

MODALS, RAISING AND A-RECONSTRUCTION

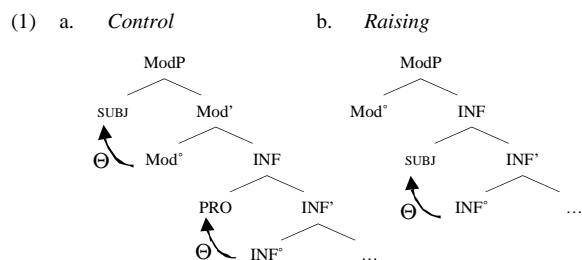
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1. INTRODUCTION

Standard view of modal constructions

control: modal assigns a theta role to the subject
 raising: modal does not assign a theta role to the subject

Theta Criterion: 1:1 relation between theta roles & arguments



- Raising vs. control is often correlated with different modal interpretations (though see Barbiers 1995 for arguments against this claim)

Ross (1969): root modals are transitive, epistemic modals are intransitive
 Roberts (1985): deontic modals assign a(n adjunct) theta role, epistemic modals do not assign a theta role

(2) Basic modal interpretations

- a. John must be the leak in the FBI (in view of the available evidence ...) *epistemic preferred*
- b. According to FBI regulations, FBI agents must wear suits (in view of what the law provides ...) *root/deontic preferred*

- *root/deontic*: express modal forces like permission, obligation, ability etc.
- *epistemic*: evaluation/qualification of the likelihood of the embedded proposition according to what we believe/know about the facts, background, situation, world etc.

Modal constructions involve raising:

- ❶ properties of the subject are determined by the lower predicate and not the modal—the subject in modal constructions starts out in the lower predicate
- ❷ modals verbs do not assign a subject theta role
- ❸ A-reconstruction exists: an A-moved Q-NP can be interpreted in (near) its base position (contra Lasnik, but not contra Chomsky)
- ❹ there is A-reconstruction in modal constructions (subject ends up, hence starts out in the lower predicate)

2. MODAL CONSTRUCTIONS INVOLVE RAISING

2.1 Expletive subjects

- root & epistemic modals allow expletive subjects (McGinnis 1993, Warner 1993, Kulick 1998)
- (3) a. There may be singing but no dancing on my premises Warner (1993:16)
 b. 'During the demonstration,' the Chief of Police instructed his officers, 'there may be windows broken by rioters, but there may not be looting of the goods behind those windows.' McGinnis (1993:63)
 c. There can be a party as long as it's not too loud
 d. There must be a solution to this problem on my table, tomorrow morning!
 e. There will be no complaints when we go to Aunt Cassandra!

⇒ The subject starts out in the lower predicate

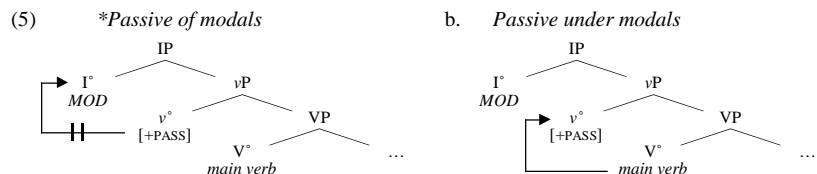
2.2 Passive in modal constructions

- passive of modal verbs is impossible; passive of main predicate is OK
- (4) a. *weil der Käse essen gemußt / gekonnt wurde
 since the cheese eat must-PART / can-PART was
 *'since the cheese was musted/canned to eat' ['somebody had to/can eat the cheese']
- b. weil der Käse gegessen werden muß/darf/soll/kann
 since [the cheese]-NOM eaten become must/may/should/can
 'since the cheese must/may/should/can be eaten'
- ⇒ Why do modals not passivize?
 ⇒ What is the structure of passive under modals?

2.2.1 Prohibition against passivized modals

Ordering restriction

- voice properties are encoded in v° (Kratzer 1994); a verb has to move to or through v° to check voice features; modals are in a position higher than v° , and cannot move down to v° (Cinque 1997a, 1997b)



[Some additional “attract or die” condition on checking is necessary to exclude movement of the passive features to the modal head (e.g., verbs are attracted by the features of functional heads, but attractors cannot move to satisfy their features; functional heads do not move unless they host a lexical verb)]

Argument structure restriction

- German: transitive and intransitive (unergative) predicates can be passivized; unaccusative predicates cannot be passivized

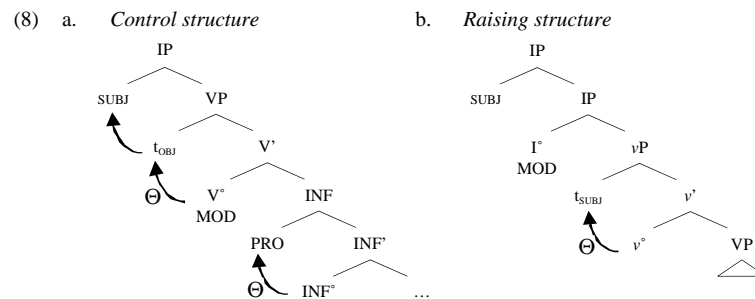
- (6) a. Er wurde am Tatort gesehen transitive PASS
 He was at the crime scene seen
 ‘He was seen at the crime scene’
- b. Es wurde getanzt unergative PASS
 it was danced
 *‘It was danced’
- c. *Es wurde (rechtzeitig) angekommen *unaccusative PASS
 It was (on time) arrived
 *‘It was arrived’

German passive: possible iff there is an underlying external argument

- (7) a. Es wurde zu tanzen beschlossen impersonal (control) passive
 It was to dance decided
 ‘It was decided to dance’ (=Somebody decided to dance)
- b. *Es wurde (zu) tanzen geschienen *impersonal (raising) passive
 It was (to) dance seemed
 *‘It was seemed to dance’
- c. *Es wurde (zu) tanzen gemußt *impersonal (modal) passive
 It was (to) dance must-PART
 *‘It was must(ed) to dance’

