of the argument for SAHM and introduces the core data. In section 3, I present background assumptions concerning the LF position of nominal quantifiers and the syntax of modality. Section 4 then assembles the argument, while section 5 expands on independent support for the specific analysis to be proposed. A second group of arguments for SHAM will be presented in section 6. Finally, section 7 addresses a possible solution to a long-standing problem for HM related to cyclicity.

2. THE ARGUMENT

In the following sections, I explicate an argument for the view that HM can have an effect on semantic interpretation. The argument is structured as follows: In certain contexts involving a modal verb, schematized in (2)a, the modal can take scope above a clause-mate quantifier, resulting in inverted scope order, as in (2)b.[5]

(2) a. **SYNTAX:** b. **INTERPRETATION:**



The position in which QP is interpreted (☞ in (2)b) can be shown to be located above the position in which the modal is base generated (☛ in (2)b). It follows that the modal has to be interpreted in a derived location. This result is directly compatible with the orthodox picture of HM, but contradicts the assumption that HM applies at PF. Only the former view predicts that HM operations have the potential of shifting the scope of the moved category by overt displacement, thereby generating new interpretations. Furthermore, the fact that such scope shifting applications of HM have not been identified before (an alleged generalization which has been used to motivate the PF-analysis) now turns out to be merely accidental.

Empirically, the argument is centered around modal constructions exemplified in (3) to (5) below. The most prominent reading of these sentences denies the compatibility of a universal proposition with a circumstantial modal background. For instance, (3) means that it is not possible that every pearl is above average size, a proposition which is analytically true given the logical impossibility of mapping all pearls to a degree above the mean. This reading correlates

[4]For interactions in the other direction see Lechner (2001, 2004: chap. 3.4).

[5]Denotation brackets ('⟦' and '⟧') signal the position in which an expression is interpreted.

with the scope order $\neg\Diamond \succ \forall$, in which the negation is separated from its surface host, the quantifier *every* (on the constituency of negation and *every NP* see section 4.2).

(3) Not every pearl can be above average size. $\neg\Diamond \succ \forall$
"It is not possible, that every pearl is above average size"
(Analytically true due to the definition of 'above average')

(4) Not everyone can be an orphan. $\neg\Diamond \succ \forall$ (André Gide)
"It is not possible, that everyone is an orphan"

(5) Not every boy can make the basketball team. $\neg\Diamond \succ \forall$
"It is not possible, that every boy makes the basketball team"

(3) to (5) represent instances of the so-called scope splitting construction. In the literature[6], scope splitting (or 'negative split') has been extensively discussed on the basis of examples such as (6), which differ from (3) to (5) in that negation is combined with a quantifier that carries existential and not universal force. (The negative QP in (6) is also construed as the object in order to avoid further complications regarding subject reconstruction; see section 3.1 for details.)

(6) Sam can find no solution.$\neg\Diamond \succ \exists$
"It is not possible, that Sam finds a solution"

For reasons of concreteness, I will adopt the analysis of scope splitting formulated in von Stechow (1993) and Penka (2002),[7] according to which negative indefinites bear a syntactic feature [+neg] which has to be licensed in the immediate scope of a possibly abstract semantic negation (NOT). The morphologically negative NPs themselves are assigned the meaning of their contradictories (e.g. *solution* for *no solution* and *everyone* for *not everyone*, respectively):[8]

(7) a. $[\![$[*No NP*]$]\!]$ = $[\![$[NP]$]\!]$
b. $[\![$[*Not every NP*]$]\!]$ = $[\![$[*every* NP]$]\!]$

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[6]See Bech (1954/57: §80); von Fintel and Iatridou (2005); Heim (2000); Kratzer (1995); de Swart (2000); Penka (2002); Zeijlstra (2004) and references therein.

[7]See also Kratzer (1995: 144) and Penka and von Stechow (2001). Von Stechow and Geuder (1997: 19) credit Ede Zimmermann with the first explicit semantic analysis.

[8]One might also envision a potential alternative approach which translates negative NPs that bear [+neg] at LF as indefinites, but treats negative NPs without such a feature as negative quantifiers. There is evidence suggesting that [+neg] should not be retained at LF, though. Eliminating the [+neg] feature has e.g. the virtue of offering an account for vehicle change from *no solution* to *(a) solution* in (i):
(i) I NOT can find no solution$_{[+neg]}$ but Holly might ⌓. Johnson (2001a: 468; (107))
⌓ = find a solution/*find no solution
If the [+neg] feature in (i) is checked in syntax or at LF, the ellipsis identity conditions plausibly ensures that the silent object lacks [+neg], too, yielding the desired interpretation as a positive indefinite. Since abstract negation NOT always must cooccur with [+neg] (von Stechow 1993), NOT is not licensed in the ellipsis clause, excluding a negative interpretation. Finally, overt negation does not need to be accompanied by a lower [+neg], explaining why both conjuncts are read with negative polarity in (ii):
(ii) I can NOT find no solution$_{[+neg]}$ and neither can Holly ⌓.
⌓ = find a solution/*find no solution

Scope splitting is induced by configurations in which the abstract negation NOT is separated from the negative NP by another operator at LF. To exemplify, (6) can be parsed as in (8). In the LF (8)a, the feature [+neg] is licensed by the abstract clausal negative head NOT in SpecNegP. Since the modal intervenes between NOT and [+neg], interpreting (8)a consequently leads to the split scope order (8)b, in which the morphologically negative object is translated as an indefinite (Acc denotes the accessibility relation which collects the modal base):

(8) a. John $[_{\text{NegP}}$ NOT [can find [no solution]$_{[+\text{neg}]}$]]

b. $\lambda w \neg \exists w' \exists x[\text{Acc}(w)(w') \wedge \text{solution}(x)(w') \wedge \text{find}(x)(\text{John})(w')]$ $\quad \neg\Diamond \succ \exists$

As already mentioned, (3) to (5) essentially differ from the classic instances of splitting such as (6) in that the negation associates with a universal, and not with an indefinite. This particular contrast will turn out to be of specific relevance below, as universal QPs are subject to different, stricter conditions on where they can be interpreted in the tree (see section 3.1). Before proceeding to this point, it has to be demonstrated that the split reading of negated universals cannot be subsumed under the independently available *de re* interpretation ($\neg\forall \succ \Diamond$), though.

2.1. LOGICAL INDEPENDENCE

The split reading $\neg\Diamond \succ \forall$ can be clearly distinguished in its truth conditions from the surface scope *de re* interpretation $\neg\forall \succ \Diamond$. Consider for instance example (9):

(9) Not every lottery number can be drawn.

a. $\lambda w \neg \forall x[\text{lottery\_number}(x)(w) \rightarrow \exists w'[\text{Acc}(w)(w') \wedge \text{be\_drawn}(w')]]$ *de re*

b. $\lambda w \neg \exists w' \forall x[[\text{Acc}(w)(w') \wedge \text{lottery\_number}(x)(w')] \rightarrow \text{be\_drawn}(w')]$ split *de dicto*

The *de re* interpretation (9)a maintains that only a proper subset of all possible lottery numbers can ever be lucky numbers. The statement could e.g. be used to relate the finding that a lottery is rigged such that the machine which calculates the winning numbers never produces the number 7. The split reading (9)b, in which the universal is interpreted *de dicto*, on the other hand draws attention to the deplorable fact that the winning numbers are a proper (and usually small) subset of all lottery numbers. The logical independence of the latter is made visible by model (10), which fails to satisfy the *de re* interpretation (9)a (each lottery number in w_0 is a lucky number in one of the worlds), but verifies the split reading (9)b (there is no word in which all lottery numbers are lucky ones).

(10) *Model which satisfies split* de dicto *reading (9)b only :*

	a	b	c
w_0	●	○	○
w_1	○	●	○
w_2	○	○	●

For any $x \in D_e$ and $w \in D_w$,
'○' *x is a lottery number in w*
'●' *x is a lottery number in w and x is drawn at the lottery in w*

Crucially, given that the split reading does not logically entail the *de re* reading, the split reading

must be encoded separately in semantics.

Examples like (5), repeated below as (11), and model (12) can be used to demonstrate that the split interpretation is also logically independent from the *de dicto* reading.

(11) Not every boy can make the basketball team.

a. $\lambda w \neg \exists w' \forall x[[boy(x)(w') \wedge Acc(w)(w')] \rightarrow make\_the\_team(x)(w')]$ split *de dicto*
b. $\lambda w \exists w' \neg \forall x[[boy(x)(w') \wedge Acc(w)(w')] \rightarrow make\_the\_team(x)(w')]$ *de dicto*

In model (12), all the boys are on the team in w_0, falsifying the split reading (11)a (as well as the *de re* reading) false. Furthermore, model (12) satisfies the *de dicto* interpretation (11)b, because there are accessible alternative worlds (w_1 and w_2) in which not every boy is on the team. Consequently, the *de dicto* reading is logically independent from the split reading.

(12) *Model which satisfies* de re *reading (11)a only*

	a	b	c
w_0	●	●	●
w_1	○	●	●
w_2	●	○	●

For any $x \in D_e$ and $w \in D_w$,
'○' *x is a boy in w*
'●' *x is a boy in w and*
x is on the basketball team in w

Note on the side that (11) appears to lack the *de dicto* reading, the sentence cannot be used to describe a scenario such as (12).[9] This might be due to the general resistance of negative quantifiers to take scope below their surface position (see next section). A more detailed discussion of additional logically possible readings, in particular interpretations that arise from construing the quantifier restriction *de re*, yet within the scope of the modal, can be found in the appendix. The appendix also presents justification for basing the argument to be developed on the rather complex scope splitting construction with negated universals, instead of simpler alternatives with negative indefinites.

3. MAPPING SYNTAX TO INTERPRETATION

In this and the following section it will be demonstrated that mapping the split reading onto a syntactic structure has nontrivial consequences for the analysis of HM. There are two specific properties of the mapping procedure from syntax to interpretation which are of particular interest for present purposes, both of them involving empirical generalizations about the way in which movement interacts with interpretation. In section 3.1, I will comment on differences in the reconstruction behavior of different logical types of quantifiers. These findings will be used to set the lower structural bound for the interpretation of subjects and (by transitivity) categories

[9]This gap is not due to pragmatic reasons. The *de dicto* reading of (11) could e.g. be used as a qualification by a school which for the moment can accept all boys on the team, but guards against the possibility of a (future) shortage of funding, in case of which the team size would have to be reduced. Kayne (1988: fn. 25) makes a similar observation for (i), which, he notes, lacks a narrow scope reading.
(i) Not everybody is bound to be here.

that scope over subjects. Section 3.2 addresses the dissociation between the surface position and the base position of modals, presenting evidence for the view that modals are generated below the position in which they surface. According to this conception, the ordering of modals and other categories in the tree is derived by movement, and not by the availability of alternative insertion points for the modal or certain adverbs and negation. These results form the basis of the main argument for semantically active HM (SAHM) to be presented in section 4.

3.1. STRONG, NEGATIVE AND BASE CONSTRAINT

When quantified terms (QPs) surface in A-positions that do not correspond to their points of origin, the scope of these QPs can sometimes be reconstructed into a lower position. Although the exact mechanisms underlying 'scope diminishment' - borrowing a term from von Fintel and Iatridou (2004) - are poorly understood, there is an emerging consensus that the logical properties of the moved QP co-determine its ability to reconstruct. Three generalizations are central for present purposes. All of them apply to A-movement only. First, while indefinite subjects may take scope below raising predicates, illustrated by (19), strong quantifiers (in the sense of Milsark 1974) cannot be construed with scope below raising predicates, as shown by (13), and probably more clearly by (14) (Iatridou 2002; Lasnik 1999; Lechner 1996, 1998; Wurmbrand and Bobaljik 1999).

(13) a. Every critic seemed to like the movie. *de re/*de dicto*
b. It seemed that every critic liked the movie. *de dicto*

(14) a. Every movie which was promoted by a critic seemed to impress the jury. *de re/*de dicto*
b. It seemed that every movie which was promoted by a critic impressed the jury.

For (14)a to be true, the individuals promoting the movie must be actual critics in the evaluation world, whereas (14)b leaves open the option that these individuals only appeared to be critics - it could turn out that in fact, they were radical Christians. Provided that the absent *de dicto* interpretation of (14)a is contingent upon reconstruction of *every movie* along with the relative clause, it can be concluded that universals do not reconstruct below *seem.*[10] Further confirmation for the assumption that strong quantifiers resist reconstruction into the subordinate clause comes from contexts involving non-verbal raising predicates as in (15) (Lasnik 1998: 93). Sentence (15)a contradicts the laws of probability, while (15)b is evaluated as true in a situation with five events of tossing ($1/1^5 = 1/32 \approx 3\%$). Again, the absence of an equivalent reading for the raising construction (15)a indicates that strong QPs have only limited access to scope diminishment:

(15) a. Every coin is 3% likely to land heads. $\forall \succ$ *3% likely*/*$\forall \succ$ *3% likely*
b. It is 3% likely that every coin will land heads.

[10]It is immaterial that relative clauses do not *have* to reconstruct along with their host NPs (Lebeaux 1988). What matters is that if the host NP can reconstruct, the relative clause can do so, too.

A provisional version of the condition on strong NPs that was seen to be active in (13) to (15) can be formulated in terms of the Strong Constraint in (16):

(16) **STRONG CONSTRAINT (1ST VERSION)**
Strong QPs do not reconstruct below raising predicates.

