

Family of Questions: Nuclear or Extended?

Howard Lasnik

University of Maryland

lasnik@umd.edu

- (1) Who did everyone say that Bill saw?
- (2) "... notice that in [(1)], the wh-quantifier takes wider scope than 'every', (since this question is an inquiry into the identity of a specific person, of whom everyone said that Bill saw him)." May (1977, p.141)
- (3) What did each senator say
- (4) Where did everyone go
- (5) According to May (and I concur), these examples, unlike (1), are ambiguous. May proposes that wh-phrases, optionally can undergo QR. This results in two possible LFs for (3). [I have corrected an obvious typo in [(6)]]
- (6) [_S [_{COMP} What] [_S [each senator]_α [_S did α say t]]]
- (7) [_S [_{COMP} t]_t [_S [each senator]_α [what [_S did α say t]]]]
- (8) "[[(6)] represents the reading in which the wh-phrase has wider scope; an appropriate reply to [(6)] under this reading would be "That he would vote for the Canal treaty". [(7)], on the other hand, represents a reading in which the wh-phrase has narrower scope. An appropriate reply here would be "Proxmire said that he would vote for the treaty, Goldwater said he wouldn't..." [This latter is standardly called a "family of questions" reading.]
- (9) The family of questions reading arises when \forall c-commands WH (and the two are close to each other), subject to an additional constraint that I will not be concerned with here distinguishing (10) from (11). [See May (1985), Lasnik and Saito (1992), Chierchia (1993), among others.]
- (10) Who did everyone see [Family of questions reading possible]
- (11) Who saw everyone [Family of questions reading not possible]
- (12) Who do you think [everyone saw t at the rally]
- (13) As May (1985) says, this one does allow a family of questions reading; he captures this roughly as before, with a couple of technical differences:
- (14) WH does not undergo QR.
- (15) Rather, if \forall and WH are close together, either can scope over the other. [In this model, unlike the 1977 model, LFs are not disambiguated.]
- (16) This new analysis also immediately carries over to the original simple examples (3) and (4).
- (17) There are two apparent problems with this account of (12):
- (18) It fails to distinguish (12) from (1).
- and

- (19) As observed by Williams (1986), on May's account, *everyone* must scope out of the embedded finite clause, but this is normally not possible, as illustrated in (20), which only allows embedded scope for \forall .
- (20) Someone thinks everyone saw you at the rally
- (21) “The scope of *every* as a quantifier seems to be limited to the S that immediately dominates it.”
- (22) May (1988) responds to this argument sharply disagreeing with Williams, calling the claimed lack of broad scope for *everyone* in (20) a “spurious datum”, and reporting as a “standard observation” that a universal quantifier in this position can be understood as having broad scope. He goes on to state that “there does not seem to be any grammatical principle that can limit extraction from the complement subject position...”
- (23) I don't believe that this is a standard observation. Rather, Williams' claim reflects a pretty broad consensus, one that, interestingly enough, very quickly included May himself:
- (24) Larson and May (1990): “whereas quantified subjects can be given scope out of infinitives, this is not generally possible with tensed complements.”
- (25) “...whereas [(26)a] permits a wide-scope reading for *everyone* vis-à-vis *someone* and *believe*, according to which for each person *x* there is someone who believes *x* is a genius, [(26)b] permits only a narrow-scope reading for *everyone*, according to which there is some person who believes genius to be a universal characteristic”.
- (26) a Someone believes everyone to be a genius
b Someone believes (that) everyone is a genius
- (27) Sloan and Uriagereka (1988) and Sloan (1991) also raise the challenge to the May (1985) analysis of WH-Q interactions based on the over prediction of ambiguity, observing, contra May's prediction, that (28) does not have a family of questions reading.
- (28) Who does everyone think you saw?
- (29) Agüero-Bautista (2007) presents a somewhat similar structural account of the possibility of family of questions readings:
- (30) “... the pair-list interpretation of a question with a universal quantifier requires syntactic reconstruction of the wh-phrase below the quantifier... such readings arise when the quantifier binds a null variable in one of the copies left behind by wh-movement ...”
- (31) This allows family of question readings in (at least) all the circumstances that May's account does.
- (32) Agüero-Bautista acknowledges that the possibility of a family of questions reading for (33), which I will argue is the crucial kind of case, was questioned by a reviewer (who apparently even questioned the possibility for cases like (12)).
- (33) Which book did every professor say that Pete read?
- (34) He indicates, however, that his factual claim “is widely corroborated in the literature”, citing May (1985), Williams (1986), Williams (1988), Chierchia (1993), and Aoun and Li (1993).

