

Quantifier Lowering?  
Howard Lasnik  
January, 1996

A. Quantifier Lowering Effects (and absence of same)

- (1) Some politician is likely to address John's constituency  
[May (1977)]
- (2) It is likely that some politician will address John's constituency
- (3) "[ (1) ] may be taken as asserting either (i) that there is a politician, e.g., Rockefeller, who is likely to address John's constituency, or (ii) that it is likely that there is some politician (or other) who will address John's constituency."
- (4) There is some politician (or other) who is likely to address John's constituency.
- (5) There is a politician, e.g., Rockefeller, who it is likely will address John's constituency
- (6) On one reading, 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 other reading (the 'lowered' one), the speaker does not have any particular individual in mind. The ambiguity might than fall under theme-rheme properties, the 'wide scope' quantifier being a theme or topic.
- (7) Some politician addressed John's constituency
- (8) ...namely Rockefeller
- (9) ...I can tell by all the balloons and flags on the green
- (10) Someone is likely to clean the blackboard
- a There is a particular individual, Joe the maintenance man, who is likely to clean the blackboard
- b It is likely that there is someone (or other) who will clean the blackboard
- c There is someone (or other) who is likely to clean the blackboard
- (11) Someone cleaned the blackboard
- a Namely, Joe the maintenance man
- b I have no idea who, but the board was covered with phrase structure trees last night, and is now bare

- (12) Lowering is standardly (universally?) assumed to distinguish raising from control. (May (1977), May (1985), Safir (1985))
- (13) a A hippogryph is likely to be apprehended  
b A hippogryph is anxious to be apprehended
- (14) a It is likely that a hippogryph will be apprehended  
b \*It is anxious that a hippogryph will be apprehended
- (15) BUT (16) can be appropriately uttered whether or not the speaker has a particular linguist in mind. The second circumstance might involve, say, a report of an anonymous e-mail posting requesting information about quirky Case.
- (17) Some linguist wants to solve the problem of quirky Case
- (18) May (1985) argues that bound variable pronoun interpretations directly correlate with raised readings, and inversely correlate with lowered readings.
- (19) No agent<sub>i</sub> was believed by his<sub>i</sub> superior to be a spy for the other side
- (20) It was believed by his<sub>i</sub> superior that no agent<sub>i</sub> was a spy for the other side
- (21) No agent<sub>i</sub> was believed by his<sub>i</sub> superior to be a spy for the other side
- (22) Some professor is believed by his students to be a tyrant
- (23) a Howard Lasnik is believed by his students to be a tyrant  
b Some professor (or other), I have no idea exactly who, is believed by his students to be a tyrant
- (24) The context for (22)b might be the discovery of graffiti scrawled on the lavatory wall saying "Our professor is a tyrant".
- (25) No large Mersenne number was proven to be prime
- (26) It was proven that no large Mersenne number is prime
- (27) Noone is certain to solve the problem
- (28) It is certain that noone will solve the problem
- (29) Every coin is 50% likely to land heads
- (30) It is 50% likely that every coin will land heads
- (31) Every coin is 3% likely to land heads
- (32) It is 3% likely that every coin will land heads
- (33) ⇨ Whenever there is a clear truth conditional distinction between the two potential paraphrases, the 'lowered' reading disappears.

- (34) (It seems that) everyone isn't there yet  
Neg. >  $\forall$  possible
- (35) Everyone seems not to be there yet  
Neg. >  $\forall$  impossible
- (36) "...there is no reconstruction to the trace position  
[with A-movement]..." (Chomsky (1995))
- (37) I expected everyone not to be there yet
- (38) I believe everyone not to be there yet
- (39) Perhaps we are dealing with a general property of  
(certain types of) infinitivals, and not with a  
property of raising at all.
- (40) Response: But ECM does involve raising.

#### B. Another Quantifier Lowering Phenomenon: Interpretation of Bare Plurals

- (41) Firemen are available (Diesing (1992))
- (42) Subjects of 'stage-level' predicates originate in Spec of VP, then raise to Spec of IP. When the subject is a bare plural, it receives a generic interpretation if it remains in Spec of IP at LF, and an existential interpretation if it lowers to Spec of VP.
- (43) Firemen seem to be available
- (44) There are firemen that seem to be available  
(Diesing's paraphrase of the existential reading)
- (45) Some politician is likely to address John's constituency
- (46) There is a politician, e.g., Rockefeller, who is likely to address John's constituency  
(May's paraphrase of the non-lowered reading)
- (47) Firemen<sub>i</sub> seem to their<sub>i</sub> employers to be available
- (48) Gila monsters<sub>i</sub> seem to their<sub>i</sub> predators to be visible
- (49) Gila monsters seem to the coyotes to be visible
- (50) John seems to the coyotes to be visible
- (51) Gila monsters are visible to their predators
- (52) Firemen seem to the mayor to be available
- (53) (Lock your doors!) Prisoners have escaped
- (54) (Lock your doors!) Prisoners are reported to have escaped
- (55) (Lock your doors!) Prisoners are reported by their guards to have escaped