The specifics of (16) still require a minor amendment, though. In particular, the same constraint which is responsible for prohibiting reconstruction in the raising-to-subject constructions (13) to (15) should presumably also operate in contexts in which raising arguably proceeds to an object position. Following Lasnik (1995), such environments are prominently exemplified by ECM-configurations like (17). As documented by (17)a, the ECM-subject has raised into the matrix sentence in overt syntax (but see Lasnik 2005 for a diverging view):

(17) I expected everyone not to be there. $\forall \succ \neg / \neg \succ \forall$

a. Syntax: I expected$_1$ [$_{XP}$ *everyone*$_2$ [$_{VP}$ t$_1$ [$_{NegP}$ not [$_{TP}$ t_2 T˚ to be ...]]]]
b. LF: I [$_{XP}$ ~~everyone~~ [$_{VP}$ expected [$_{NegP}$ not [$_{TP}$ *everybody* to be ...]]]] $\neg \succ \forall$

Still, the universal retains the ability to be construed within the scope of the negation. This finding is unexpected from the perspective of (16) inasmuch as in order to generate the inverse reading (17)b, the ECM subject would have to reconstruct across the raising predicate *expect*, which itself is restored into its base position at LF. Thus, the Strong Constraint in (16) is too restrictive as it rules out the inverse reading (17)b, and will therefore be revised as in (18):

(18) **STRONG CONSTRAINT (FINAL VERSION)**
A strong NP cannot reconstruct below T˚.

According to (18), reconstruction in (17)b is licit because the universal does not cross T˚. Thus, (18) tolerates limited applications of reconstruction as in (17), while the standard manifestations in (13) to (15) are not negatively affected by the changes in the revised version.

Next, negative quantifiers are widely believed to resist reconstruction, as e.g. demonstrated by the fact that the proposition expressed by (20) can only be understood *de re* (see von Fintel and Iatridou 2004; Iatridou 2002; Lasnik 1999; Wurmbrand and Bobaljik 1999, a.o.):

(19) a. A critic seemed to like the movie. *de re/de dicto*
b. It seemed that a critic liked the movie. *de dicto*

(20) a. No critic is certain[11] to like the movie. *de re/*de dicto*
b. It is certain that no critic likes the movie. *de dicto*

[11] *seem* treats clause-mate negation semantically as if it were part of the lower proposition ('Neg-raising'; (i)). Neg-raising is also attested with negative subjects, as in (ii) (from Kayne 1998: fn. 26):
(i) ⟦John does not seem to be there⟧ ⇔ ⟦It seems that John is not there⟧
(ii) ⟦Nobody seems to be there⟧ ⇔ ⟦It seems that nobody is there⟧
The change from *seem* to *is certain* in the examples in the main text makes it possible to avoid interference from Neg-raising in the scope judgements (as e.g. pointed out in Kayne 1998: fn. 26).

Negative NPs also differ from strong NPs in that only the latter may undergo short scope diminishment below negation. This disparity accounts for the availability of the inverse scope reading in (22) (Lasnik 1972) and its absence in (21), respectively:

(21) No guest didn't show up. $\neg\exists\neg \Leftrightarrow \forall/*\neg\neg\exists \Leftrightarrow \exists$

(22) a. Every guest didn't show up. $\forall \succ \neg/\neg \succ \forall$
b. All that glitters isn't gold.

Thus, negative NPs are characterized by even more limited scope options than strong NPs, corroborating that they establish a group of their own. In what follows, I will refer to the descriptive generalization capturing the rigid behavior of negative quantifiers as Negative Constraint:

(23) **NEGATIVE CONSTRAINT**
Negative NPs do not reconstruct.

Observe furthermore that the narrow scope construal of (22) satisfies the Strong Constraint and can be interpreted as the result of subject reconstruction below negation, presupposing that negation is located above T˚ (for details see 3.2).

Finally, several recent studies have motivated a restriction ('Base Constraint') which prohibits subjects from being interpreted in their Θ-positions (Johnson and Tomioka 1997; Lechner 1996, 1998; Sauerland 2000). I will integrate the Base Constraint into the systems for sake of perspicuity, even though (the relevant subset of) its effects can also be derived from other principles.

In order to parse the scope splitting constructions in (3) to (5) into a tree, one last ingredient is still missing. Section 3.2 expands on this issue by providing a strategy for determining the structural location of modals, while section 4 will finally present the synthesis of the argument for SAHM.

3.2. THE POSITION OF MODALS

There is good reason to believe that English modals are generated in a VP-external position, from where they move into a higher head which is located above clausal negation and (some aspectual) adverbs. It is arguably the effect of this movement which carries the modal to the left of *not*, *always* and *never* in (24) to (26). In what follows, I will focus on examples involving negation, as in (24); this limitation does not adversely affect the generality of the argument, though.

(24) John can_1 not t_1 come along today. $\neg \succ \Diamond$ /??$\Diamond \succ \neg$

(25) He can_1 always t_1 count on me. *always* $\succ \Diamond/*\Diamond \succ$ *always*

(26) He can_1 never t_1 do that. *never* $\succ \Diamond/*\Diamond \succ$ *never*

A first indication that modals are indeed generated in a position below negation and (certain

aspectual) adverbs comes from the observation that modals precede these operators yet display a strong preference for narrow scope (Lerner and Sternefeld 1984; Öhlschläger 1989). This dissociation of surface position and scope is straightforwardly captured by an analysis that adopts low base-generation, movement and reconstruction. For ease of reference, the base and the derived position of the modal will be identified with T˚ and AgrS˚, respectively.[12] The choice of labels does however not play a substantive role in the development of the argument.

In order to establish that the scope order in (24) is actually the product of modal raising and reconstruction, it must be ascertained that scope reversal does not result from an alternative derivation in terms of covert movement of negation ('Neg-Shift') across the modal. A strong argument against Neg-Shift is furnished by slightly more complex examples such as (27). (27) includes a PPI (*sometimes*) which is assigned wide scope w.r.t. the modal, which in turn takes scope below negation:

(27) It can sometimes not be avoided to confront the enemy. *sometimes* $\succ \neg\Diamond$

The critical property of the PPI in (27) consists in its ability to introduce two additional scope criteria which will be seen to exclude a Neg-Shift analysis. First, the PPI must stay outside the scope of negation. Combined with the narrow scope tendency of circumstantial modals, this requirement leads to the scope order *sometimes* $\succ \neg\Diamond$. The LF underlying this reading can now either be attributed to reconstruction of the modal, as documented by (28), or to Neg-Shift followed by covert movement of the PPI *sometimes* as in (29):

(28) *Derivation A: modal reconstruction*

a. $[_{AgrSP}$ it can$_1$ [sometimes $[_{NegP}$ not $[_{TP}$ t$_1$ *Surface order*

b. [sometimes $[_{NegP}$ not $[_{TP}$ can *Reconstruction*

(29) *Derivation B: Neg-Shift*

a. $[_{AgrSP}$ it can$_1$ [sometimes $[_{NegP}$ not $[_{TP}$ t$_1$ *Surface order*

b. $[_{XP}$ not$_2$ $[_{AgrSP}$ it can$_1$ [sometimes $[_{NegP}$ t$_2$ $[_{TP}$ t$_1$ *Covert Neg-Shift*

c. $[_{YP}$ sometimes$_3$ $[_{XP}$ not$_2$ $[_{AgrSP}$ it can$_1$ [t$_3$ $[_{NegP}$ t$_2$ $[_{TP}$ t$_1$ sometimes *QRs*

Second, Szabolcsi (2002) discusses a property of an intriguing class of PPIs which makes it possible to adjudicate between the two competing analyses in (28) and in (29). She observes that the weak indefinite PPI *somewhat* in (30) has to satisfy two conflicting requirements simultaneously. As a PPI, *somewhat* would have to escape the scope of negation by Neg-Shift. However, being a weak indefinite, *somewhat* must not cross the negative island established by negation, resulting in an ill-formed output string:

[12]Independent motivation for a system that locates NegP inbetween TP and AgrSP, and allows modals to move from T˚ to AgrS˚ can e.g. be found in Johnson (2003: 68ff). For discussion of the syntax of negation see Zeijlstra (2004: 167ff). Cormack and Smith (1998, 1999, a.o.) present a non-derivational account for mismatches between scope and order, which employs a non-standard procedure for mapping syntax to PF and LF.

(30) *John doesn't appreciate this somewhat

Sometimes in (27) behaves now just like *somewhat*, as illustrated by (31). This is entirely expected since *sometimes* is also interpreted as a weak, 'non-specific' indefinite.

(31) *John didn't sometimes come to class.

But given that *sometimes* must not covertly move across negation in (31), it should not be able to do so in (27), either. Moreover, since the success of the Neg-Shift derivation in (29) crucially depends on the ability of the adverb to cross negation subsequent to Neg-Shift ((29)c), it also follows that (27) cannot be the result of Neg-Shift. Thus, modals must be allowed to reconstruct, as implied by the derivation in (28), which lets modals originate below their surface position.

Now that the background assumptions have been spelled out, the next section proceeds to the core argument for the view that HM can have an effect on semantic interpretation (SAHM).

4. ANALYSIS

4.1. THE ARGUMENT FOR SAHM

In section 3.1, it was seen that strong and negative quantifiers never reconstruct below raising main verbs (*seem, appear*). Consider in this light scope splitting with negated universals:

(5) Not every boy can make the basketball team. $\neg\Diamond \succ \forall$

(32) a. Syntax: [+neg] must be in the local scope of the possibly abstract negation NOT.
b. Semantics: $[\![[\textit{Not every}\ \text{NP}]]\!] = [\![[\textit{every}\ \text{NP}]]\!]$
(adopted from Penka 2002; Penka and von Stechow 2001; von Stechow 1993)

(32)a requires that a negative NP, which bears the feature [+neg], be c-commanded by an abstract negation. If the negative NP precedes its licensing head, as is the case in (5), the subject must be reconstructed in orde`r to satisfy (32)a, and a lower copy is submitted to interpretation ((33)a). Eliminating the [+neg]-feature from this representation then yields the LF-output (33)b:

(33) a. [Not every boy] NOT can [not every boy]$_{[+neg]}$ make the basketball team.
b. [Not every boy] NOT can [not every boy] make the basketball team.

The interpretive convention (32)b further regulates the transition from the morphologically negative QP in (34)a to its contradictory in (34)b, resulting in the split reading:

(34) a. $[\![\text{NOT}]\!]$ can $[\![\text{not every boy}]\!]$ make the basketball team.
b. $[\![\text{NOT}]\!]$ can $[\![\text{every boy}]\!]$ make the basketball team. $\neg\Diamond \succ \forall$

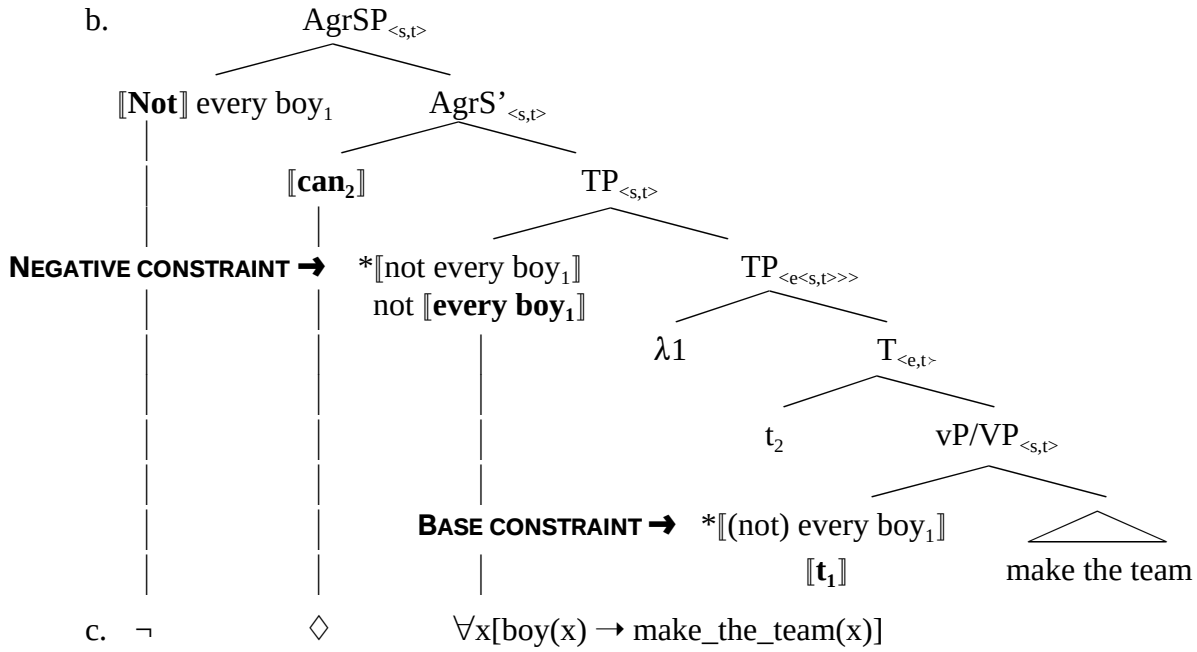
The representations above do not reveal the exact location in which the subject is to be interpreted yet. It can now be shown, though, that on plausible assumptions, the LF-position of the subject is above the node in which the modal originates. As a result, the modal would have

to be interpreted in a derived position.