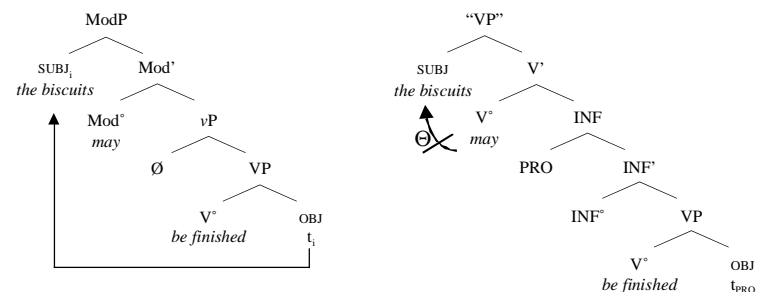
⇒ modals do not have an underlying external argument

- ⇒ control modals are unaccusatives; i.e., take an internal argument (which controls the embedded PRO subject)
- raising modals assign no theta role



2.2.2 Passive under modals

- (9) The biscuits may be finished by Paul Warner (1993)
- (10) a. *Raising structure* b. *Control structure*



Problem for control structure:

- ⚡: modal does not assign a theta role to (surface) subject; where does subject come from? original motivation for control structures disappears

Passive of the lower predicate affects the argument structure of the modal; modal has no independent argument structure
 ⇒ The subject starts out as an argument of the lower predicate

2.3 Case in Icelandic

- unmarked case for Icelandic subjects is NOM; certain verbs require a non-nominative subject (examples (11) through (13) except (12)c from Thráinsson & Vikner 1995:60)

- (11) a. Harald / *Haraldur vantar peninga ^{*NOM/*ACC}
 Harold-ACC / *Harold-NOM lacks money
 'Harold lacks money'
- b. Haraldi / *Haraldur líkar vel í Stuttgart ^{*NOM/*DAT}
 Harold-DAT / *Harold-NOM likes well in Stuttgart
 'Harold likes it in Stuttgart'

- verbs requiring quirky case-marked subjects embedded in a control construction: the matrix subject can only show up with NOM
- verbs requiring quirky case-marked subjects embedded in a raising construction: the matrix subject shows up with quirky case

- (12) a. Haraldur / *Harald vonast til að vanta ekki peninga ^{*NOM/ACC}
 Harold-NOM / *Harold-ACC hopes for to lack not money
 'Harold hopes not to lack money'
- b. Haraldur / *Haraldi vonast til að líka vel í Stuttgart ^{*NOM/DAT}
 Harold-NOM / *Harold-DAT hopes for to like well in Stuttgart
 'Harold hopes to like it in Stuttgart'
- c. Harald virðist ekki vanta peninga ^{*ACC}
 Harold-ACC seems not lack money
 'Harold seems not to lack money'

⇒ the case of the subject is determined by its predicate

- verbs requiring quirky case-marked subjects embedded under a modal: the subject **has to show up with the quirky case** (if the lower verb is not a quirky case-assigner, the subject shows up with NOM)

- (13) a. Harald / *Haraldur vill vanta peninga ^{*NOM/*ACC}
 Harold-ACC / *Harold-NOM will lack money
 'Harold tends to lack money'
- b. Haraldi / *Haraldur ætlar að líka vel í Stuttgart ^{*NOM/*DAT}
 Harold-DAT / *Harold-NOM intends to like well in Stuttgart
 'It looks like Harold will like it in Stuttgart'
- (14) a. Haraldi / *Haraldur verður að líka hamborgarar ^{*NOM/*DAT}
 Harold-DAT / *Harold-NOM must to like hamburgers
 'Harold must like hamburgers' (in order to be accepted by his new American in-laws)
 (Ólafur P. Jónsson, p.c.)
- b. Umsækjandann verður að vanta peninga ^{*NOM/*ACC}
 The-applicant-ACC must to lack money
 'The applicant must lack money' (in order to apply for this grant)

- ⇒ some speakers accept a nominative subject with the verb *seem* in (12)c. However, for all speakers, nominative is impossible in modal constructions; thus, the verb *seem* could be either a control verb or a raising verb (e.g., as in Italian), but modal constructions unambiguously qualify as raising constructions

The case of the subject is determined by the lower predicate and not the modal

⇒ The subject starts out as an argument of the lower predicate

2.4 Thematic properties of the subject in modal constructions

- epistemic modals: quite uncontroversial that they do not assign a theta role to the subject
- root modals: less uncontroversial whether there is a thematic relation between the modal and the subject

Clearly no thematic relation

- passive, *there*-insertion (repeated here)
- (15) a. There can be a party as long as it's not too loud
 b. The biscuits may be finished by Paul
- Inanimate subjects: root modality is not always 'applied' to the subject (Newmeyer 1975, Kulick 1998 among many others)
- (16) a. An opening hand must contain thirteen points Newmeyer 1975
 b. Icicles may hang from the eavestroughs McGinnis 1993
 c. The cat may be put out now McGinnis 1993
- Weather-*it* subjects
- (17) a. It can rain in the Antarctic
 b. In order for the crop not to fail, it must rain tomorrow
 c. In order for the ski race to take place tomorrow, it must snow tonight; it can be sunny tomorrow, but it must be cold, and it must not rain.

How do we know these modals are root modals?

- Hackl (1998; following a suggestion by S. Iatridou): epistemic modals are pragmatically odd if it is clear to all participants in the discourse that the proposition in question is true in the actual world.
- (18) Context: It is raining heavily and everybody involved in the discourse is looking out the window
- a. ??Hmm. It might rain really hard here. ??epistemic
 b. Hmm. It can rain really hard here. root

(19) Context: Somebody visits his friends who live in a dorm; entering the dorm, he sees that there is a big party going on

- a. ??Oh. There might be a party in this dorm
 b. Oh. There can be a party in this dorm
- ??epistemic
root

⇒ if root modals assign a theta role to the subject, they do so optionally

'Directed' root readings

- intuitively, there is a thematic relation between the modal and the subject in *directed deontic* interpretations (Barbiers 1995)

- (20) a. John must go to Alaska
 ⇒ John is in an obligation relation
- b. Mary can/may go to Alaska, too
 ⇒ Mary is in a permission relation

- are these relations theta roles?
- intrinsic part of the meaning of *obligation* or *permission* seems to be that there is somebody who gives the order or permission and somebody who receives the order or permission; neither of these 'arguments', however, have to coincide with the subject in a root modal construction

- (21) a. His boss told John that Mary must be home when the murder happens
 b. Mulder must die
 c. The old man must fall down the stairs and it must look like an accident
 d. Your children may play in the garden but they cannot go into the barn

⇒ obligation, permission etc. do not have to be directed towards the subject (Barbiers 1995, McGinnis 1993)

Roles/functions like 'obligee' or 'permissée' etc. do not have to coincide with a specific syntactic argument in the sentence

⇒ the determination of these 'roles' cannot be seen as a mapping between theta roles and syntactic arguments

Context dependency

- the *possible* (but not necessary) association of the subject with the 'obligee' or 'permissée' is purely contextual (comes in as part of Kratzer's conversational background); different contexts force different interpretations (e.g., directed vs. non-directed)

Alternatives?