- (35) But with the one exception of May (1985), **none** of these works give an example like (33), or make any claim about such an example.
- (36) And while May (1985) did indeed call such an example ambiguous, this flatly contradicts May (1977), who called such an example **unambiguous**. [See (1) above.]
- (37) For Agüero-Bautista, the two situations are not distinguished. His theory treats them both the same, allowing the family of questions reading in both. And they fall under the same description: Long distance wh-movement from a position below the Q to a position above it. May's 1985 analysis has the same consequence.
- (38) As noted, May's analyses are based on structural interaction between the Q and the surface position of the WH.
- (39) Not long after May (1985) appeared, three alternatives appeared, all based on structural interaction between the Q and the **trace** of WH (in particular, the initial trace), and all in somewhat different ways:
- (40) Sloan (1991)
- (41) Lasnik and Saito (1992)
- (42) Chierchia (1993)
- (43) For Sloan (1991) and Lasnik and Saito (1992), what is crucial is that the WH originate in the same clause as the Q (and lower than the Q, a fact discussed in great detail by May (1985) and Chierchia (1993)).
- (44) Lasnik and Saito propose that (part of) the initial trace of wh-movement is actually an existential quantifier, a fairly ancient idea, found, for example, in Chomsky (1964).
- (45) Family of questions readings, then, are the result of a \forall scoping over this \exists .
- (46) This kind of scope interaction is usually clause bound.
- a. This obviously handles the simple cases like (4)
 - b. and long distance wh-movement cases like (12), where \forall and the \exists wh-trace are in the same clause.
 - c. On the other hand, cases like (1) will be excluded (correctly, I believe, and just as claimed by May (1977) and Sloan (1991)).
- (47) But there is a complication.
- (48) Sloan (1991) reports that in response to her claim that examples like her (49) lack the family of questions reading, Robert May gave her structurally similar examples like (50), which do have this reading.
- (49) a. Who does everyone think Mary saw t?
b. Who does everyone expect Mary to see t?
- (50) a. Who does everyone_i think he_i saw t?
b. Who does everyone_i expect PRO_i to see t?
- (51) (50)b is, on the face of it, not particularly surprising, since it has been known at least since Postal (1974) and Rizzi (1978) that subject control constructions behave in many respects as if they constitute a single clause ...

- (52) though it is not clear that 'expect' is actually of the restructuring class that he explored.
- (53) And 'claim' is not a restructuring verb by usual criteria, yet we still find the possibility of family of questions when 'claim' substitutes for 'expect':
- (54) Who does everyone_i claim PRO_i to have seen t?
- (55) Regardless, (50)a, is quite surprising, since noone has ever proposed restructuring for finite complements yet, unlike (49)a, only the former allows a family of questions reading.
- (56) If clause-mateness is, indeed, relevant in licensing family of questions readings, sentences like (50)a are striking exceptions, and ones not evidently rescuable by restructuring under any circumstances.
- (57) The salient difference between (49)a, disallowing family of questions, and (50)a, allowing it, is that the latter, like a control construction, has a bound subject.
- a. The 'bound' aspect is crucial. If 'he' is understood as independently referential in (50)a, the family of questions reading becomes just as inaccessible as it is in (49)a.
- (58) Significantly, a survey of the literature reveals that a number of other clause-mate phenomena fall into the same pattern: the possibly unsurprising exemption for control constructions, but the quite surprising exemption for finite complements with bound pronoun subjects.

→Gapping

- (59) John read books and Mary ~~read~~ magazines
- (60) John wanted to read books and Mary ~~wanted to read~~ magazines
- (61) *John wanted Bill to read books and Mary ~~wanted Bill to read~~ magazines
- (62) ?John thinks that he will see Susan and Harry ~~thinks that he will see~~ Mary
[Nishigauchi (1998), attributed to an anonymous reviewer]
- (63) "... the clausemate restriction on Gapping is alleviated by an intervening pronoun."
- (64) *John thinks that Bill will see Susan and Harry ~~thinks that Bill will see~~ Mary
- (65) John_i thinks that he_i will see Susan and Harry_j ~~thinks that he_j will see~~ Mary
- (66) In particular, the alleviation requires a **bound** pronoun.

→Reciprocal Binding

- (67) John and Mary visited each other
- (68) John and Mary want to visit each other
'Each wants to visit the other' Higginbotham (1981)
- (69) *John and Mary want Bill to visit each other
- (70) John and Mary think they like each other
- (71) a John and Mary think they (that is, John and Mary) like each other.
b John thinks that he likes Mary and Mary thinks that she likes John
- (72) *John and Mary think that I like each other (would = Each of John and Mary thinks that I like the other.)