The tree in (35) provides a more detailed representation for (5) and aids in identifying the impact of two of the constraints on scope reversal discussed in section 3.1. Starting top-down, reconstruction of the negative NP is throughout prohibited by the Negative Constraint, rendering inaccessible for interpretation all copies of *not every boy* except the highest one. This accounts for the absence of the *de dicto* reading (see (11)).

(35) a. Not every boy can make the team. ¬◇ ≻ ∀ / ¬∀ ≻ ◇ / *◇≻ ¬ ∀

b.



c. ¬ ◇ ∀x[boy(x) → make_the_team(x)]

Next, the Base Constraint blocks reconstruction into SpecvP. The lowest interpretable subject copy (bold face ***every boy***) consequently must be located above vP/VP at LF. On the most parsimonious clausal architecture, this position can be identified with SpecTP.[13] Since TP is above the base position of the modal, and the modal takes scope above the universal, it follows that the split reading derives from interpreting *can* in a derived head (AgrS°). Provided that the trace of HM in (35) is semantically vacuous, the raising modal, which denotes a propositional operator of type <<s,t>,<s,t>>, can directly combine with its sister node in this derived position. This finding indicates that HM can have an effect on interpretation, providing a first piece of evidence for SAHM. The particular interpretation of the data presented above also conflicts with a PF-analysis of HM, and can accordingly be used as an argument in support of a conservative syntactic treatment of displacement of terminals.

[13]Sauerland (2003) presents evidence that subjects can be reconstructed into a low A-position he identifies with vP. As Sauerland demonstrates, this position must be below negation (see (i)), but still high enough to bind an experiencer (see (ii)):

(i) Every student mustn't get an A. □ ≻ ¬∀ (Sauerland 2003: 309; (4))

(ii) Every child$_2$ doesn't seem to his$_2$ father to be smart. ¬ ≻ ∀ (ibid, 310; (7))

Sauerland's insight can be maintained without loss in the present system if it is assumed that the modal in (i) is interpreted in AgrSP, the subject in SpecTP, and the negation in NegP, between AgrSP and TP.

4.2. IMPLICATIONS

The current section elaborates on some implications that result from a shortcoming of the analysis of (5). To be specific, the derivation of the split reading detailed in (35) violates the Negative Constraint of section 3.1, as it necessitates reconstruction of the apparently negative NP *not every boy*. As will be laid out below, this inconsistency can be resolved by adopting at least one of two assumptions. The two alternative positions differ in whether they parse the subject of (5) as a constituent or not.

Assume, as was implicitly done so far, that the subject *not every boy* forms a constituent and undergoes reconstruction as a unit. Then, the split reading of (5) has non-trivial consequences for the way in which the principles guiding reconstruction, notably the Negative Constraint of section 3.1, are interpreted. More precisely, the condition must not be defined for *morphologically* negative QP, because this would have the detrimental effect that the morphologically negative QP *not every boy* could never be parsed below its surface position at LF in the first place.[14] Two possible solutions present themselves: re-defining the Negative Constraint, or deriving its effects from another source.

On the one hand, it would be possible to restore consistency for the derivation (35) if the Negative Constraint were taken to operate on target interpretations of NPs, instead of on morphosyntactic entities. As the morphologically negative NP *not every boy* in SpecTP of (35) is translated as a positive universal, this shift would have the desired effect. The specifics of how to regulate information transfer in such a set up would still require extensive elaboration, though. For one, how does LF know which interpretation a specific NP is assigned in the formal language, given the standard view that the semantic computation takes LFs as its input? The pertinent information can evidently not be encoded in morphosyntax, as mismatches between morphosyntax and interpretation constitute the defining property of the scope splitting construction. Moreover, retaining a useful version of the Negative Constraint would require some LF - semantics correspondence mechanism that singles out the class of 'morphologically negative NPs which are interpreted as negative quantifiers'. But the specific analysis for negative NPs adopted here makes it very hard to even refer to negative quantifiers in a meaningful way. This is so because negative NPs are translated as their contradictories into the formal language, while negation is sponsored by the semantic value of the higher abstract NOT. Thus, the semantic inventory does presumably not even contain an entry for determiners such as *no* or *not every* which could aid in identifying a semantically negative constituent.

All of these complications can be avoided if the Negative Constraint is eliminated in favor of a suitable alternative device that permits limited reconstruction of [+neg]-marked NPs. A solution along these lines, which promises principled account of (35), will be presented below.

Suppose that contrary to what has been claimed so far, reconstruction of negative NPs is

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[14]The considerations do not carry over to the Strong Constraint, because negated universals are not symmetric and qualify as strong NPs:

(i) *There is not every problem (for this solution).

generally admitted, and that it is motivated by the need to satisfy the local-scope requirement of the [+neg]-feature at LF.[15] This renders reconstruction in certain contexts even obligatory, forcing negative NPs that surface to the left of NOT (those located in SpecAgrSP or higher) to 'lower' into the first available position which guarantees satisfaction of (32)b. The first category within the scope of NOT is TP. Furthermore, reconstruction into an even lower node can be blocked by economy considerations. SpecTP is the closest position which supports [+neg]-licensing. Thus, negative NPs preceding NOT and the modal in overt syntax are interpreted in SpecTP (for negative NPs whose LF-position is slightly lower see section 6.2, ex. (92)).[16]

Together with standard assumptions about the organization of the syntactic evolution of the tree, this system accounts for the general resistance of negative NPs to reconstruct, as well as for the exceptions noted in connection with scope splitting. Turning to $NP_{[+neg]}$ that are interpreted as negative quantifiers first, the subject in (36) can in principle be interpreted in three different positions. In the well-formed representation (36)a, which underlies the surface scope reading, *no critic* undergoes short reconstruction to the matrix SpecTP, licensing the [+neg]-feature which now resides within the scope of NOT at LF. The parse in (36)b minimally differs from (36)a in that the subject has been reconstructed into the lower clause, resulting in an unattested split reading across a raising predicate. The structure is excluded by the locality requirement on [+neg] licensing, which requires the feature to reside within the scope of a clause-mate negation. Finally, in (36)c the subject reconstructs into the lower SpecTP again. But this time, the abstract NOT is generated in the embedded clause, too, in accordance with the locality conditions on [+neg]. At first impression, one is therefore led to expect that the derivation converges, providing an LF for the impossible narrow-scope *de dicto* interpretation.

(36) No $\text{critic}_{[+Neg]}$ is certain to like the movie. (= (20))

a. $[_{NegP}$ NOT is $[_{TP}$ [no $\text{critic}_{[+Neg]}$] $[_{VP/AP}$ certain to like the movie ¬∃ ≻ *certain*

b. *$[_{NegP}$ NOT is $[_{TP}$ $[_{VP/AP}$ certain $[_{TP}$ [no $\text{critic}_{[+Neg]}$] to like the movie ¬ ≻ *certain* ≻ ∃

c. *is $[_{TP}$ $[_{VP/AP}$ certain $[_{NegP}$ NOT$[_{TP}$ [no $\text{critic}_{[+Neg]}$] to like the movie *certain* ≻ ¬∃

The LF in (36)c falls short of satisfiying an independent criterion on derivations, though, which is generally referred to as the Improper Movement Constraint, and which rules out certain combinations of A- and Ā- dependencies. (37) provides a version that transposes the traditional concept of A/Ā-movement into the currently more popular Agree-based system:

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[15]Penka and von Stechow, who focus on German, explicitly restrict (32)b to surface syntax. This difference in the level of application might be due to the general scope rigidity of German.

[16]Reconstruction of the negative subject in (21), repeated in (i) is presumably blocked by some 'doubly filled NegP'-filter, that prohibits simultaneous presence of abstract and overt negation in one NegP.

(i) No guest didn't show up. ¬∃¬ ⇔ ∀/ *¬¬∃ ⇔ ∃

(37) **IMPROPER MOVEMENT CONSTRAINT (AGREE-VERSION)**

If a category C partakes in an Ā-Agree dependency at node n, it must not enter into an A-dependency at a node that dominates n.

Classic instances of improper movement prototypically involve *wh*-movement, where the constraint e.g. excludes subsequent applications of *wh*-movement and raising of one and the same category. Moreover, on a widely accepted view, the distribution of [+neg] features is governed by principles similar to the ones which are thought to be responsible for the licensing of *wh*-phrases. Haegeman and Zanuttini (1996), for one, express various restrictions on negative NPs by appealing to the Neg-Criterion, which they define in analogy to the *wh*-criterion of Rizzi (1991).[17] It is therefore only natural to expect that the application of (37) also has empirical manifestations in the domain of negative licensing. I would like to suggest that exactly such a case has been identified above in the guise of (36)c.

As detailed by (38), the subject of (36)c enters both an Ā-dependency ([+neg]-licensing) and an A-dependency (raising). Moreover, the node delineating the Ā-dependency (☞) is dominated by the node which demarcates raising (☛). As a result, the derivation fails to satisfy the improper movement constraint.

(38) a. is [$_{TP}$ [$_{VP/AP}$ certain [$_{NegP}$ NOT ☞ [$_{TP}$ [no critic$_{[+Neg]}$] to ... *[+neg]-licensing*

b. ☛[$_{AgrSP}$[no critic$_{[+Neg]}$] is [$_{TP}$ [$_{VP/AP}$ certain [$_{NegP}$ NOT [$_{TP}$ to ... *Raising*

It should not go unnoticed in this context that the system has enough flexibility for adjustments in order to counter the potential objection that the creation of the Ā-dependency in (38) does not derivationally precede raising, but is delayed at LF. One way to remove this apparent disparity between Improper Movement with [+neg]-features and *wh*-phrases consists in assuming that negative NPs check their [+neg]-features already in overt syntax (as e.g. in Penka 2002), but that they also need to satisfy an independent scope requirement at LF which then drives reconstruction. The latter might be similar to that found with NPIs. On an alternative implementation, negative NPs are endowed with two features, which have to be eliminated in overt syntax and at LF, respectively.

In sum, the locality condition on [+neg] licensing and a general constrain on derivations ensure that the missing narrow scope reading cannot be generated. Moreover, this re-interpretation of scope rigidity with negative NPs has the positive side-effect of making appeal to the Negative Constraint no longer necessary. This is of particular significance for present purposes in that local reconstruction from SpecAgrSP into the scope of NOT is predicted to be admissible, guaranteeing logical consistency of the account for the split reading in (5)/(35). The details of the LF-output representation for the split reading are provided below:

[17]For discussion see Zeijlstra (2004). The Neg-Criterion requires specifier-head relations, instead of scope (i.e. c-command at LF) to apply between the [+neg-]feature and the semantic negation. This difference is immaterial for present purposes, though.

(39) a. Not every boy can make the basketball team. $\neg\Diamond \succ \forall$

b. LF: [$_{\text{NegP}}$ NOT [$_{\text{Neg'}}$ ⟦can⟧ [$_{\text{TP}}$ ⟦[not every boy]$_{[+\text{Neg}]}$⟧ team

In (39)b, access to a lower copy of the *not every boy* is now permissible because the prohibition on reconstructing negative NPs has been removed from the analysis. For the cases at hand, the revised analysis also renders the Strong Constraint superfluous, because contrary to the original account in (35), the syntactic derivation of negative split now only manipulates genuinely morphologically negative NPs. The ambiguity between the split and the *de re* interpretation is then seen as a function of the position in which the modal is interpreted: in Neg° for the split reading, and in T° for the *de re* construal.

Unlike the Negative Constraint, which could be subsumed under the [+neg]-licensing criterion, the Strong Constraint cannot be entirely eliminated from the catalogue of descriptive conditions on reconstruction, though. Clearly, the resolution of the raising examples (13) and (14) still requires an adequate way of referring to strong NPs. In addition, the Strong Constraint will resurface in section 5.2 (see (64)) and 6.2 (see (93)), where it sets a lower limit on the scope position of negated universals.

Above, it was claimed that the analysis of (35) can be restored by employing one of two possible strategies. So far, this was shown to be correct for an account which keeps the constituency of the subject (*not every boy*) intact. Presented with the problem of how to exempt negated universals from the Negative Constraint one might also argue, though, that (33) simply misrepresents constituency, and that reconstruction only targets the universal quantifier part, stranding the negation, as in (40):[18]

(40) [$_{\text{XP}}$ Not [$_{\text{AgrSP}}$ [every boy] can [every boy] make the basketball team.

Negation in (40) could be located in a higher NegP (Zeijlstra 2004), or adjoined to CP, following a recent suggestion for focus particles such as *only* in German (Büring and Hartmann 2001; Reis 2005). The extension to *not*, which also associates with focus, is at least not implausible.

This view, which presupposes that *every boy* forms a constituent to the exclusion of *not*, is presumably also better suited to account for the absent reading of (41) (ignoring possible influence from different focal associations on the part of *not*).

(41) Not every car or every house is safe.

a. $\neg[\forall\phi \vee \forall\psi] \Leftrightarrow \neg\forall\phi \wedge \neg\forall\psi$ *Wide scope* or

b. $*\neg\forall\phi \vee \neg\forall\psi$ *Narrow scope* or

(41) verifies models that contain cars as well as houses whose security status is unclear; but it can e.g. not be used to describe a scenario in which every car has been cleared and declared safe, while some houses are still considered to be at risk. That is, in the only available interpretation

[18]On discussion and origins of such an account for *not every NP* see Lasnik (1972: 26ff) and references therein; for recent comments on the non-constituency of *not every NP* see Kayne (1998: 157f).