- root modals are ambiguous between control (directed) and raising (non-directed)
 - each modal must have multiple lexical entries (unnecessary in Kratzer's approach)
 - passive problem remains:

- (22) The biscuits must be eaten by Fred/by your dog
- i. Fred has the obligation to eat the biscuits
 ii. Somebody has to make sure that the dog eats the biscuits

⇒ passive is incompatible with control structure, but both readings are available in passive

- root modals assign a(n optional) theta role but are nevertheless raising constructions
 - adjunct theta role: Zubizarreta (1982), Roberts (1985); not subject to theta criterion
 - 'weak' theta criterion

- (23) a. **Theta Criterion** Chomsky (1981:36)
 Each argument bears one and only one Θ -role, and each Θ -role is assigned to one and only one argument.

- b. **The Footnote** Chomsky (1981:139; fn. 14)
 "Note that the Θ -criterion, while not unnatural, is not obviously correct. It is rejected in Jackendoff's pioneering work on this topic (Jackendoff (1972)). He argues that, e.g., in "John deliberately rolled down the hill" *John* has a dual Θ -role, as agent and as theme. I will assume that such cases should be dealt with by modification of Θ -role assignment rather than by modification of the Θ -criterion, though it is not obvious that this decision is the right one."

- (24) a. **Weak theta criterion**
 Each argument bears a theta role, and each Θ -role is assigned to one and only one argument

⇒ are the two approaches (optional/adjunct theta role vs. no theta role) distinguishable?

Assuming an optional theta role seems to be equivalent to the assumption that the relation between the subject and the modal is not fixed (i.e., determined by context)

2.5 Scope properties of the subject in modal constructions

We'll come back after the following...

3. A-RECONSTRUCTION¹

A-movement (raising) yields scope ambiguities:

- (25) Some politician is likely to address John's constituency. (May 1977)
 (Ambiguous scope), possible interpretations:
- a. [Some politician] is likely [~~some politician~~] to address J's constituency.
 \exists politician » likely
- b. [~~Some politician~~] is likely [some politician] to address J's constituency.
 likely » \exists politician
- a' **There is a** politician, e.g. Rockefeller, who is **likely** to address John's constituency.
 b' It is **likely** that **there is some** politician (or other) who will address J's constituency.
- (26) Someone from New York is likely to win the lottery. (Fox 1999)
- a. [Someone from NY] is likely [~~Someone from NY~~] to win the lottery. \exists » likely
- b. [~~Someone from NY~~] is likely [Someone from NY] to win the lottery.
 likely » \exists
- a' There is someone, who happens to be from NY, who has bought more than half the available tickets and it is therefore likely that this person will win the lottery.
 b' More than half the available tickets were purchased in NY and thus it is likely that the winner will be someone (whoever it is) from there.

An A-moved quantifier may scope in its raised (a) or base (b) position.

⇒ Scope possibilities provide a test for raising structures for even root modals.

The Challenges

- Chomsky 1995:327

"... reconstruction in the A-Chain does not take place, so it appears"

- Lasnik 1998, Lasnik 1998 (to appear):43

"... there is no A-movement scope reconstruction ... A-movement leaves no trace (i.e., copy)."

⇒ If substantiated, it is not clear that we can use scope ambiguities to argue for a raising construction for modals.

⇒ (It is also not clear that we can't, if modals and raising systematically pattern together).

¹ We have not included all important contributions to this topic here, but have tried to credit original sources for key observations and arguments. For a sampling of work on A-reconstruction in raising: Lebeaux 1995, Hornstein 1995, 1996 Romero 1997, Fox 1998, 1999, Sauerland 1998a, 1998b, Sportiche 1996...

The Challenges:

I Missing Non-Violations of Principle B/C

(Chomsky 1995)

- (27) a. *John expected [him to seem to me [t to be intelligent.]] Chomsky 1995:327
 ⇒ Reconstruction of *him* (to *t*) would avoid a condition B violation at LF.
- b. * He seems to John/him [t to be expected [t' to win]] Lebeaux 1995
 ⇒ Reconstruction of *him* (to *t'*) would avoid a condition B/C violation at LF.

- Chomsky: Positing A-reconstruction creates new BT problems.

II Missing Readings:

(Chomsky 1995, Lasnik 1998)

- \forall — *seem* — *not* Chomsky 1995:327 < Zubizarreta 1982 < Chomsky

- (28) a. (it seems that) everyone isn't there yet $\forall \gg \neg, \neg \gg \forall$
 b. everyone seems [t not to be there yet] $\forall \gg \neg, * \neg \gg \forall$

- *Negative Quantifiers don't lower:*

- (29) a. Noone is certain to solve the problem.
 b. No large Mersene number was proven to be prime. Lasnik 1998:93

⇒ Neither of these allows a lowered reading, e.g., (a): (contrast *someone is certain...*)
 ≠ It is certain that noone will solve the problem.

- *Universals don't reconstruct* (when the readings are distinguishable)

- (30) Every coin is 3% likely to land heads. Lasnik 1998:93
 ≠ It is 3% likely that every coin will land heads. (True iff 5 coins)

- Lasnik: Where we should find A-reconstruction, we don't.

III Specific vs. non-specific (of indefinites) is not scope.

(Lasnik 1998)

- (31) Some politician is likely to address John's constituency. =(25)

Lasnik 1998, Lasnik 1998 (to appear):94 "On the first reading of [(25)] discussed by May, the speaker has a particular individual in mind (a politician, in this instance), but, for some discourse reason or other, does not identify that individual. On the second reading (the 'lowered' one), the speaker does not have any particular individual in mind. *The apparent ambiguity might then fall under theme-rheme properties, the 'wide scope' quantifier being a theme or topic.*"

- (32) a. Some politician addressed John's constituency.
 ... namely Rockefeller.
 ...I can tell by all the balloons and flags on the green. Lasnik 1998:94

- Scope is a relation among quantificational elements. You can't meaningfully talk about scope if there is only a single quantificational element. Yet, even when scope is not at issue, we can talk about specific/non-specific, indeed, we have reliable intuitions.