#### C. Yet Another Quantifier Lowering Phenomenon: Parallelism and Economy

- (56) An American runner seems to Bill to have won a gold medal  
(Fox (1994))
- (57) An American runner seems to Bill to have won a gold medal and a Russian athlete does too
- (58) Bill could know the identity of the Russian and the American runner or he could be sitting in the cafeteria hearing the consecutive playing of two anthems.
- (59) An American runner seems to Bill to have won a gold medal and Sergey does too
- (60) This time, according to Fox, Bill must know the identity of the American runner.
- (61)a Interpretation is constrained by a parallelism requirement.  
b Lowering is an operation, and as such is subject to economy. [The relevant aspect of economy here is that quantifier lowering (along with quantifier raising) is only permissible if it will make an interpretive difference. In the second conjunct of (59), lowering would make no difference, since the subject is strictly referential. Therefore, by parallelism, lowering is not allowed in the first conjunct either.]
- (62) An American runner seems to Bill to have won a gold medal and a Russian athlete seems to Bill to have won a gold medal too
- (63) An American runner won a gold medal
- D. 'Reconstruction' Effects (and absence of same)
- (64) \*John<sub>i</sub> expected [him<sub>i</sub> to seem to me [ t to be intelligent]] (Chomsky (1995))
- (65) \*He<sub>i</sub> seems to him<sub>i</sub> [t to be likely [t to win]]
- (66) \*He<sub>i</sub> seems to Bill's<sub>i</sub> sister [t to be the best]]  
(Belletti and Rizzi (1991))
- (67) Either Conditions B and C must be satisfied at S-structure or there is no relevant covert movement in these cases.
- (68) (✓)Replicas of themselves seemed to the boys [t to be ugly]
- (69) (\*)Replicas of themselves spoke to the boys
- (70) (✓)Each other's supporters frightened the candidates
- (71) (\*)Each others supporters attacked the candidates
- (72) Belletti and Rizzi: The syntactic requirements of an anaphor can be satisfied in the course of the derivation (rather analogous to  $\gamma$ -marking).

Conditions B and C remain conditions on late derived structure, LF in the framework assumed here.

- (73) Alternatively, Conditions B and C might be construed as pure interpretive principles along the lines of the Chomsky (1973) ancestor of Condition B and the Lasnik (1976) ancestor of Condition C.

#### E. Why Wouldn't Lowering Exist?

(i)

- (74) Chomsky's proposal: 'reconstruction' is strictly a property of A'-chains.
- (75) On the standard view of the facts, this is incorrect, but the crucial contrasts are rather more subtle than is usually claimed. Even so, we would want (74) to follow from something.
- (76) Radical possibility: A-movement, unlike A'-movement, does not leave a trace, where a trace is, following Chomsky, a copy of the item that moves, and reconstruction effects result from failure to delete (a portion of) a lower copy.
- (77) A'-movement typically creates an operator-variable relation, so at least an initial trace is necessary. For A-movement, on the other hand, the trace is a sort of theoretical excrement. There are not two separate interpretive roles for a moved NP and its trace to fulfill.
- (78) "In the phonological component, traces delete. We have found no reason to extend that convention to the N→λ computation, and indeed cannot; were we to do so, θ-positions would be invisible at LF..." (Chomsky (1995))
- (79) Alternative: θ-roles are 'checked' in the course of a derivation. The moved argument is itself a record of the history of its derivation.
- (80) Similarly relativized minimality/shortest move effects could well be computed derivationally, obviating the need for a \*-marked A-trace.

(ii)

- (81) A position where features of an NP are checked cannot be completely vacated in LF. (Lee (1993))
- (82)a When the raised NP is simple, as in (64)-(66), it must remain in its raised position.
- b When the raised NP is complex, as in (68), complementary deletion, of the sort proposed by Chomsky for A'-movement, will be available, resulting in a configuration where the anaphor is appropriately lower than its antecedent. [I assume the head must remain in the checking position.]

- (83) Who wonders which pictures John bought where
- (84) Who wonders which pictures of which athletes John bought where
- (85) ?Pictures of anyone aren't likely to be at the exhibit
- (86) \*Anyone isn't likely to be at the exhibit
- (87) Lack of lowering might parallel lack of reconstruction of 'simple' anaphors or NPIs: plausibly, Q-lowering, like the impossible reconstruction instances, would involve the head of the moved constituent, so the quantificational expression would be ineligible to lower to a previous A-position.

Carlson, G. (1977) "Reference to Kinds in English," UMass Ph.D. diss.

Belletti, A. and L. Rizzi (1991) "Notes on Psych-Verbs, θ-Theory, and Binding," in R. Freidin Principles and Parameters in Comparative Grammar MIT Press.

Chomsky, N. (1973) "Conditions on Transformations," in S. Anderson and P. Kiparsky A Festschrift for Morris Halle Holt, Rinehart and Winston.

Chomsky, N. (1995) The Minimalist Program MIT Press.

May, R. (1977) "The Grammar of Quantification," MIT Ph.D. diss.

May, R. (1985) Logical Form MIT Press.

Safir, K. (1985) Syntactic Chains Cambridge U. Press.

Diesing, M. (1992) Indefinites MIT Press.

Fox, D. (1994) "Quantifier Scope in VP Ellipsis," MIT ms.

Kratzer, A. (1989) "Stage and Individual Level Predicates," in Papers on Quantification NSF Grant Report, UMass.

Lasnik, H. (1976) "Remarks on Coreference," Linguistic Analysis 1:1-22.

Lasnik, H. and R. Fiengo (1974) "Complement Object Deletion," Linguistic Inquiry 5:535-571.

Lee, R. (1993) "Reconstruction and the Checking Theory," presented at the 67<sup>th</sup> LSA Annual Meeting.