(41)a, the negation takes scope over the coordinator *or*. Incidentally, a similar observation for a related structure has been reported for Gapping such as in (42), where a missing negation in the second disjunct cannot be reconstructed locally (Johnson 2000; Lin 2001; Oehrle 1987).

(42) Kim didn't play bingo or Sandy ~~didn't~~ sit at home all evening.

a. $\neg[\phi \vee \psi] \Leftrightarrow \neg\phi \wedge \neg\psi$
b. $*\neg\phi \vee \neg\psi$

The most straightforward mapping between (41)a and a syntactic tree is provided by the bracketing in (43)a, which construes *not* as a negation that takes scope over the entire proposition. On this view, the two subject NPs are combined by generalized disjunction (Partee and Rooth 1983), resulting in the intended interpretation. A more conservative structure, which groups together as a syntactic constituent the right bottom corner of the Aristotelian square of oppositions, yields either (43)b or (43)c. The former representation - which appears to involve a rather dubious type of ellipsis - results in an unattested reading, and can therefore be excluded.

(43) a. [Not [[[every car] or [every house]] is safe $\neg[\forall\phi \vee \forall\psi]$
b. *[Not every car] or [~~not~~ every house] is safe $\neg\forall\phi \vee \neg\forall\psi$
c. *[Not every car] or [every house] is safe $\neg\forall\phi \vee \forall\psi$

Moreover, the potential existence of a reading corresponding to (43)c - which incidentally appears to be intuitively unavailable - does not bear on the argument for an alternative phrase structure for *not every*, as it does not invalidate the evidence for the factorization in (43)a.

Even though apparently successful in some applications, it is less obvious, though, whether a re-bracketing approach can be extended to other NPs, in particular negative indefinites (*no car*). Split readings with negative indefinites pose the same problem for the Negative Constraint in that their derivation appears to demand reconstruction of negative NPs. Yet, such contexts arguably resist syntactic decomposition into sentential negation and a restriction that may be read with narrow scope, as in (44). The specific parse in (44) would require rather extensive justification (some of which can be found in Sportiche 2005).

(44) No [body must pay for it]. $\neg\Box \succ \exists$

To summarize, the current sub-section argued that an apparent incompatibility between the Negative Constraint and the account for the negative split examples (5)/(35) can be resolved in two ways. On the conceptionally more attractive version, which will be adopted as the official position below, the Negative Constraint is eliminated from the repertoire of the conditions on scope diminishment, and its effect are subsumed under the [+neg]-licensing criterion, economy and the improper movement condition. On the other hand, there is some suggestive evidence for re-bracketing the negation in *not every boy*. The latter solution, which removes the discrepancy by denying that the lower copy contains the negative portion of the NP in the first place, fails to generalize to negative indefinites, though.

5. THE LF-POSITION OF THE SUBJECT

The discussion so far addressed the means of how to produce the LF-representations for negative split examples with negated universals ((5)/(35)). But the validity of the argument in favor of SAHM presented in section 3 also falls and rises with the accuracy of the tools that are used to locate the interpretive position of the subject in (5)/(35). In particular, the evidence is conclusive only if it can be shown that the LF position of the subject is above the position in which the modal originates. In (35), this conclusion was secured by the additional assumption that the vP is immediately merged with TP, with no other functional projections disrupting the spine of the tree. If, contrary to this assumption, vP and TP were separated by further categories (AspP, PerfP, AuxP; see e.g. Cinque 1999) which may host additional intermediate copies of the subject, it evidently has to be demonstrated that the subject is not interpreted in one of these intermediate landing sites. Otherwise, the modal could be translated in its base position, invalidating the evidence for SAHM.

A first argument in this direction can be derived from the selectional properties of raising modals. On a widely shared assumption, raising modals embed small clauses (Stowell 1983, 2004). Moreover, as initially observed in Stowell (1981) and Williams (1983), small clauses are scope islands, they minimally contrast with clausal complements in that their subjects cannot be construed *de dicto:*[19]

(45) a. A linguist seems to be unhappy. *de re/de dicto*
b. A linguist seems unhappy. *de re/*de dicto*

Turning to the scope splitting example (35), the combination of these two premisses is now sufficient in order to exclude subject reconstruction into specifiers potentially intervening between TP and vP. More precisely, transposing the small clause analysis to raising modal constructions entail that all nodes c-commanded by the base position of the modal (☛) are scope islands for the subject:

(46) Subject_k ... [$\text{Modal}_{\text{base position}}$ ☛[$_{\text{Small Clause}}$ t_k ....]] *No reconstruction into* t_k

On this view, the possibility that other functional categories could intervene between TP and vP in (35) turns out to be irrelevant for the strength of the argument.

In fact, adopting the analysis above has the even more radical consequence of rendering reconstruction below the base position of raising modals generally impossible. If correct, it would therefore follow that all *de dicto* readings below circumstantial modals derive from interpreting the modal in a derived position. Although this at first sight looks like an attractive further support for SAHM, the generality of claim makes it hard to be falsified, and therefore weak in its empirical foundation.

Moreover, the analogy between small clauses and complements of raising modals is less

[19]For a way to derive the scope island hood of small clauses see Johnson (2001b).

straightforward than one might hope. First, raising modals allow *de dicto* readings for weak subjects, while it was the absence of such readings in (45)b which formed the basis of the scope island hypothesis. Second, the evidence for treating complements of raising modals as small clauses is, as far as I know, not very strong, and at least requires further empirical justification. For at least these reasons, it would be advantageous if it were possible to find independent empirical support for the claim that the subject in (35) is interpreted no lower than in SpecTP. There are two pieces of evidence indicating that this view might be correct, which I will outline in the following two subsections in turn.

5.1. Scope Freezing

Barss (1986) pointed out that predicate fronting results in *scope freezing* (for discussion see Elbourne and Sauerland 2002; Lechner 1996, 1998). The fronted, VP-internal quantifier *every student* in (47) (from Huang 1993) cannot be assigned scope above the subject *noone*:

(47) [Teach every student], noone will. $\neg\exists \succ \forall$ / $*\forall \succ \neg\exists$

Even though the concrete factors involved in the analysis of scope freezing are poorly understood, any successful theory has to achieve two objectives: first, it must prohibit QR out of the lower copy of the predicate across the subject, and second, it must block reconstruction of the subject into the copy of the fronted constituent. In particular the second desideratum is of significance for the present discussion, because it establishes a lower boundary for the LF-position of the subject. If a derivation such as (48) admitted subject reconstruction into the lower copy of the fronted constituent, as in (48)c, it should be possible to generate the inverse scope reading represented in (48)d:

(48) ✘ *Derivation A: subject reconstruction*

a.	$[_{XP}$ teach every student$]$ $[_{YP}$ noone will$]$		*Surface order*
b.	$[_{YP}$ noone will$][_{XP}$ teach every student$]$		*LF: lower VP copy accessible*
c.	will $[_{YP}$ $[_{XP}$ noone teach every student$]]$		*Subject reconstruction*
d.	will $[_{YP}$ $[_{XP}$ every student$_1$ $[_{XP}$ noone teach $t_1]]]$	$\forall \succ \neg\exists$	*(Short) object QR*

Thus, predicate fronting provides important clues as to the shape of clauses in that it allows one to measure the minimal height of the subject at LF. More specifically, in a construction in which a node XP has been fronted, the subject is located at least as high as XP at LF. Before this test can be deployed, it is still necessary to determine the exact size (or categorial status) of the fronted constituent XP, though.

While the evidence for or against a particular view on how much structure is dislocated in predicate fronting is scarce, there are at least three considerations which can be interpreted as a bias toward an analysis in which XP is the sister node of T˚, i.e. a large constituent which reaches up to the lower position of the subject.

First, Huang (1993) demonstrates that VP-fronting actually targets constituents which

include the base position of the subject, i.e. vPs in current theorizing. Matsuo (2001) furthermore provides evidence that the node which undergoes fronting cannot be a vP, but must be at least as large as AspP (for arguments that VP never undergoes fronting alone see also Abels 2003).

Second, if movement can, in a given context, target more than one node, and if these nodes are ordered in a dominance relation, as α, β an γ are in (49)a, then the Minimal Link Condition (or Attract Closest) favors attraction of the highest node, as schematized by (49)b, over movement of more deeply embedded ones, as in (49)c or (49)d:

(49) a. attractor $[_{\alpha}$ $[_{\beta}$ $[_{\gamma}$
b. $[_{\alpha}$ $[_{\beta}$ $[_{\gamma}$ attractor t_{α}
c. * $[_{\beta}$ $[_{\gamma}$ attractor $[_{\alpha}$ t_{β}
d. * $[_{\gamma}$ attractor $[_{\alpha}$ $[_{\beta}$ t_{γ}

Presumably the same conclusion can be reached by treating the phonological void created by the movement relations in (49) as (special) instances of ellipsis. On this conception, (49) would arguably also fall under the reign of such principles as MaxElide (Merchant, to appear), a condition which requires maximization of ellipsis. Assuming that PF-deletion is triggered by a syntactic feature which signals silence at PF (Merchant 2001), MaxElide can be understood as a preference for positioning the deletion feature as high in the tree as possible. As a consequence, MaxElide will rule out (49)c and (49)d in favor of (49)b, because the deletion feature has reached its maximal height only in the latter derivation.

Finally, according to an influential view, ellipsis operations must be licensed by a local relationship with an overt head (Johnson 2001a; Lobeck 1995). Similar ideas have been popular in the analysis of movement (ECP). Again assuming that licensing conditions on ellipsis and on movement lend themselves to a common treatment, the licensing head *will* in predicate fronting structures such as (48) has to be 'close' to the moved category, repeated as (50)a below:

(50) a. $[_{\alpha}$ teach every student] $[_{YP}$ noone $[will_{licensing\ head}\ t_{\alpha}$ (= (48))
b. *$[_{\beta}$ teach every student] $[_{YP}$ noone $[will_{licensing\ head}\ [_{\alpha}\ t_{\beta}$

As for the precise definition of 'closeness', it seems natural to adopt not only a linear condition (PF-adjacency), but also a structural one ('government'), as encoded in what used to be known as the ECP. This leaves as the most plausible candidate the requirement that the licensing head (*will*) be the sister of the moved category, as in (50)a. The parse in (50)b, in which the actually dislocated category (β) is *not* the largest category that can be moved (α) can then be excluded given that α intervenes between *will* and the trace/copy of the moved term. Again, these speculations, which clearly require further substantiation, support the view that predicate fronting targets the highest node compatible with surface ordering (i.e. the sister of T°).

In sum, there is suggestive yet accumulative evidence that VP-fronting pied-pipes the largest possible amount of structure. As a consequence, the finite verb (*will* in (48)) ends up as the sister node of the trace/copy. From these considerations and the observation that fronted predicates induce scope freezing it also follows now that the sister node of T° always functions as a scope

island. It is this property of VP-topicalization which can be used to locate the subject position in scope splitting.

Note first that VP-fronting appears to be compatible with a split reading for a negated universal, as documented by (51). Even though clearly marked, (51) sharply contrasts with the ineligible instances of fronting with main raising verbs in (52):

(51) ?The photographer told them that not every child can sit in the first row, and/but [sit in the first row], not every child can. ¬◇ ≻ ∀

(52) a. *...and [sit in the first row], not every child seems to.
b. *...and [to sit in the first row], not every child seems.

What is of particular relevance for present concerns is that on the assumptions about predicate fronting made above, the split reading in (51) can only be produced by interpreting the subject in SpecTP, as shown in more detail by the LF representation (53)b. All other, intermediate subject positions inside the fronted constituent α are inaccessible for reconstruction due to the workings of whatever principle is responsible for scope freezing:

(53) a. [$_{\alpha}$ sit in the first row], not every child can. ¬◇ ≻ ∀
b. [$_{\text{NegP}}$ ⟦**NOT**⟧ [$_{\text{Neg}}$ ⟦**can**⟧ [$_{\text{TP}}$ t_{can} ⟦**every child**⟧ [$_{\alpha}$ sit in the first row]

Moreover, (53)b also highlights that in order to take scope above the subject, the modal has to be interpreted in a derived position. Thus, combinations of VP-fronting and scope splitting present a first potential argument in defense of the SAHM-Conjecture.

5.2. NEGATIVE POLARITY LICENSING

The second piece of support for interpreting subjects high - and thereby also for SAHM - can be distilled from split scope configurations which include Negative Polarity Items (NPIs). Observe to begin with that negated universals license NPIs if the QP is assigned surface scope ((54) from Horn 2000: (49b); see also Penka 2002: fn. 37):

(54) Not everyone who works on negation has ever read any Jespersen. ¬∀ ≻ NPI

Interestingly, scope splitting for some reason appears to conflict with NPI-licensing, as demonstrated by the deviance of (55). The relative scope order of the NPI w.r.t. the universal and the modal (to the degree that they are logically independent) does not affect acceptability judgements; the example is ill-formed in all split interpretations.[20]

(55) *Not everyone can ever t be on the team. ¬ (≻ NPI) ≻ ◇ (≻ NPI) ≻ ∀ (≻ NPI)

Moreover, (56) testifies to the fact that modals (and split indefinites) do not interfere with NPI-

[20]It is orthogonal for present purposes whether (57) is well-formed on a non-split interpretation. According to informants, this is not the case, raising the additional question why (57) contrasts with (54).

licensing, implying that the degraded status of (55) should not be blamed on the presence of *can* (see also (58) below; see also von Fintel and Iatridou 2005: 21f, who reach the same conclusion).