• Lasnik_{CLAIM}: What looks like A-reconstruction isn't.

The Response:

The challenges are intriguing, and suggest that we do not understand all the factors influencing the availability of non-overt scope interpretations. Syntax restricts the set of possibilities (indicates trace positions, restricts QR, and interacts with binding theory) but the observed possibilities are even more limited. This is exactly the state of the art in the study of non-overt scope interpretations derived by QR, so it shouldn't be so surprising. Our goals here are to show:

Syntactic A-Reconstruction Exists (May 1977)
 A Q-NP in the matrix clause can lower into the embedded clause, and this is not achieved by a semantic/interpretive rule but is syntactic.

A-Reconstruction : Raising Correlation (Lebeaux 1995)
 A Q-NP in the matrix clause can scope under \forall in the embedded clause only if the Q-NP raised out of the embedded clause (i.e., started out there).
 A trace is implicated.

3.1 Missing Readings

- **I:** \forall — *seem* — *not* Chomsky 1995:327 < Zubizarreta 1982 < Chomsky

- (33) a. (it seems that) everyone isn't there yet $\forall \gg \neg, \neg \gg \forall$
 b. everyone seems [t not to be there yet] $\forall \gg \neg, * \neg \gg \forall$

- **II:** *Negative Quantifiers don't lower:* Lasnik 1998:93

- (34) a. Noone is certain to solve the problem.
 b. No large Mersene number was proven to be prime.

⇒ Neither of these allows a lowered reading, e.g., (a): (contrast *someone is certain...*)
 ≠ It is certain that noone will solve the problem.

- **III:** *Universals don't reconstruct*

- (35) Every coin is 3% likely to land heads. Lasnik 1998:93
 ≠ It is 3% likely that every coin will land heads. (True iff 5 coins)

Chomsky 1995:327 "[T]here is no reconstruction to the trace position in [(33b)]... The quantifier interactions [May's examples-SW&JDB] could result from adjunction of the matrix quantifier to the lower IP... But reconstruction in the A-chain does not take place, so it appears."

Lasnik 1998:94 "These facts [lack of lowered readings for universals and negatives-SW&JDB] suggest that there is no quantifier lowering."

In other words:

Lasnik: The examples used to show lowering are problematic (is specificity scope? how reliable are paraphrases?). When we really know we're dealing with scope (I-III, above), we find there is no lowered reading.

Chomsky: Lowering exists, of the kind discussed in detail in the previous section, but interpretation in the trace position doesn't seem to be the appropriate mechanism, as it predicts reconstruction too widely. The kind of gaps and irregularities and sensitivities to different lexical items is typical of QR (adjunction), and not typical of A-movement, hence adjunction is a better candidate. Also, adjunction to IP is somewhat higher than Spec,IP and may be just high enough to escape the scope of embedded negation in (33b). [Chomsky, personal communication June 1999].

Where do we stand?

- Lasnik is not correct (=section 3.3). There *are* demonstrable cases of lowered readings. The phenomenon of "lowered readings" in raising constructions exists and must be accounted for.
- True, not all cases of A-movement reconstruct, but:
 - Does the lack of *some* expected non-overt readings challenge the premise that there exist non-overt readings (and that the theory must therefore account for them)? Answer: of course not. Non-overt scope exists, we just don't fully appreciate how it is constrained.
- Note that in the study of non-overt scope qua QR:, we know that there are a host of factors involved: existentials are radically different from universals which are in turn possibly different from (overtly moved) wh-words. Different quantifiers (each. vs. every) differ in "ease" of getting certain interpretations. There is a healthy literature seeking arguing that there are independent reasons why indefinites can appear to scope higher than QR would allow; see Reinhart 1997x, for an overview and a specific proposal. See also Fox & Sauerland 1997 on one set of extra-wide-scope universals.

For our purposes, the most important thing is: (Lebeaux 1995, see section 3.3)

A-Reconstruction : Raising Correlation
 A Q-NP in the matrix clause can scope under \forall in the embedded clause only if the Q-NP raised out of the embedded clause (i.e., started out there).

- ⇒ Regardless of the exact mechanism (interpretation in trace position or QL/adjunction), if this correlation holds (as it apparently does, cf. (63)), we can use lowered scope as a diagnostic for movement.

3.1.1 Ancillary Comments: Can we do any better? Not really, but...

(36) Every coin is 3% likely to land heads. Lasnik 1998:93
 ≠ It is 3% likely that every coin will land heads. (True iff 5 coins)

(37) Context: There are **three** coins.

- One coin is 38% likely to land heads.
- i. One of the coins is weirdly weighted in favour of tails.
- ii. ?# It is 38% likely that only one coin will turn up heads.

vs.

(38) Context: There are **two** coins.

- One coin is likely to land heads.
- ii. √ It is likely that only one coin will turn up heads.

- It's not clear that "n% likely" and "likely" are syntactically equivalent...

But let's say that the pattern is essentially as presented by Lasnik, what is the generalization?:

(39) a. (Non-specific) existentials **may** be interpreted in (or near) the trace position.
 b. Universals **may not** be interpreted in (or near) the trace position.

- Is this a mysterious division or one which can be assimilated to something we know independently?

(40) a. (Non-specific) existentials **may** be pronounced in (or near) the trace position.
 b. Universals **may not** be pronounced in (or near) the trace position.

(41) a. Someone seems to be in the room.
 b. There seems to be someone in the room.

(42) a. Everyone seems to be in the room.
 b. *There seems to be everyone in the room.

(43) a. There seems to have been someone killed.
 b. *There seems to have been everyone killed.

(44) a. ?There seems to have arrived a ship.
 b. *There seems to have arrived every ship.