→Multiple Sluicing

- (73) Someone talked about something
?but I don't know who about what
- (74) Someone wanted to talk about something
?but I don't know who about what
- (75) Someone wanted Mary to talk about something
*but I don't know who about what
- (76) A certain boy decided to talk to a certain girl
I forget which boy to which girl Barrie (2005)
- (77) ?Each professor_i said he_i was working on a different one of these topics, but I can't
remember which on which one [Lasnik (2013), from Jason Merchant,
personal communication]
- (78) *Each professor said Susan was working on a different one of these topics, but I can't
remember which on which one
- (79) A certain boy_i said he_i would talk to a certain girl
I forget which boy to which girl Barrie (2005)

→Quantifier Scope Interaction

- (80) At least one student fooled each of the professors
- (81) At least one student has tried to fool each of the professors Kayne (1998)
- (82) At least one student saw each of these new books
- (83) At least one student has asked to see each of these new books Kayne (1998)
- (84) At least one man/some man thinks he's in love with each of these women
each > at least one possible Kayne (1998)
- (85) At least one man/some man thinks Bill's in love with each of these women.
each > at least one not possible

TOWARDS AN ACCOUNT Based on joint work with Tom Grano: Grano and Lasnik (2014)

- (86) a. Phase-based locality: Gapping (and other similar clause-mate processes) are
phase-bound.
b. Convergence-based phasehood: Phases are constituents with no unvalued features. (Cf.
Felser (2004). A version of this is entertained also by Chomsky (2000, p.107) though
ultimately not accepted by him.)
c. Valuation-based binding: Bound pronouns enter the derivation with features that are
not valued until the antecedent is merged in.
- (87) Then we modify (86)c roughly following Kratzer (2009): Some bound pronouns are born
as ϕ -defective "minimal pronouns" that obtain their features via transmission from C or
v. Kratzer identifies relative pronouns and PRO as two kinds of minimal pronouns
whose features are transmitted from C; here we extend the idea to bound pronominal
subjects of finite complement clauses.
- (88) How this might help with the Gapping contrast:
- (89) a. Joe₁ claims that he₁ reads books and Tim₂ <claims [_{NON-PHASE} that he₂ reads> articles]
b. *Joe claims that Bill reads books and Tim <claims [_{PHASE} that Bill reads₁> articles]

- (90) Now the Sloan/May family of questions contrast:
 (91) a. Who does everyone_i think [_{NON-PHASE} that he_i should see ∃]?
 b. Who does everyone think [_{PHASE} that Mary should see ∃]?

Cf.

- (92) Everyone_i thinks that he_i should see someone
 a. $\forall x$ x thinks $\exists y$ | he should see y
 b. $\forall x \exists y$ | x thinks he should see y
 (93) Everyone thinks Mary saw someone
 a. $\forall x$ x thinks $\exists y$ | Mary should see y
 b. $\neq \forall x \exists y$ | x thinks Mary should see y

So far so good. BUT

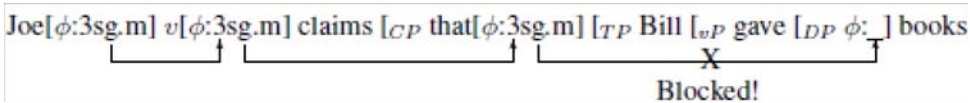
- (94) a. Joe_i claims that he_i reads books and Tim_i <claims [_{NON-PHASE} that he_j reads] articles]
 → b. *Joe_i claims that Bill gave him_i books and Tim_j <claims [_{NON-PHASE} that Bill gave him_j] articles]

- (95) a. What book does everyone claim that he read ✓ Family of questions
 b. What book does everyone claim that Bill gave him * Family of questions

- (96) Only a bound **subject** induces the transparency we have been finding.
 (97) Why can't *him* in (94)b enter the derivation as a minimal pronoun, thereby (erroneously) allowing gapping?
 (98) Why can't *him* in (95)b enter the derivation as a minimal pronoun, thereby (erroneously) allowing the family of questions reading?

- (99) Proposal: C and v intervene for each other.
 Consequence: (100) cannot be derived from (101).

- (100) Joe_i claims that Bill gave him_i books

- (101) Joe[ϕ :3sg.m] v[ϕ :3sg.m] claims [_{CP} that[ϕ :3sg.m] [_{TP} Bill [_{vP} gave [_{DP} ϕ :] books


- (102) And similarly for (95).

- (103) A remaining problem (possibly a big one):

- (104) Subject-internal bound possessors do not induce transparency (105), even though v does not intervene (106).