(56) Nobody can ever be on the team. $\neg\exists \succ \Diamond \succ$ NPI/$\neg\Diamond \succ \exists \succ$ NPI

A split reading for (55) is arguable unavailable for the same reason that the paraphrase of (55) given in (57), which is synonymous *modulo* tense, is ill-formed:

(57) *It is not possible that everybody will ever be on the team. $\neg\Diamond \succ \forall \succ$ NPI

In both cases, a universal intervenes between negation and the NPI. Removing the quantifier salvages (57).

(58) It is not possible that you will ever be on the team. $\neg\Diamond \succ$ NPI

Thus, it is tempting to relate the absence of the split interpretation in (55) to the same condition which is usually evoked in handling contrasts such as (57) vs. (58), or those illustrated in (59) and (60): Linebarger's (1980) Immediate Scope Constraint (see also Guerzoni, to appear).

(59) a. He didn't like anything. (Linebarger 1987)
b. *He didn't always like anything. * $\neg \succ \forall \succ$ NPI

(60) a. I didn't want her to eat any cheese. (Linebarger 1980: 29)
b. *I didn't want every boy to eat any cheese. * $\neg \succ \forall \succ$ NPI

For this analysis to succeed, the subject of (55) has to reconstruct into a position above the NPI, from where it can disrupt the relation between negation and *ever*, triggering a violation of the Immediate Scope Constraint. But before the subject can be associated with a concrete node, it is still necessary to identify the attachment site of the NPI *ever*.

Ever and *always* are both aspectual modifiers, but they are not in strict complementary distribution. If they cooccur, *ever* needs to precedee *always*, as the Immediate Scope Constraint might lead one to expect:

(61) a. No one source is ever always authoritative.
b. *No one source is *always* ever authoritative.

(62) a. Where in the world is it ever always easy?
b. *Where in the world is it *always* ever easy?

Furthermore, *always* takes scope above modals to its left (see section 3.2), indicating that *always* originates as a TP-adjunct, and that modals optionally reconstruct below *always:*

(25) He [$_{\text{AgrSP}}$ can$_1$ [$_{\text{TP}}$ always [$_{\text{T'}}$ t$_1$ count on me]]] *always* $\succ \Diamond$/*$\Diamond \succ$ *always*

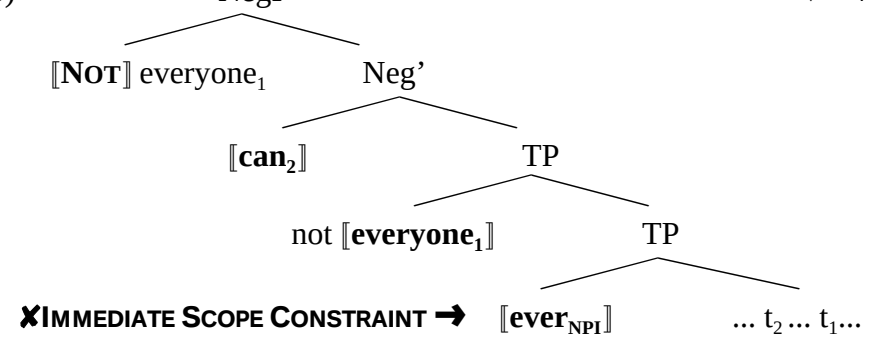
According to the ordering generalization extracted from (61) and (62), *ever* is located higher than *always.* Together with the scope fact (25) this entails that *ever* is generated as a TP-adjunct or as an adjunct to a projection above TP.

It also follows now that the subject intervener in (55), repeated below, has to be squeezed inbetween the negation and the TP-adjunct *ever* in order to induce a violation of the Immediate Scope Constraint. Furthermore, as this strategy eliminates only one member of the family of readings for (55) (viz. ¬ ≻ ◇ ≻ ∀ ≻ NPI), the remaining two interpretations must be removed by independent means. I will comment on the two cases in turn.

(55) *Not everyone can ever t be on the team. ¬ (≻ NPI) ≻ ◇ (≻ NPI) ≻ ∀ (≻ NPI)

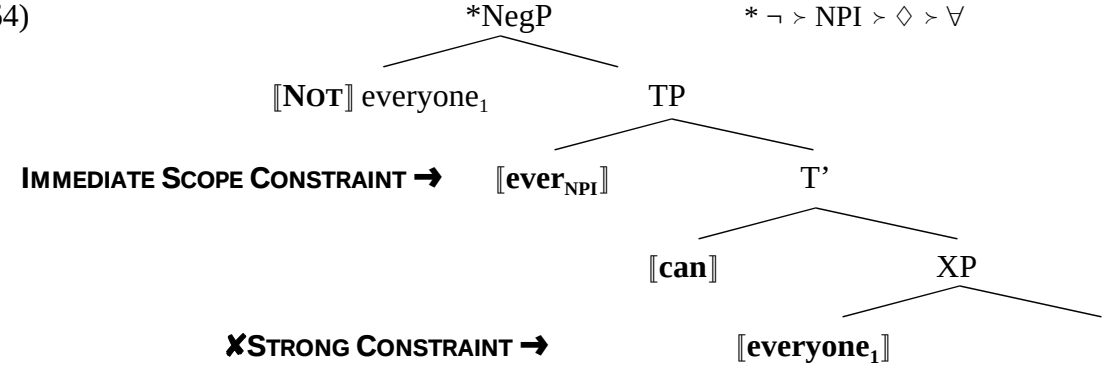
One way to arrive at the desired structural configuration for the application of the Immediate Scope Constraint consists in parsing the subject copy into an outer specifier of TP, from where it impedes NPI licensing, as shown by (63). This derivation excludes (55) by assuming that the split reading represents the scope order ¬ ≻ ◇ ≻ ∀ ≻ NPI:

(63) *NegP * ¬ ≻ ◇ ≻ ∀ ≻ NPI



Next, the absence of the alternative split scope order ¬ ≻ NPI ≻ ◇ ≻ ∀ encapsulates the crucial (reductio) argument against long subject reconstruction (and for SAHM). Suppose that the subject in (55) had the option to be interpreted below TP, in the specifier of some intermediate XP, as detailed in (64). In this alternative derivation, the modal is located in its base position T° at LF, and no category intervenes between the NPI and its licensing negation. Thus, (55) observes the Immediate Scope Constraint. Hence, if (55) could be parsed as in (64), one would wrongly be led to expect (55) to possess the split reading ¬ ≻ NPI ≻ ◇ ≻ ∀:

(64) *NegP * ¬ ≻ NPI ≻ ◇ ≻ ∀



The unavailability of scope splitting for (55) can therefore only be explained on the assumption that the universal subject is interpreted in SpecTP, as in (63). As will be demonstrated in a moment, this restriction on subject lowering falls out from the current set of assumptions.

Considerations similar to the ones raised in the discussion of (64) also exclude the third logically possible scope order for (55) ($\neg \succ \Diamond \succ$ NPI $\succ \forall$). This last available derivation differs from (64) minimally in that the modal is interpreted in its derived position Neg°. Just like (64), this reading cannot be produced due to illicit long subject reconstruction into SpecXP.

Note in passing that the argument above has the objective of securing the LF-position of the subject, and is not concerned with extracting from the data direct support for SAHM. If structures that violate a syntactic constraint, but are otherwise well-formed (such as (63)) are nonetheless assigned a semantic value, the modal in (63) might indeed be interpreted in a derived position. Whether or not this view turns out to be correct is orthogonal for the soundness of the main argument, though.

Above, in connection with (63) and (64), it was argued that NPI-licensing elicits evidence that subjects must be interpreted at least as high as in SpecTP. This descriptive generalization characterizing scope diminishment does not exist in isolation, though. The most organic - yet finally untenable - analysis explains the prohibition on recycling of subject copies below TP as a function of syntactic economy, which prefers shorter reconstruction patterns over longer ones. More precisely, licensing of the [+neg]-feature on *not everyone* by the abstract negation NOT can already be achieved by interpreting the subject in SpecTP, blocking derivations which locate the subject further down in the tree. Attractive as it is, this approach is challenged by a selected class of contexts in which copies of negative subjects also appear to be attested *below* SpecTP (see discussion in section 6.2, ex. (92)).

But the account also offers another way to defuse the reconstruction conflict. It is equally possible to attribute the ill-formedness of (64) to the Strong Constraint, which blocks reconstruction of strong NPs below T°. For the analysis at hand this has the effect of excluding the representation (64) in favor of (63), which in turn prevents the NPI from escaping the verdict of the Immediate Scope Constraint.[21]

Recapitulating the results of the current section, the interaction of scope splitting and NPIs provides a second piece of independent evidence for the claim that universal subjects cannot be interpreted below TP. As explicated in section 4, this finding furthermore implies that certain contexts with raising modals manifest instances of SAHM.

6. TRANSITIVE 'NEED'

The argument for SAHM presented so far was predicated on the assumption of a highly volatile head, the modal *can*. It was assumed that this modal is generated in a position which excludes the main predicate and its arguments (vP, VP), and moves to a position above the derived

[21]The parse in (64) also violates the general ban on reconstruction into small clauses - recall that *can* by assumption embeds a small clause complement. Furthermore, the Strong Constraint could also be employed in the unlikely case that a derivation turns out to be correct in which only the universal quantifier part of the subject reconstructs (see dicussion in section 4.2).

position of the subject (for present purposes AgrSP). In what follows, I will present a second piece of evidence for SAHM. From its logic, the argument is identical to the one discussed before. It differs, though, in the way in which the head combines with its sister node. While the modal *can* is merged in a VP-external position, from where it moves to AgrS, the head of the second class of examples, which involve the predicate *need*, originates inside VP, and surfaces in the intermediate projection T˚. As will be explicated below, there is good reason to believe that in the specific cases to be considered, the overt position of *need* is also the position in which the head is interpreted, constituting a second group of data in support of SAHM.

A proper subset of opaque verbs, including *want* and *need*, may select both for a nominal or a sentential complement:

(65) a. I want an ice-cream. (Fodor 1970: 321; (13))
b. I want {to have/to eat} an ice-cream. (ibid, ex. (14))

(66) a. John needs a book.
b. John needs to have a book.
c. John needs ~~to have~~ a book.

Constructions in which *need* selects for a DP ((66)a) in principle lend themselves to various different types of analyses (Fodor 1970)[22]. First, *need* can be directly combined with its nominal complement semantically (Montague 1973; Zimmermann 1993). Second, it is possible to derive (66)a from an underlying source such as (66)b by a syntactic deletion rule, or by the assumption that the complement contains phonetically unrealized material, as in (66)c (see e.g. Larson et al. 1997; den Dikken et al. 1997). Finally, one might assign (66)a and (66)b a common semantic representation without treating them as being syntactically related any closer than their surface appearance suggests (see e.g. Fodor and Lepore 1998). On this view, the lexical entry of the verb *need* includes an abstract possession relation that is not overtly expressed:

(67) $\lambda w \lambda x \lambda y \forall w'[Acc(w)(w') \rightarrow have(y)(x)(w')]$ (adapted from von Fintel and Heim 2002: 84)

In the following section, I will present an acount of transitive *need* that seems best compatible with a syntactic ellipsis approach. Based on this analysis, it will subsequently become possible to construct a further argument for SAHM (see section 6.2).

[22]See also discussion in den Dikken et al. (1997); von Fintel and Heim (2002: 83-88); Harley (2002, 2004b); Larson et al. (1997); Moltmann (1997); Partee (1974) and references therein. Fodor (1970: 322) remarks: "I shall simply assume [...] that in the semantic component, there are no essential differences between the representations of opaque contexts which are superficially [sentential] complement structures and those which are not. [...] It still remains to be asked how the mapping between the semantic representations and the surface structure is effected, and at which point in the grammar the two kinds of examples are differentiated. In particular, is it necessary to assign [such examples] syntactic representations containing complement structure?" (Square brackets mark omissions in and changes from original.)

6.1. THE SYNTAX AND INTERPRETATION OF 'NEED'

A version of an ellipsis analysis for transitive intensional verbs has recently been defended in Larson et al. (1997), who advocate a control structure for the complement of verbs such as *search, look for, want* and *need,* as in (68):

(68) John needs [PRO to have book]. (= (66)a)

While adopting the basic assumption that *need* embeds syntactic structure, I will present evidence below that suggests an analysis which slightly differs from Larson et. al (1997) in the details of its implementation. To anticipate, at least two sets of data indicate that the complement should not be parsed into a control structure, but into a small clause.[23] In order to avoid deviations into directions not directly pertinent to the construction of the argument for SAHM, the discussion will entirely concentrate on the predicate *need*. All of the examples are moreover compatible with an impersonal and non-realistic (irreflexive) modal base.

It is well-know that external arguments of control predicates differ from raising subjects in that the former cannot be construed *de dicto*:

(69) Several accomplices wanted to be involved. *de re/*de dicto*
(#But in reality, there weren't any accomplices) (von Fintel and Heim 2002: 56; (168))

In the literature, this generalization is usually explained as the result of certain assumptions about the admissible semantic types of predicates and possible modes of semantic composition (for details see e.g. von Fintel and Heim 2002: 92; von Stechow 2004: 219).[24] Irrespective of the precise mechanisms responsible for exluding the opaque reading for (69), the control analysis for transitive intensional verbs generates the prediction that a verb like *need* should behave just like *want* in lacking a narrow scope interpretation. This expectation is not borne out, though. In particular, negative subjects of *need* can be naturally assigned a split scope construal, which locates the indefinite part of the quantifier within the scope of the intensional operator. An observer at a card table might e.g. utter (70) with the intention to express the generalization that the specific game he has witnessed can be played (or won or enjoyed) without a partner.