- The expletive (there) itself does not appear to be responsible for the definiteness effect (cf. German, Icelandic, Yiddish in which it is absent or manifest in different ways).
- One approach is to treat the expletive as a dummy element, inserted at PF to satisfy the EPP (English) or the V2 requirement (German, Icelandic). Bobaljik 1999:

(45) A range of possibilities: (± effect on PF, ± effect on LF)

a. $\begin{matrix} \text{copy} \dots \text{copy} \\ \wedge \\ \text{PF LF} \end{matrix}$ "overt movement no reconstruction"	b. $\begin{matrix} \text{copy} \dots \text{copy} \\ \quad \\ \text{LF} \quad \text{PF} \end{matrix}$ "LF movement"
c. $\begin{matrix} \text{copy} \dots \text{copy} \\ \quad \\ \text{PF} \quad \text{LF} \end{matrix}$ "overt movement + reconstruction"	d. $\begin{matrix} \text{copy} \dots \text{copy} \\ \wedge \\ \text{PF LF} \end{matrix}$ "LF movement, +reconstruction"

- This leaves the negative quantifiers in II, about which we have nothing to say at this point.

This is a general problem, and at present leaves no means to decide between Chomsky (QL) and A-reconstruction, but a decision between these is not (for present purposes) important.

3.2 Condition B effects.

(46) a. *John₁ expected [him₁ to seem to me [t to be intelligent.]] Chomsky 1995:327
 ⇒ Reconstruction of *him* (to *t*) would avoid a condition B violation at LF.

b. *He₁ seems to John/him₁ [t to be expected [t' to win]] Lebeaux 1995
 ⇒ Reconstruction of *him* (to *t'*) would avoid a condition B/C violation at LF.

Yes, but...

Lack of reconstruction (or lack of A-trace, as Lasnik suggests) would also yield problems for condition B:

(47) a. *John/He₁ seems to me [t to be expected to like him₁] (vs. *himself*)
 b. *He₁ was expected [t to seem to him₁ [t to like him₁]]

- For principle B, the entire A-chain (base, surface and intermediate positions) of the pronoun are relevant.
 (46a) is correctly excluded iff the surface position of the pronoun is relevant,
 (47a) is correctly excluded iff the base position of the pronoun is relevant,
 (47b) is correctly excluded iff the intermediate position of the pronoun is relevant,

(48) The following assumptions cannot *both* be true:

- a. Binding Theory (Principle B, and maybe C) holds only at LF
- b. Pronouns, occupy one and only one position at LF.

- Whatever these facts challenge though they do not pose a specific challenge to a theory that countenances A-reconstruction. I.e., (46) is no more a challenge to A-reconstruction than is (47) an argument in favour of it.

- The observation is that Condition B and C seem to require reference to the whole A-chain, i.e., in terms of Lasnik & Saito 1992 they are “everywhere conditions” (as opposed to Condition A which needs to be satisfied only once, and perhaps requires c-command at LF). This is the upshot of Lebeaux 1995. One may choose to state this as derivational conditions, without an intermediate level of S-structure with the same effect.

⇒ However this is to be implemented, it is orthogonal to the question of A-reconstruction if scope is truly a question of syntactic positions, as we will show in the next section.

3.3 \exists Syntactic Reconstruction in Raising Constructions:

3.3.1 *Scope Trapping* (Lebeaux 1995, Hornstein 1996) (part 1 of argument)

(49) *Scope Trapping I* (May 1977)

No agent_i was believed by his_i superior to be a spy for the other side.

- No reading analogous to: “It was believed that no agent was a spy for the other side”

- (49) turns out to be inconclusive, as negative quantifiers resist A-reconstruction anyway

(50) *Scope Trapping II* (after Lasnik 1998:95)

- Some professor is believed by the administration to be a tyrant.
- Some professor_i is believed by his_i students to be a tyrant.

- can be paraphrased: It is believed by the admin. that some prof. is a tyrant.
- cannot be paraphrased: *It is believed by his_i students that some prof._i is a tyrant.

(51) *Scope Trapping III* (a more minimal, but fuller paradigm)

- Some politician seems to me to have addressed John’s constituency.

There is some politician, who (it seems to me) has addressed J.’s constituency.
It seems to me that there is some politician who has addressed J.’s constituency.

- Some politician_i seems to his_i opponent to have addressed John’s constituency.
- Some politicians_i seem to each other_i to have addressed John’s constituency.

There is some politician (x) who, it seems to (x)’s opponent, addressed J.’s const.
*It seems to (x)’s opponent, that there is some politician (x) who has addressed J.’s c.

- **Lasnik:** Examples of the form in (50) are also inconclusive:

“... [I]t is not clear what we can conclude from the fact that a sentence cannot be paraphrased by an ungrammatical sentence (in this case one that violates the Weak Crossover constraint). That leaves the discourse test summarized above: Does the

speaker have an individual in mind or not? And it does seem that [(50b)] can be felicitously uttered under either circumstance, as illustrated in...” Lasnik 1998:95

(52) Some professor is believed by his students to be a tyrant.

- Howard Lasnik is believed by his students to be a tyrant.
- Some professor (or other), I have no idea exactly who, is believed by his students to be a tyrant.

Lasnik is correct in that the specific v. non-specific asymmetry *need not* be equated with scope, but when non-specific and lowered readings can be teased apart, then *Scope Trapping* blocks a lowered reading.

- Lasnik’s example involves passive of an intensional (scopal) ECM verb — which adds some complexity to the judgments. However, the sentence appears not to have a reading in which the quantifier is in the scope of the intensional verb (JDB):

(50b) \neq It is the belief of the students that some professor, whoever he is, is a tyrant.

Contrast: (caution: PRELIMINARY judgements)

(53) Some professor is believed by the complaints committee to be a tyrant...
... and now they are trying to find out who.

- A linguistics professor is believed by the administration to have committed fraud.
- An economics professor is believed by his students to have committed fraud.

- This still leaves the (apparent) reliance on ungrammatical paraphrases, though.

3.3.2 *Quantifier-Quantifier Interactions: Demonstrable Scope*

(55) a. Someone seems [*t* to love everyone]. Aoun & Li 1993:21

overt scope: \exists person (x) | \forall person (y) [x loves y] 1 person
non-overt scope: \forall person (y) | \exists person (x) [x loves y] person \geq 1, varies with \forall

- A dog seems to have chased every cat.

The dogs may be different, depending on choice of cat.