- (105) *Joe₁ claims that his₁ son reads books and Tim₂ <claims that his₂ son reads> articles.

(106) $\text{Joe}[\phi:3\text{sg.m}] \text{ } v[\phi:3\text{sg.m}] \text{ claims } [_{CP} \text{ that}[\phi:3\text{sg.m}][[_{TP} [_{DP} \text{ his}[\phi:3\text{sg.m}] \text{ son}] [_{vP} \text{ reads books}]]]]$

(107) And roughly parallel for family of questions:

(108) What books does every father claim that his son reads ?* Family of questions

(109) Summary:

The transparency effects induced by bound pronominal subjects of finite complement clauses provide novel evidence for (a) the convergence-based view of phasehood and (b) the view that some but not all bound pronouns enter the derivation unvalued.

(110) Some questions for further investigation:

- a. What is responsible for the ‘entire subject’ effect seen in (105)?
- b. How do ϕ -features get onto C? (Cf. Landau (To appear))
- c. How should the Phase Impenetrability Condition be formulated on a convergence-based view of phasehood?

References

- Agüero-Bautista, Calixto. 2007. Diagnosing cyclicity in sluicing. *Linguistic Inquiry* 38: 413-443.
- Aoun, Joseph and Audrey Li. 1993. *The syntax of scope*. Cambridge, Mass.: MIT Press.
- Barrie, Michael. 2005. Control and wh-infinitivals. New Horizons in the Grammar of Raising and Control. Harvard University.
- Chierchia, Gennaro. 1993. Questions with quantifiers. *Natural Language Semantics* 1: 181-234.
- Chomsky, Noam. 1964. Current issues in linguistic theory. In *Structure of Language*, ed. Jerry A. Fodor and Jerrold J. Katz, 50-118. New York: Prentice-Hall.
- Chomsky, Noam. 2000. Minimalist inquiries: the framework. In *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, ed. Roger Martin, David Michaels, and Juan Uriagereka, 89-155. Cambridge, Mass.: MIT Press.
- Felser, Claudia. 2004. Wh-copying, phases, and successive cyclicity. *Lingua* 114: 543-574.
- Grano, Thomas and Howard Lasnik. 2014. How to neutralize a finite clause boundary: Phase theory and the grammar of bound pronouns. *Pronouns@Tübingen 2: Pronouns in Embedded Contexts at the Syntax-Semantics Interface*. University of Tübingen.
- Higginbotham, James. 1981. Reciprocal interpretation. *Journal of Linguistic Research* 1: 97-117.
- Kayne, Richard. 1998. Overt vs. covert movement. *Syntax* 1: 128-191.
- Kratzer, Angelika. 2009. Making a pronoun: Fake indexicals as windows into the properties of pronouns. *Linguistic Inquiry* 40: 187-237.
- Landau, Idan. To appear. Agreement at PF: An argument from partial control. *Syntax*.
- Larson, Richard and Robert May. 1990. Antecedent containment or vacuous movement: Reply to Baltin. *Linguistic Inquiry* 21: 103-122.
- Lasnik, Howard. 2013. Multiple Sluicing in English? *Syntax* 16.
- Lasnik, Howard and Mamoru Saito. 1992. *Move α* . Cambridge, Mass.: MIT Press.
- May, Robert. 1977. *The grammar of quantification*. Doctoral dissertation, MIT, Cambridge, Mass.
- May, Robert. 1985. *Logical Form: Its structure and derivation*. Cambridge, Mass.: MIT Press.

- Nishigauchi, Taisuke. 1998. 'Multiple Sluicing' in Japanese and the functional nature of *wh*-phrases. *Journal of East Asian Linguistics* 7: 121-152.
- Postal, Paul M. 1974. *On raising: One rule of English grammar and its theoretical implications*. Cambridge, Mass.: MIT Press.
- Rizzi, Luigi. 1978. A restructuring rule in Italian syntax. In *Recent transformational studies in European languages*, ed. Samuel Jay Keyser. Cambridge, Mass.: MIT Press.
- Sloan, Kelly. 1991. Quantifier-*wh* interaction. In *MIT Working Paper in Linguistics* 15, 219-237.
- Sloan, Kelly and Juan Uriagereka. 1988. What does 'everyone' have scope over? GLOW. Budapest.
- Williams, Edwin. 1986. A reassignment of the functions of LF. *Linguistic Inquiry* 17: 265-299.
- Williams, Edwin. 1988. Is LF distinct from S-Structure? A reply to May. *Linguistic Inquiry* 19: 135-146.