(70) No player needs a partner at this game. $\neg\Box \succ \exists$
"It is not necessary that a player has a partner"

(71) No king needs an escort. $\neg\Box \succ \exists$
"It is not necessary that a king has an escort"

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[23]This option is admitted by den Dikken et al. (1997: 1051), and considered, but discarded in Larson et al. (1997: fn. 26). Similarly, Harley (2002), an earlier version of Harley (2004b), explicitly argues that *want* selects a small clause, while Harley (2004b) reverts to a control analysis of *want.*

[24]This is not to say that it is not *possible* to define a semantic which derives the (unattested) opqaue interpretation. One way is discussed in von Fintel and Heim (2002: 92f). Another, mimicking semantic reconstruction, consists in allowing PRO to abstract over Generalized Quantifier-type traces, and to assign to *need* the lexical entry in (i).

(i) $[\![\text{need}]\!] = \lambda A_{<<e,st>,st>,st>} \lambda B_{<e,st>} \lambda w \forall w'[\text{Acc}(w)(w') \rightarrow A(B)(w')]$

(72) No dictator needs a parliament. ¬□ ≻ ∃
"It is not necessary that a dictator has parliament"

Although the examples above also possess wide scope *de re* interpretations for their subjects, these surface readings are too weak in order to express what the sentences are probably most commonly meant to convey (this argument is adopted from Penka 2002: 13). Assume for instance that (70) is evaluated in a world w_7 in which games are banned by law, while theorizing or speaking about them is not. In such a situation, the extension of (game) *player* is by assumption empty. Evaluated at this word w_7, (70) translates into the formula in (73).

(73) $\neg\exists x[player(x)(w_7) \wedge \forall w'[Acc(w)(w') \rightarrow has\_a\_partner\_at\_this\_game(x)(w')]]$

Furthermore, (73) is true iff (74) is false.

(74) $\exists x[player(x)(w_7) \wedge \forall w'[Acc(w)(w') \rightarrow has\_a\_partner\_at\_this\_game(x)(w')]]$

From the assumption that there are no players in w_7 it follows now that (73) is true. Thus, sentence (70) should be vacuously satisfied in such a model independently of the properties of players in other situations. This interpretation evidently is too weak to capture the meaning of (70), as it fails to take into account how alternative worlds are structured.

The split interpretation (75) on the other hand correctly makes the truth of the proposition contingent, relative to each world, upon the extensions of the quantifier restriction as well as on the denotation of the predicates in its scope.

(75) $\lambda w\neg\forall w'[Acc(w)(w') \rightarrow \exists x[player(x)(w') \wedge has\_a\_partner\_at\_this\_game(x)(w')]]$

(75) is true in w if in at least one alternative world that is compatible with how the game is played in w, the players do not have partners. Provided that the accessibility relation is irreflexive[25], the two readings can accordingly be kept apart by scenarios such as (76), which satisfies the split scope formula (75), but not the *de re* interpretation (73).

(76) *Model which only satisfies split reading of* (70):

	a	b	c	*For any $x \in D_e$ and $w \in D_w$,*	
w_0	†	†	†	'†'	*x is not a player in w*
w_1	●	○	○	'○'	*x is a player in w*
w_2	○	●	○	'●'	*x is a player in w and x has a partner in w*

Finally, note that a pure *de dicto* reading appears to be missing, (70) cannot be understood as a requirement that nobody be a solitary player, or that every player has to have a partner.

Crucially, the observation that (70) can be assigned the split interpretation (75) contradicts the assumptions of the control analysis of *need*, because control subjects systematically lack

[25]Otherwise, the *de re* reading would entail the split interpretation. If, for any given world w, $\neg\exists x[player(x)(w)]$, then $\forall w'[Acc(w)(w') \rightarrow \exists x[player(x)(w')]]$ cannot be true unless w' is not accessible from w.

opaque readings. Thus, *need* either represents a case of exceptional control which for some yet to be identified reason also tolerates split *de dicto* subjects (for semantics see fn. 24), or *need* falls in the same group as raising predicates. In absence of evidence for the former claim I will adopt the second option.[26]

A second complication for the control analysis is posed by the fact that transitive *need* passivizes. Passivization may be not entirely productive, but appears to be attested in too wide a variety of contexts in order to classify all of these instances as idioms, as witnessed by (77) to (79) below (partially adapted from a random internet search).[27] Among others, the examples vary w.r.t. the semantic class of the subject (quantificational, definite, indefinite, mass noun and nominalization; see (77)), as well as number marking (singular in (77) vs. plural in (78)) and tense specification of the verb (present in (77) and (78) vs. past in (79)):

(77) a. Noone (of you) is needed any more.
b. Nothing is needed except confidence.
c. The following information is needed.
d. A Marxist cadre organization is needed.
e. A regime change is needed in Washington.
f. Why a strategy is needed.
g. New fat is needed to clear old fat from the system.
h. When professional counseling is needed, the patient should call 555 HELP.

(78) a. New music rules are needed.
b. Sensible election safeguards are needed.
c. Neighbors are needed.

(79) a. New states, and their popular and electoral vote, were needed to re-elect Lincoln.
b. Pre-adaptation implies organs evolved before they were needed.

The alternative does not appear to involve adjectival passives, as documented by the possibility to express the extrenal argumuent in a *by*-phrase:

(80) a. To determine if an update is needed by clients [...]
b. A glossary of certain terms needed by the Non-Specialist
c. Services anticipated to be needed by exiting students with disabilities

Semantically, the argument alternation does not affect the predicate that is marked with overt passive morphology (*needed*), but the embedded, phonetically unrealized possession relation HAVE, as schematized by (81)b.

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[26]In addition, transitive *need* is compatible with an impersonal modal base, which is usually taken to signal a raising construction. (i) does e.g. not expresses a 'need on the part of the debate'.
(i) The debate needs an end.

[27]den Dikken et al. (1997: 1051) judge the comparable case with *want* in (i) as marginal, and note that for speakers who accept (i), the complement should be analyzed as a small clause (see main text).
(i) ?A hyppogriff is wanted.

(81) a. [NP_1 [need [$HAVE_{active}$ NP_2]] *Active transitive* need
b. [NP_2 [be_needed [$HAVE_{pass}$ t_2]] *Passive transitive* need

Transitive *need* contrasts in this respect with typical control verbs, which do not license long argument externalization into the higher clause:[28]

(82) a. $John_1$ tried to read the $book_2$. *Active control predicate*
b. *The $book_2$ was tried to (be) read t_2. *(Long) passive control predicate*

This systematic difference is unexpected from the perspective of the control analysis of transitive *need* as it fails to provide a derivation procedure for passive formation with *need* (see (81)b).

Before proceeding to the alternative to be advocated here, notice that while English lacks control clauses that fit the scheme in (81)b, instances of 'long passivization' are attested in languages such as German. The German counter-part of (82) is well-formed (see Haider 1993; Wurmbrand 2001; Reis and Sternefeld Reis 2004 for recent discussion):

(83) [weil das $Buch_2$ [$_{VP}$ zu lesen t_2] versucht wurde]
since the book$_{NOM}$ to read tried$_{pass\text{-}part.}$ was
"since it was attempted to read the book"

On a popular account of German long passive (Haider 1993; Wurmbrand 2001), the embedded clause of (83) is too small to contain the projection that introduces the subject (vP). Furthermore, according to current theories, elimination of the vP-node also entails the removal of the position(s) responsible for object case assignment (AgrO˚, v˚, SpecvP, SpecAgrOP,...). It follows that the deep object *das Buch* cannot surface inside the complement clause, either. Passive morphology on the matrix predicate furthermore blocks case assignment to the object. Hence, the object eventually has to raise to the superordinate subject position, where it receives nominative case, resulting in long passive.

Turning to passivization with transitive *need*, suppose that not only long passives in German owe their existence to clauses that are too small to contain a case assigner, but that 'small clauses' are also implicated in the transitive *need* construction in English. More precisely, if *need* embeds a small clause (in the technical sense) headed by an abstract HAVE, as in (84)b, passive now resembles German long passives in all relevant aspects:

(84) a. Noone is needed. (= (77)a)
b. [$_{AgrSP}$ $noone_2$ [$_{TP}$ is [$_{VP}$ $needed_{pass\text{-}part.}$ [$_{sc}$ HAVE t_2]]]]

Just as in (83), the deep object of (84)b (*noone*) cannot be case marked inside the small clause, driving it into the surface subject position. On this conception, the availability of passivization can be derived from an idiosyncratic lexical property of *need* that leads to selected manifestations of restructuring in English. Note finally that the two phenomena also resemble

[28]See also Wurmbrand (1999: 604), who uses similar arguments for a raising analysis of modals.

each other in their highly limited distribution, lending further support to a common analysis. Both languages only have a few verbs that license long passive.[29]

A challenge for this account is posed by the fact that passive is usually believed to be limited to predicates that project an external argument. A typical strategy to derive this condition is outlined in Marantz (1984), who employs the two assumptions in (85) (from Pesetsky 1995: 22):

(85) a. Passive morphology absorbs the external Θ-role.
b. Vacuous dethematization is impossible.

Clause (85)b blocks passivization of unaccusatives such as *arrive* and *seem*. Interestingly, transitive *need* satsifies both requirements in (85). In particular, dethematization does not apply vacuously, because passiviation is an argument changing operation that affects the abstract head HAVE, and not *need* itself. The fact that passive morphology is not overtly visible on HAVE but surfaces on *need* is expected inasmuch as overt *need* is the spell-out of '□_HAVE' in the same way in which *give* is the spell-out of 'CAUSE_TO_HAVE'. In both cases, morphology is realized on the form which instantiates the complex predicate at PF.[30] [31]

Active constructions with *need* differ from their passive variants w.r.t. two properties. First, for active *need*, a strategy must be found which makes it possible to assign case to the deep object of HAVE. Since the detailed deliberations motivating different choices are not immediately relevant for present concerns, I will not go into a discussion here. Second, as will be specified below, *need* shares morphosyntactic properties with modals as well as with lexical verbs.[32] This intermediate status of *need* can be taken as a sign that active *need* - unlike lexical verbs - actually undergoes movement, but that movement carries the head - unlike modals - only a short distance, from V° to T°. I will briefly report some relevant characteristics of the construction which are directly consistent with the short movement analysis only.

A first symptom for overt raising of *need* originates in the observation that active *need* optionally precedes adverbs such as *often*, *rarely* and *certainly* which demarcate a position at least as high as the left edge of VP:

(86) a. Work out which supplies you will need$_1$ often t_1, and
which you will need$_1$ less often t_1.
b. Target those you are likely to need$_1$ often t_1.

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[29]On German see Wurmbrand (2001). For Reis and Sternefeld (2004: 485), the group of verbs licensing long passive reduces to *versuchen* /'try'. As for English, it is not unlikely that *need* is the only member of its class.

[30]I am grateful to Elena Anagnostopoulou (p.c.) for discussion of this issue.

[31]Kayne (1984: 145) notes that *need* differs from other raising verbs in having a nominalization (*John's need for help*). The relation between nominal and verbal *need* might not be transparent, though.

[32]Transitive *need* is presumably taking part in the same ongoing historical develoment that affects its clause-selecting variants (*I needn't go; I don't need to go*), changing them from lexical verbs into auxiliaries. On the latter group see van den Wouden (1996).

(87) a. The companies do not invest in antibiotics, which most people need$_1$ rarely t$_1$.
b. ASD patients needed$_1$ rarely t$_1$ reoperation.

(88) I need$_1$ certainly t$_1$ a driver to install Windows XP.

Next, transitive *need* combines naturally with negative indefinite objects, and differs in this respect from regular lexical verbs such as *own* (see (90)):

(89) John needs no car

(90) ?John owns no car (Kayne 1998: 133; (27))

(91) John has no car (Kayne 1998: 133; (26))

Kayne (1998: 133), who observes a similar contrast between *own* and *have* ((90) vs. (91)), relates the improved acceptability of (91) to the application of short verb movement. If correct, Kayne's analysis therefore entails that *need* in (89) has also undergone movement.

In sum, the existence of *de dicto* readings for the subject and (long) passives certifies that transitive *need* does not group with control predicates, but rather emulates the behavior of raising verbs. The fact that the syntactic pattern of transitive *need* neither parallels that of auxiliaries, nor that of full lexical verbs was moreover taken to support the assumption that *need* originates like main verbs inside VP, but also shares properties of auxiliaries in dislocating - in this specific case from the base position in V° to T°.

6.2. THE ARGUMENT FOR SAHM

Supplied with the syntactic information that was presented in the previous section, the argument for SAHM can now be straightforwardly assembled. Recall that the negative subject in (70), repeated below, can be assigned a split interpretation in addition to the *de re* construal.

(70) No player needs a partner (at this game). $\neg\Box \succ \exists$

As was seen in section 6.1, the two readings are truth conditionally discriminated by models that lack players in the evaluation world all together. Such scenarios automatically verify the *de re*, but not the split interpretation.