Surprising Discovery: *Scope Trapping Applies Here Too*
(Lebeaux 1995; refinements Fox 1999, Romero 1997)²

(56) a. Two women seem to be expected to dance with every senator. (Lebeaux 1995:64-5)

- i. $2x \forall y$ (there are two women, and they dance with every senator)
ii. $\forall y 2x$ (every senator has two women who dance with him—not necessarily the same two women)

*Hilary and Janet seem to be expected to dance with D'Amato,
Jane and Joan seem to be expected to dance with Kennedy, ...*

b. Two women seem to each other to be expected to dance with every senator.

- i. $2x \forall y$ (there are two women, and they dance with every senator)
ii. $*\forall y 2x$ (every senator has two women who dance with him—not necessarily the same two women)

(57) a. Someone seemed (to Bill) to be reviewing every report.³ Hornstein 1995:160
 $\exists \gg \forall, \forall \gg \exists$
possible that different reviewer for each report

b. Someone_i seemed to his_i boss to be reviewing every report.
 $\exists \gg \forall, * \forall \gg \exists$
not possible that the choice of reviewer varies with report

c. Someone_i seemed to himself_i to be reviewing every report.
 $\exists \gg \forall, * \forall \gg \exists$
not possible that the choice of reviewer varies with report

- In these examples, the specific vs. non-specific distinction for the indefinite is beside the point. What is important is the relative scope, and, in particular, the possibility (a) versus impossibility (b)-(c) of non-overt scope, as diagnosed by the possibility of the women varying with the senators, or reviewers with reports.

Potentially Clearer Examples (Fox 1999:160)

(58) a. [At least one soldier]_i seems (to Napoleon) [t to be likely to die in every battle].
b. [At least one soldier]_i seems to himself_i [t to be likely to die in every battle].
c. [At least one soldier]_i seems to his_i commanders [t to be likely to die in every battle].

(59) a. One soldier is expected (by Napoleon) [t to die in every battle].
b. One soldier_i is expected by his_i commander [t to die in every battle]. Fox 1999:160

² Fox 1999:fn.8, notes “similar data” in Aoun 1982, attributed to Luigi Rizzi. We haven’t tracked this down.

³ The judgements here aren’t always crystal clear. Varying the verb and object yields sentences which sometimes allow wide scope for an embedded object (across a bound pronoun) for some speakers. One such example is (i).

(i) At least one student seemed to himself/his roommate to have failed every exam. (JDB’s judgement)

A context which makes this rather felicitous is, e.g., a report on an exit poll outside the building where examinations are taking place. This may have to do with environments for (apparent) “long QR”, which have to do with tense and event quantification. See Fox and Sauerland 1997.

⇒ The surface scope in these sentences is odd, given world knowledge: it would be strange to expect that one particular soldier (Soldier Schwejk) will die in every battle. Pragmatics thus strongly favours the non-overt reading, in which the soldier varies with the battles. $\forall \gg \exists$.

• This reading—the only plausible one—is unavailable in (58b,c) and (59b).

⇒ This argues for two conclusions together, as was Lebeaux 1995’s point (pp. 64ff):

The non-overt scope in these sentences is NOT due to QR of \forall to matrix clause; non-overt scope is due to lowering of the raised Q-NP into the embedded clause.

⇒ If QR into the matrix clause were possible (across an intervening PP), why would it be blocked just in case that PP contained an anaphor/bound pronoun?

What would block QR ?

(60) a. [[Every battle]_b [[Some soldier]_s is expected [pp by Napoleon] [(t_i) to die in t_b]]]
QR | _____ |

b. [[Every battle]_b [[Some soldier]_s is expected [pp by his_s comm] [(t_i) to die in t_b]]]
*QR | _____ ? _____ |

⇒ Note that crossover is not at issue here, as the Q-NP undergoing QR (battle) has no relationship to the pronoun (or anaphor) which is legitimately bound by Q-NP (soldier).

Important: the configuration is OK when raising is not involved:⁴

(61) a. A (different) critic_i showed his_i lover every Rembrandt.

b. A (different) student_i complained to his_i advisor about every syntax problem.

(62) [[Every syntax problem]_p [[A student]_s complained [to his_s advisor] [about t_p]]]
QR | _____ OK _____ |

Complement to raising predicate is opaque to QR:

(63) Mary_i seems to two women [t_i to be expected [t_i to dance with every senator.]]
(Lebeaux 1995:65)

- i. $2x \forall y$ (there are two women, and they think Mary is expected to dance with every senator)
ii. $*\forall y 2x$ (for every senator there are two women—not necessarily the same ones—who expect Mary to dance with him)

⁴ On scope in double-object constructions, see Bruening 1999. As is well-known (Larson 1988, when the two objects are Q-NPs, the second *cannot* take scope over the first ($*\forall \gg \exists$ in *Ozzy gave someone everything.*), but Bruening notes that the second object *can* take scope over the subject:

(i) A (different) teacher gave me every book. (ii) A different waiter filled my glass with each drink... unless all three NPs are quantifiers (in which case only 2/6 possible scopes emerge). The sentences in (61) implicate covert raising of the universal to achieve this.

Hilary and Janet expect Mary to dance with D'Amato,
Jane and Joan expect Mary to dance with Kennedy, ...

- ⇒ If the scope ambiguities just considered arise from QR of the embedded \forall into the matrix clause, then (even if there was an account of the “trapping” cases—which there isn’t) there would be no account of the lack of ambiguity in (63).

A-Reconstruction : Raising Correlation
A Q-NP in the matrix clause can scope under \forall in the embedded clause only if the Q-NP raised out of the embedded clause (i.e., started out there).

LF - Coherence
Fox 1999, Hornstein 1995, Lebeaux 1995, Romero 1997
“LF must be a coherent representation, in the sense that an element occupies a particular position at LF (rather than occupying several positions at once)”
[i.e., scope and binding are read off the same representation]

MOREOVER...

Scope Trapping is **not** the result of shaky intuitions about ungrammatical paraphrases.

- The examples in this subsection involve relative quantifier scope, and in particular, judgements about whether or not the existential can vary with the universal. (Specific vs. non-specific is beside the point.)
- Most importantly, relevant paraphrases that make the scope clear are grammatical:

(64) Compare PP-fronting:

- a. In every battle, at least one soldier seems to himself to be likely to die. $OK \forall \triangleright \exists$
b. In every battle, one soldier is expected by his commanders to die. $OK \forall \triangleright \exists$

- ⇒ The excluded *meanings* are logically coherent (indeed, more so than the admitted ones in Fox’s examples). What is really going wrong here is thus something syntactic, and it has to do with the anaphor and bound pronouns.