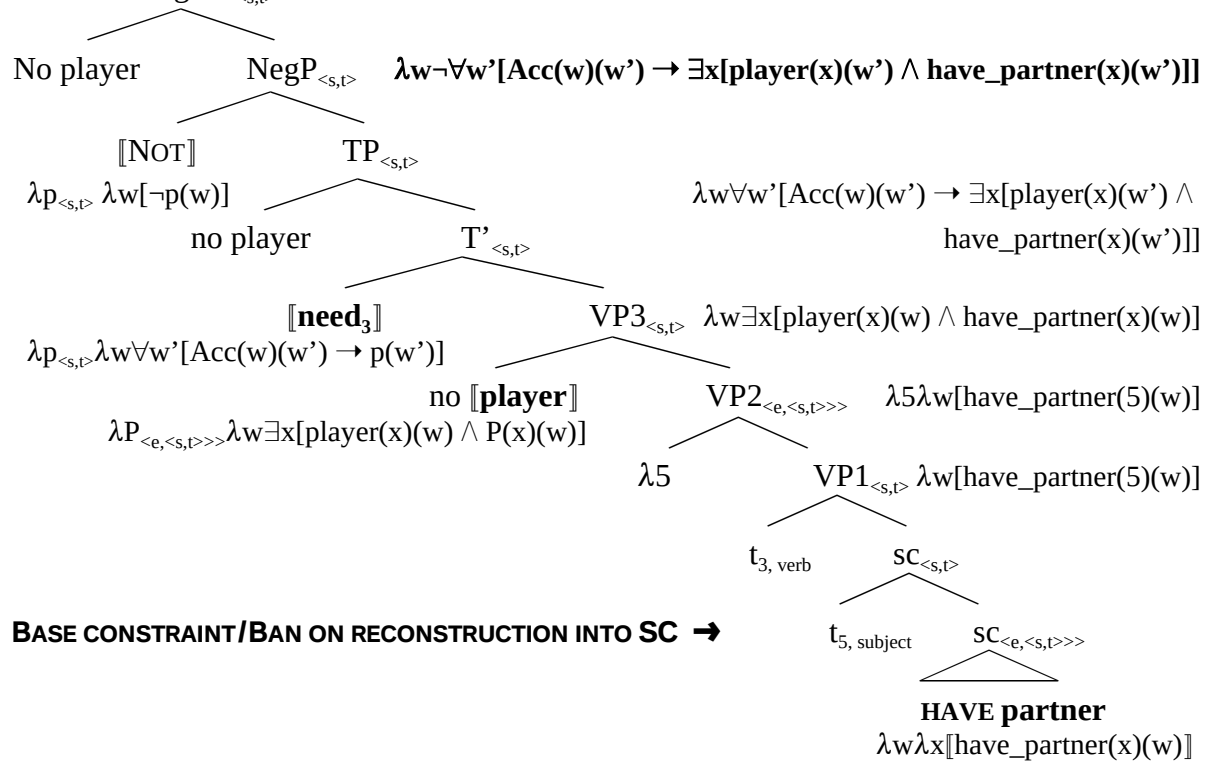
To recapitulate the main components of the analysis, the present account makes reference to a family of conditions on where a raised subject can be interpreted. More specifically, negative subjects need to meet a licensing requirement on their [+neg]-feature, which is satisfied by the highest subject copy inside the scope of abstract NOT. Economy considerations ensure that access to lower copies is blocked (for a principled exception see (92) below). Furthermore, reconstruction of strong NPs is limited to the next lower SpecTP (Strong Constraint), while small clauses and the base position of subjects (Base Constraint) are - following a wide-spread practice - considered barriers for reconstruction.

Turning to the details of the mapping procedure from syntax to interpretation, the analysis assigns to (70) the factorization in (92). The finite predicate *need* has raised from V° to T°, while

subject copies are distributed all over the tree from the base position inside the small clause headed by HAVE, up to AgrSP.

(92) a. No player needs a partner. ¬□ ≻ ∃ *circumstantial/stereotypical*

b.



As for the actual LF-output, the negative NP cannot be interpreted in the lowest available position, because this would violate the Base Constraint as well as the general ban on reconstruction into small clauses. But already the next higher copy, adjoined to VP, represents a possible LF-location for negative NPs. This is so as on the one side, VP does not qualify as a small clause.[33] On the other side, the VP-adjoined position also resides within the local scope of NOT, and therefore renders the [+neg]-feature visible for checking by the abstract negation. Provided that the subject is parsed as a VP-adjunct, it can be inferred that *need*, which in the target reading takes scope above the subject, must be interpreted in the derived head T°. On this specific interpretation of the data, (92) accordingly supplies a further argument in support of the hypothesis that head movement may have semantic reflexes (SAHM).[34]

[33]VP-adjunction in (35) of section 4.2 is prohibited because *can* - just like *need* - embeds a small clause, but is - contrary to *need* - generated in T°.

[34]Marcel denDikken (p.c.) observes that if a language possesses raising verbs such as *seem* that behave like *need* syntactically, raising contexts should support scope splitting and possibly *de dicto* readings. Idan Landau (p.c.) notes that past participles are usually assumed to stay in place. This property should disambiguate the perfect version of (70):

(i) No player needed a partner.

Although (i) indeed appears to lack a split reading, this is probably due to the fact that split readings are most natural in generic contexts. I have to delegate answers to these issues to future research.

Furthermore, the regulations for where exactly *no player* is to be interpreted in (92) do not have to be expressed in terms of merely descriptive generalizations as the Base Constraint. They can also be obtained from a slightly more articulated version of the economy condition on [+neg] that was already employed in the analysis of the modal example (35). Limiting in this way the use of the descriptive constraints of section 3.1 to a minimum hopefully contributes to more transparency as well as to a better understanding of the principles guiding reconstruction.

In (35) (*No boy can make the team*), the subject was fixed in SpecTP at LF, while the modal resided in Neg°, from where it took scope over the subject. Reconstruction therefore had both the effect of satisfying the [+neg]-criterion and of creating a logically independent interpretation. Following Fox (2000), satisfaction of the latter requirement - Fox's notion of Scope Economy - is a precondition for the dissociation between surface and scope positions of operators.

In contrast to (35), short subject reconstruction into SpecTP in (92) above would lead to a configuration that fails to respect Scope Economy, because *need*, which resides in T°, does not take scope over SpecTP. If the negative subject is on the other hand attached to VP3, a position that is located inside the scope of *need*, the resulting LF-representation conforms with the conditions on [+neg]-licencing as well as with Scope Economy. Hence, a system that combines principles regulating the distribution of negative NPs with Scope Economy correctly leads one to expect that VP3 is the final interpretive position of the subject.

The analysis is supported by a predication and a well-come consequence it entails for a minimal variant of (70). First, the semantic negation NOT in (70) is expressed above the derived position of *need*. Hence, one is correctly led to expect that the negation cannot be assigned scope below the modal, excluding a non-split *de dicto* interpretation ($\Box \succ \neg\exists$). Intuitively, (70) cannot be used as a prohibition to play the game without a partner, a claim equivalent to the proposition encoded in *It is necessary that every player has a partner at this game.*

Second, in (70), the distribution of the negative NP is regulated by the [+neg]-criterion, while the other constraints on reconstruction do not apply. Substituing in an isomorph constructions a negated universal for the subject, as in (93), should however activate the Strong Constraint, which is predicted to interfere with reconstruction below T°. As a result, the negative subject has to be parsed into SpecTP, a position which is outside the scope of the modal, bleeding the split construal. This expectation is corroborated, as evidenced by the observation that (93) appears to lack a split interpretation.

(93) Not every player needs a partner. $*\neg\Box \succ \forall/\neg\forall \succ \Box$

a. $\lambda w\neg\forall[player(x)(w) \rightarrow \forall w'[Acc(w)(w') \rightarrow has\_a\_partner(x)(w')]]$ *de re*
b. $\lambda w\neg\forall w'[Acc(w)(w') \rightarrow \forall x[player(x)(w') \rightarrow has\_a\_partner(x)(w')]]$ *split*

(93) expresses a proposition about actual players ((93)a), but for it to be true it is not sufficient that all the requirements on part of the players (to be able to play the game solitarily) are fulfilled in alternative worlds ((93)b). For this reason, (93) is e.g. not suitable to describe the relations made explicit in scenario (94), which is satisfies the *de re* construal but falsifies the split reading:

(94) *Model which only verifies split reading* (93)b:

	a	b	c	*For any $x \in D_e$ and $w \in D_w$,*	
w_0	●	●	●		
w_1	●	○	○	'○'	*x is a player in w*
w_2	○	●	○	'●'	*x is a player in w and x has a partner in w*

Summarizing the claims and findings of the current section, transitive *need* is generated inside V˚, where it selects a small clause headed by abstract HAVE, and overtly moves to T˚. This conception offers two advantages over competing control analysis which cannot account for split *de dicto* readings for the subject, and also fail to provide an insight into why transitive *need* permits passivization. The split interpretation of negative indefinites was derived from [+neg]-licensing, in combination the ban on reconstruction into small clauses. Finally, a contrast between negative indefinites and negated universals could be attributed to the workings of the Strong Constraint.

7. HEAD-MOVEMENT AND CYCLICITY

Any attempt to rescue a conservative analysis of HM in terms of displacement of terminals needs to address the widely reported obstacles which the standard account faces. Among these problems for HM, the most serious one is a corollary of the observation that HM can - unlike other movement operations - proceed counter-cyclically. This final section is dedicated to a brief explication of a possible strategy to avoid counter-cyclicity, while maintaining an orthodox view of HM (for recent discussion see Fanselow 2002; Matushansky, to appear; Roberts 2004; a.o.).

The concrete proposal is based on the intuition that (i) counter-cyclicity can be excluded by a specific interpretation of the Extension Condition and that (ii) HM leads to a change of the label of the projecting category. This change in label directly follows from the axiom that the head passes its specification up to the highest node in a projection. In a Bare Phrase Structure implementation, the label of a complex category is exclusively determined by one of the two nodes which make up that category. Thus, a node comprising α and β can be rendered as the set-theoretic equivalent of an ordered pair (using Wiener-Hausdorff-Kuratowski notation)[35] as exemplified in (95)a. The first member of the pair represents the category sponsoring the label, while the second one denotes the non-projecting node. HM of γ to a position adjacent to head α in (95)b results in a complex head α◦γ that formally differs from the original projecting node α.[36] Provided that HM applies as soon in the derivation as possible, this modification of the projecting head is accompanied by a change of label of the root node from α to α◦γ (label is marked by underlining):

[35]If the label is neither α nor β, this is not possible as {γ, {α, β}} is not an ordered pair.

[36]It is immaterial for present purposes how the head and its host are combined, and how ◦ is interpreted (i.e. substitution or adjunction).

(95) a. $\{\underline{\alpha}, \{\alpha, \beta\}\} = \langle\alpha, \beta\rangle$: = the node immediately dominating α and β, with label α

b. $\{\underline{\alpha\circ\gamma}, \{\alpha\circ\gamma, \beta\}\} = \langle\alpha\circ\gamma, \beta\rangle$: = the node immediately dominating $\alpha\circ\gamma$ and β, with label $\alpha\circ\gamma$

Moreover, the change in label can be interpreted as a sufficient criterion for the satisfaction of the Extension Condition. On a generalized reading, the Extension Condition expresses the requirement that each consecutive derivational step has to change the label of the root node, as formulated by (96):

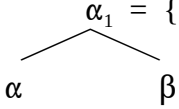
(96) a. For any set A and any $n > 0$, $\wp_n(A) = 1$ iff A is the label of the root node at step n of the syntactic derivation.

b. $\forall X,Y[\wp_n(X) \wedge \wp_{n+1}(Y) \rightarrow \neg X = Y]$

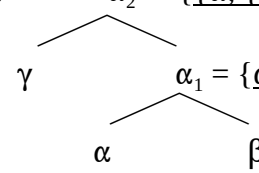
(96) maintains that the root nodes of two subsequent derivational steps involving movement must not bear identical labels. As HM leads to a change of label, and since the change of label affects the root node, which is the maximal projection of the head, HM now adheres to the Extension Condition.

Regular, cyclic movement of non-heads as in (97) observes the revised version of the Extension Condition (96) because movement takes place 'early enough' to affect the root label, as detailed by the trees in (97). In the derivational step from (97)a to (97)b, γ moves and is merged with the root category $\alpha_1 = \{\underline{\alpha}, \{\alpha, \beta\}\}$, which bears the label α. As the root label of the output set (label α_1) is not identical to the root label of the preceding step (label α), cyclic dislocation satisfies (96). This change of label reflects the two generalizations (i) the category which hosts the XP projects its label and (ii) the label is a structured object that contains information about the syntactic evolution of the tree. Moreover, in contexts of licit, cyclic XP-movement these variances can be detected in the root node.