- (65) Someone_i seemed to his_i boss to be reviewing every report. $\exists \triangleright \forall, * \forall \triangleright \exists$
For every report_r, someone_i seems to his_i boss to be reviewing it_r.

3.3.3 Condition C (Connectivity) and Scope Trapping

- Romero 1997:363 offers a further set of examples to support LF-coherence having to do with condition C, see also Fox 1998, 1999.

- (66) A nude of Marilyn seems to Deanna to be a good emblem of the exhibit.

- a. $\checkmark \exists \triangleright$ seem: “A particular nude of Marilyn seems to Deanna to be quite representative and, thus, a good emblem of the exhibit.”
b. \checkmark seem $\triangleright \exists$: “It seems to Deanna that a nude of Marilyn—no matter which one—would be a good emblem of the exhibit.”

(67) A nude of Marilyn_i seems to her_i to be a good emblem of the exhibit.

- a. $\checkmark \exists \triangleright$ seem: “A particular nude of Marilyn seems to Marilyn to be quite representative and, thus, a good emblem of the exhibit.”
b. $*? \text{seem} \triangleright \exists$: “It seems to Marilyn that a nude of Marilyn—no matter which one—would be a good emblem of the exhibit.”

- ⇒ If the excluded reading (67b) requires reconstruction, there is a clear explanation. Reconstruction would yield an LF that violates Condition C:

(68) [~~A nude of Marilyn_i~~] seems to her_i [_{IP} [A nude of Marilyn_i] to be a good emblem ...].

aside: c-command out of PP for condition C is clearly possible:

- (69) a. It seems to Bill_i [_{CP} that he_i will have to resign].
b. $*? \text{It}$ seems to him_i [_{CP} that Bill_i will have to resign].

- Importantly: the excluded reading is plausible, and grammatically paraphrasable:

(70) A nude of her_i seems to Marilyn_i to be a good emblem of the exhibit.

- a. $\checkmark \exists \triangleright$ seem: “A particular nude of Marilyn seems to Marilyn to be quite representative and, thus, a good emblem of the exhibit.”
b. \checkmark seem $\triangleright \exists$: “It seems to Marilyn that a nude of Marilyn—no matter which one—would be a good emblem of the exhibit.”

- ⇒ The difference between (67b) and (70) is the position of the pronoun and coreferent name. On the surface, there are no problems; at LF (and D-str) (67b) has a Condition C violation, whereas there is no Condition C violation ever in (70).

(71) [~~A nude of her_i~~] seems to Marilyn_i [_{IP} [A nude of her_i] to be a good emblem ...].

- The fact that the non-specific reading depends on the possibility of syntactic reconstruction (i.e., avoiding condition C) is important here, perhaps providing more general support for May’s original observation and the relevance of (25). Indeed, if truly non-specific readings are not scopal (as Lasnik claims), then the contrasts reported here are extremely mysterious.

- Parallel examples (Fox 1999:179, note caveats re: judgements 8/12; also Sportiche 1996):

- (72) a. [A student of David_i's] seems to him_i to be at the party. $\exists \gg \text{seem}, * \text{seem} \gg \exists$
 b. [A student of his_i] seems to David_i to be at the party. $\exists \gg \text{seem}, \sqrt{\text{seem}} \gg \exists$

3.3.4 Addendum: specificity and scope revisited

- The idea that wide-scope/specific indefinites are not scopal, associated with Fodor & Sag 1982 is of no avail to Lasnik (he's dealing with narrow scope readings, which even Fodor and Sag 1982 take to be scopal). Note that if there are intermediate readings for indefinites, then specificity is related to scope, see Reinhart 1997, Ruys 1992 Abusch 1994.

Intermediate scope:

(73) Every critic said that [a nude of Marilyn_i] seems to her_i to be a good emblem of the exhibit.

(74) Every critic said that [a nude of her_i] seems to Marilyn_i to be a good emblem of the exhibit.

Key: (73) has a reading in which the nude varies with the choice of critic ($\forall \gg \exists$) but that each critic is attributing to Marilyn an opinion about a particular nude ($\exists \gg \text{seem}$) = ($\forall \gg \exists \gg \text{seem}$).

In other words, (73) may take each critic to assert (67a), but not (67b) [both readings are possible in (74)].

Postscript

- It may not be possible to recreate the pure quantifier-quantifier paradigm with condition C:

- (75) a. [A student of his_i] seems to every professor_i to be at the party.
 b. [A student of every professor_i's] seems to him_i to be at the party,

⇒ (75b) allows non-overt / "inverse" scope, even though reconstruction of the bracketed NP would yield a Condition C violation.

Inverse Linking May 1977, May 1985

(76) [_{Q-NP1} ... [_{Q-NP2} ...]] allows either scope (QR of Q-NP2 to c-command Q-NP1)

- a. Someone from every California city owns a Porsche.
 b. [_{NP} Someone from [_{NP} every city_i]] loves it_i.
 c. [_{NP} every city_i]₁ [_{NP} Someone from [_{NP} t_i]] loves it_i.

- Bound Pronoun Interpretation Depends on Inverse Scope
 (Huang 1995:141, Higginbotham 1980)

- (77) a. [_{NP} A report card about [_{NP} every student]] was sent out. $\exists \gg \forall, \forall \gg \exists$
 b. [_{NP} A report card about [_{NP} every student_i]] was sent to his/her_i parents. $* \exists \gg \forall, \forall \gg \exists$

- (78) [_{NP} Everybody in [_{NP} some California city_i]] hates its_i climate. $\exists \gg \forall, * \forall \gg \exists$

⇒ In order to bind the pronoun, the QNP [every student]/[some CA city] must QR out of its containing NP to a position c-commanding the entire clause at LF:

- (79) [_{NP} some California city]₁ [_{NP} Everybody in t₁] hates its₁ climate. $\exists \gg \forall \gg \text{its}$

- (80) a. [A student of every professor_i's] seems to him_i to be at the party.
 b. [_{NP} Every professor]₁ [a student of t₁'s] seems to him_i to be at the party. $\forall \gg \exists \gg \text{him}$

⇒ Argument against pronoun binding via A-positions (Reinhart 1983, Hoji 1985)

⇒ Argument for wide scope of indefinite over existential, despite entailment problem.⁵

3.3.5 Interim Summary

Lasnik's objections point to problems with certain arguments, due in large part to poorly chosen examples. A careful survey of the relevant literature finds examples that avoid these problems and in particular, demonstrate that:

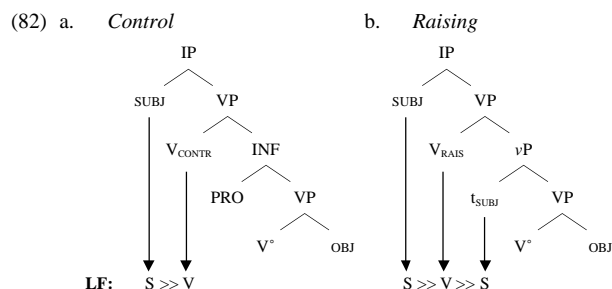
- A raised subject may take scope in the lower clause (i.e., specificity and long QR are complications that can be reliably controlled for).
- Only those elements that start out in the lower clause (the subject) may have scope interactions in the lower clause (e.g., may be in the lower clause at LF) [(63)].
- A-reconstruction (as a phenomenon) exists, at least with indefinites.

⁵ For the curious: *Every dog bit some cat* cannot be shown directly to have non-overt scope ($\exists \gg \forall$) since the truth of that reading entails the truth of the overt reading; the set of contexts in which the non-overt scope reading is true is a proper subset of the set of contexts in which the overt scope reading is true. Therefore, there is no context such that the non-overt reading is true but the overt reading false, and non-overt scope can neither be demonstrated nor refuted via intuitions about truth conditions. See Reinhart 1997:341ff for one discussion.

4. SCOPE PROPERTIES OF THE SUBJECT IN MODAL CONSTRUCTIONS

- (81) a. Someone from New York is likely to win in the lottery
 b. Someone from New York tried/promised to win in the lottery

- well-known ambiguity for raising constructions (cf. May 1977, Lebeaux 1995, Romero 1997, Fox 1998, 1999, Sauerland 1998a, 1998b, Bobaljik 1999 among many others)



(83) *Epistemic modals*

Jemand von New York muß in der Lotterie gewonnen haben
 'Somebody from New York must have won in the lottery'

- In view of the evidence available it is necessarily the case that somebody from N.Y. won the lottery
- There is somebody from N.Y. and in view of the evidence available it is necessarily the case that he won the lottery

- same ambiguity with root modals: the examples below are in principle ambiguous; knowledge of the world favors a wide scope reading for the subject in a., and a narrow scope reading in b. (ski races are generally won by one person only; for a country to win the most gold medals does not require that specific racers win the medals)

- (84) a. Zwei Österreicher müssen das nächste Rennen gewinnen (um Weltcupsieger zu werden)
 'Two Austrians must win the next race (in order for either of them to win the World Cup)
- #It is necessary that two Austrians win the next race
 - There are two Austrians and for each of them it is necessary to win the next

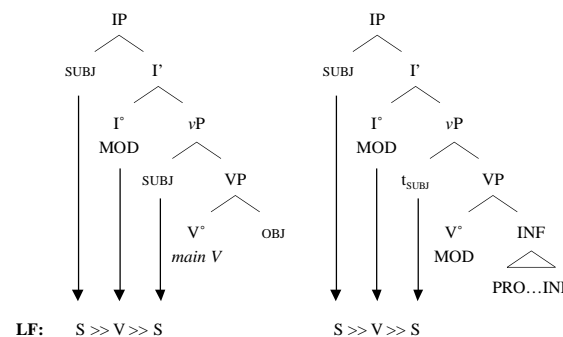
- b. Ein Österreicher muß das nächste Rennen gewinnen (damit Österreich die Führung im Weltcup übernimmt)
 An Austrians must win the next race (in order for Austria to have the most gold medals)
- It is necessary that an Austrian (whoever it is) win the next race
 - ^(#)There is an Austrian and it is necessary that he win the next race

⇒ subject can be interpreted below the modal

Two options

- subject in SpecIP or SpecvP; modal in INFL (base-generated)
 - subject in SpecIP or SpecvP, modal starts out in V*, moves to INFL
- ⇒ ii. is compatible with a control structure

- (85) a. *Raising structure* b. *Control structure*



- way to distinguish between (85)a,b—scope between the embedded object and the matrix subject: embedded object can scope over subject in raising but not in control constructions

- (86) a. Ein Professor scheint jeden Studenten zu betreuen ∃>∀/∀>∃
 Some professor seems every student to supervise
 'Some professor seems to supervise every student'
- b. Ein Professor versprach jeden Studenten zu betreuen ∃<∀*/∀>∃
 Some professor promised every student to supervise
 'Some professor promised to supervise every student'

⇒ only short-distance QR is possible; two LF-positions are available for the subject in raising constructions but not in control constructions (see Fox 1999)

- modal constructions pattern with raising structures:

- (87) Gemäß Universitätsbestimmungen muß mindestens ein Professor jeden Studenten betreuen
 'According to university regulations, at least one professor must supervise every student'
- University regulations require that there is at least one professor who supervises every student
 - University regulations require that every student is supervised by at least one professor

- ⇒ assuming the structure in (85)b, the ambiguity (i.e., the difference between (86)b and (87)) is unexpected⁶

The subject is interpreted below the modal and interacts scopally with arguments of the lower predicate

⇒ The subject starts out as an argument of the lower predicate

5. CONCLUSION

Modal constructions involve raising:

- properties of the subject are determined by the lower predicate and not the modal—the subject in modal constructions starts out in the lower predicate
- modals verbs do not assign a subject theta role
- A-reconstruction exists: an A-moved Q-NP can be interpreted in (near) its base position (contra Lasnik, but not contra Chomsky)
- there is A-reconstruction in modal constructions (subject ends up, hence starts out in the lower predicate)

⁶ The situation seems to be more complex in English. Hornstein (1995: 156, 1998) claims that in the examples below (a) contrasts with (b,c) in that only the former allows a wide scope reading for the universal quantifier (i.e., long-distance QR is impossible in control constructions). However, since the judgements are controversial they do not seem to allow us to draw any firm conclusions.

- Someone seemed to attend every class
- Someone persuaded John PRO to attend every class
- Someone hoped PRO to recite every poem

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