(97) a. $\alpha_1 = \{\underline{\alpha}, \{\alpha, \beta\}\}$

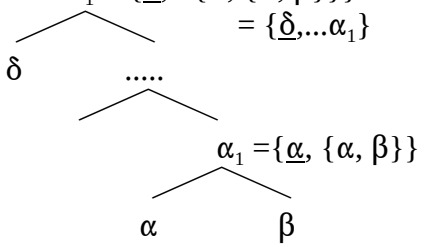


b. $\alpha_2 = \{\underline{\{\alpha, \{\alpha, \beta\}\}}, \{\{\alpha, \{\alpha, \beta\}\}, \gamma\}\} = \{\underline{\alpha_1}, \{\alpha_1, \gamma\}\}$

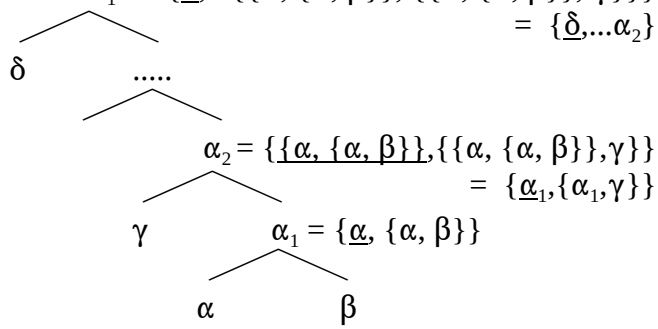


Conversely, counter-cyclic movement to non-head positions does not have any impact on the way the topmost head in the tree projects, as outlined by the diagrams in (98). (98)a depicts the larger structure consisting of α, β and δ, a proper subtree of which is targeted by counter-cyclic dislocation. The root node δ_1 bears the label δ. In contrast to (97), relocating the moved category γ in (98)b into a projection of α - SpecαP on a conservative interpretation - yields an output which preserves the root label δ. Thus, since attachment of γ does not induce a change of the root label, such dislocation processes, which are not sanctioned in current theories, also fail to satisfy the extension condition (96).

(98) a. $\delta_1 = \{\underline{\delta}, ...\{\alpha, \{\alpha, \beta\}\}\}$ $= \{\underline{\delta}, ...\alpha_1\}$



b. $\delta_1 = \{\underline{\delta}, ...\{\{\alpha, \{\alpha, \beta\}\}, \{\{\alpha, \{\alpha, \beta\}\}, \gamma\}\}\}$ $= \{\underline{\delta}, ...\alpha_2\}$



Further research has to specify a formalization of this intuition which will make it possible to determine whether such a move for eliminating the problem of counter-cyclicity leads to a sound and consistent set of assumptions.

8. CONCLUSION

The present study presented at attempt at isolating an argument in favor of the view that certain instances of HM must be computaed in the syntactic component (SAHM). If HM can be shown to uniformly display the same behavior w.r.t. its defining characteristics, this implies that a PF-analysis of HM is not viable (contra e.g. Boeckx and Stjepanovic 2001; Chomsky 2000, 2001; Harley 2004a). The search for SAHM also produced some new evidence for particular analyses of a number of phenomena.

First, the interaction of PPI licensing and negation was seen to provide a new argument for generating modals low and moving them to a higher head position in overt syntax (contra non-derivational approaches such as Cormack and Smith 1998, 1999, a.o.).

Second, the discussion yielded new diagnostics (involving NPIs and VP-fronting) for identifying the position in which subject NPs are submitted to interpretation.

Third, the deliberations resulted in a novel way for expressing restrictions on scope diminishment. On the one hand, the inability of negative NPs to undergo reconstruction was attributed to an LF-licensing requirement on the [+neg]-feature. This approach not only offers the advantage of deriving the behavior of negative NPs from independent principles, but also supports the hypothesis that negative NPs are semantically decomposed into their contradictories and an abstract negative symbol NOT (von Stechow and Penka 2001; Penka 2002). On the other hand, the reconstruction properties of strong NPs led to the formulation of a specific descriptive generalization blocking scope diminishment below T° for this group of NPs.

Finally, accumulative evidence undermines the assumption that transitive *need* embeds an abstract control complement (contra Larson et al. 1997). Rather, the propositional complement of *need* displays properties alike to small clauses. The analysis is most directly compatible with the position that the node that *need* combines with contains syntactically articulated, yet empty structure (contra e.g. Fodor and Lepore 1998). Moreover, some intitial observations about word order were seen to dovetail naturally with a short-movement account for *need*.

Numerous open issues remain, some of which have been singled out in the text. Illustrative among the remaining puzzles is the question why negated universals in their split readings fail to license exceptives. That is, the account owes an explanation for why (99)a is ill-formed given that, on the present conception, its underlying LF in (99)b as well as its semantics resembles that of the well-formed string (100) in all relevant respects (on exceptives see e.g. von Fintel 1994; Gajewski 2004). In both cases, a compositional translation procedure returns identical values for the universal NP together with the except phrase (node α in (99)b and (100)):

(99) a. *Not every player except the dealer can win. ¬◇ ≻ ∀

b. LF: [NOT [can [$_{\alpha}$ every player except the dealer] ...

(100) It is not possible that [$_{\alpha}$ every player except the dealer wins]. ¬◇ ≻ ∀

It might be possible to resolve this conflict by assuming that the except phrase undergoes (obligatory) QR to a node dominating negation (on QR of exceptives see Gajewski 2004).

APPENDIX

This appendix reviews the motivation for using negated universals (*Not every boy can be on the team*) in furnishing the argument for SAHM in section 4, instead of simpler cases of scope splitting with negative indefinites, or contexts without splitting. All together, there are three reasons for choosing negated universals over these alternatives: conditions on reconstruction (see §I), unattested readings (§II) and entailment properties (§III).

I. Prototypical examples of the split scope phenomenon involve indefinites, as in (101):

(101) No Styrian can be elected president of the USA. $\neg\Diamond \succ \exists$

However, it is well-known that the principles determining the scope of indefinites are more liberal than those responsible for fixing the scope of universals (see section 3.1). In particular, indefinites may freely reconstruct into a lower, non-finite clause in which they originate:

(102) A Styrian seems to John to be the governor of California. *seem* $\succ \exists$

But as was seen in section 4, the argument for SAHM is contingent upon the subject being interpreted no lower than in SpecTP. Given that indefinites cannot be employed to secure such a high interpretive position for the subject, standard instances of scope splitting like (101) do not provide suitable tests for SAHM.

II. In the scope splitting construction, the negation and the universal quantifier are combined into a single constituent. In principle, it should also be possible to study the interaction of modals with a universally quantified subject if the negation is introduced as a separate constituent in the superordinate clause, as in (103):

(103) It is not the case that every boy can make the team. $*\neg\Diamond \succ \forall$

Curiously, (103) does not seem to admit an inverse reading for the subject, though. This peculiar restriction disqualifies these analytic structures as possible candidates for probing the abstract representation of scope inversion with modals.[37]

[37]Descriptively, the c-commanding negation in (103) blocks subject reconstruction. This fact might be related to another observation. For some speakers, psych verb *seem* (i.e. *seem* accompanied by an experiencer) contrasts with evidential *seem* (without experiencer) in that the latter also admits a *de dicto* interpretation for universal subjects (see e.g. Sportiche 2005: 22 for French; Orin Percus, p.c.):

(i) Every boy seems to be listening *de re/de dicto*
(ii) Every boy seems not to be listening *de re/*de dicto*

As illustrated by (ii), negation in the lower clause appears to block reconstruction even for this more permissive group of speakers. One might wonder whether a unified account could be given for the effect of the low negation in (ii) and the c-commanding negation in (103), which both inhibit subject reconstruction.

III. Finally, the presence of negation in the cases with negated universals is motivated by the fact that corresponding sentences with positive polarity such as (104) display different entailment properties (see below for details):

(104) Every suspect can be innocent.

This logical difference has the consequence that detecting the subject reconstruction reading in (104) requires the evaluation of more complex scenarios, which in turn negatively affects the robustness of the judgements. The original examples with negated universals on the other hand allow one to avoid these additional complications. The reminder of this appendix expands on some of the details underlying this contrast.

(104) can in principle be assigned the three different interpretations listed in (105). These readings - the first two of which will be central for the further discussion - are the product of the alternating scope relations between the modal (∃w') and the quantificational subject (∀x), together with the option of binding the world variable of the quantifier restriction either locally, yielding an opaque/*de dicto* reading, or at a distance, resulting in the transparent/de re construal:[38]

(105) a. λw∀x[suspect(x)(w) → ∃w'[Acc(s)(w') ∧ innocent(x)(w')]] wide scope *de re*
b. λw∃w'[Acc(w)(w') ∧ ∀x[suspect(x)(w') → innocent(x)(w')]] narrow scope *de dicto*
c. λw∃w'[Acc(w)(w') ∧ ∀x[suspect(x)(w) → innocent(x)(w')]] narrow scope *de re*

With one exception, the three formulas are logically independent.[39] Of particular relevance is the fact that the narrow scope *de dicto* reading (105)b, which signals subject reconstruction, does not entail the wide scope *de re* reading (105)a. Thus, examples without negation such as (104) should also provide a suitable testing ground for SAHM for the two reasons that (i) (104) involves a strong quantifier, ensuring the option of narrow reconstruction below the modal, and that (ii) it is possible to detect the effects of reconstruction, because the reconstructed reading is stronger than the surface interpretation.

There is, however, a reason for choosing the original, more complex examples involving negated universals, after all. In order to discriminate the reconstructed reading from the surface interpretation in the simpler cases (104), it is necessary to also take into account the semantic opaqueness of the quantifier restriction, in addition to the scope permutation between the modal and the quantifier. But judgements about opaque readings of strong quantifiers are substantially weaker, and therefore notoriously hard to confirm. (Partially, this uncertainty is also reflected

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[38]Fodor (1970: 226ff) employed the terms 'specific transparent', 'non-specific opaque' and 'non-specific opaque' (for discussion see, a.o., Farkas 1997; von Fintel and Heim 2002: 70ff). A fourth, wide scope *de dicto* reading, as in (i), is excluded by the assumption that natural language only employs restricted quantification.

(i) λw∀x∃w'[suspect(x)(w') → ∃w'[Acc(w)(w') ∧ innocent(x)(w')]] wide scope *de dicto*

[39]The exception being that narrow scope *de re* (105)c entails wide scope *de re* (105)a.

in the recent debate about reconstruction properties of universals; see Lasnik 1999; Wurmbrand and Bobaljik 1999, and in particular Sportiche 2005: section 6.2).

More precisely, in order to find evidence for subject reconstruction with scope splitting, it is sufficient to take into account scenarios in which only the extension of the scope of the quantifier (S in (106)) changes across worlds, as schematized by (106)a below:

(106) a. *Not every* (R) *can* (S) *R: restriction; S: scope*

Evidence for $\neg \succ \Diamond \succ \forall$ requires models which vary $[\![S]\!]$ across worlds
$\exists w \exists w' [\neg [w = w'] \wedge \neg [[\![S]\!](w) = [\![S]\!](w')]]$

b. *Every* (R) *can* (S)

Evidence for $\Diamond \succ \forall$ requires models which vary $[\![R]\!]$ across worlds
$\exists w \exists w' [\neg [w = w'] \wedge \neg [[\![R]\!](w) = [\![R]\!](w')]]$

In contrast, testing subject reconstruction on the basis of (104) requires scenarios which additionally vary the quantifier restriction R, as in (106)b, resulting in semantically opaque contexts. This further demand on the models considerably complicates the process of establishing reliable intuitions.

To illustrate, consider the scenario in (107) that, when used in combination with the scope splitting construction, separates the surface from the reconstructed reading (see (108)):

(107)

	w_1		w_2	
	a	b	a	b
R	●	●	●	●
S	●			●

(108) *Not every* (R) *can* (S)

a. $\lambda w \neg \forall x [R(x)(w) \rightarrow \exists w' [Acc(w)(w') \wedge S(x)(w')]]$ *de re*
b. $\lambda w \neg \exists w' [Acc(w)(w') \wedge \forall x [R(x)(w') \rightarrow S(x)(w')]]$ split *de dicto*

In (107), the extension of the restriction remains constant across worlds. Still, the scenario distinguishes between the surface interpretation (108)a (which is evaluated as false) and the reconstructed reading (108)b (which is evaluated as true).

The simpler structure with positive polarity, schematized in (109), on the other hand reveals its ambiguity only if the extension of the quantifier restriction is modified across worlds.

(109) *Every* (R) *can* (S)

a. $\lambda w \forall x [R(x)(w) \rightarrow \exists w' [Acc(w)(w') \wedge S(x)(w')]]$ wide scope *de re*
b. $\lambda w \exists w' [Acc(w)(w') \wedge \forall x [R(x)(w') \rightarrow S(x)(w')]]$ narrow scope *de dicto*

Again, the goal is to identify evidence for the reconstructed reading, which once again exclusively emerges in scenarios that verify the *de dicto* reading ((109)b) only. The model (107) does not fall into this group, though. This is so because (107) assigns to the quantifier restriction values that essentially reduces it to a rigid designator ($[\![S]\!](w_1) = [\![S]\!](w_2) = \{a,b\}$). The scope

permutation between ∃ and ∀ in the formulas in (109) can accordingly be interpreted extensionally. As a result, the *de dicto* construal (109)b entails the *de re* reading (109)a (since $\exists x \forall y \phi \vDash \forall y \exists x \phi$). Thus, models like (107), in which the R-extension of (109) remains constant across worlds, cannot be used to isolate the reconstructed *de dicto* reading of (109).

Rather, finding the relevant evidence must be based on more complex scenarios such as (110), where the extension of the common noun denotation differs across worlds. The model in (110) satisfies formula (109)b, while (109)a is falsified.

(110)

	w_1		w_2	
	a	b	a	b
R	●	●		●
S	●			●

As mentioned above, judgements for the simpler sentences with universal subjects are therefore less robust than those for the original examples with negated universals. The intuitions seem more stable and easier to verify in the latter cases. Needless to say, these methodological considerations should be understood as such, and are not meant to imply that it is impossible for some deeper reason to use constructions with simple universal subjects in evaluating SAHM.[40]

[40]There is a further, unrelated reason for using negative indefinites. Only negative contexts provide a suitable environment for the NPI-data discussed in section test discussed in section 5.2.

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