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Clauses, Quasi-Clauses, and Phases: A Surprising Generalization and a Speculation

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I. Locality in Family of Questions Readings

(1) What did each senator say
(2) Where did everyone go May (1977, p.141)
(3) According to May (and I concur), these examples are ambiguous. May proposes that wh-phrases, optionally can undergo QR. This results in two possible LFs for (1). [I have corrected an obvious typo in [(4)]
(4) $[_{\bar{S}}\ [_{COMP}$ What] $[_S$ [each senator]$_\alpha$ $[_S$ did α say t]]]
(5) $[_{\bar{S}}\ [_{COMP}$ t]$_t$ $[_S$ [each senator]$_\alpha$ [what $[_S$ did α say t]]]]
(6) "[(4)] represents the reading in which the wh-phrase has wider scope; an appropriate reply to [(4)] under this reading would be "That he would vote for the Canal treaty". [(5)], 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, henceforth FoQ.]

(7) The family of questions reading arises when ∀ 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 (8) from (9). [See May (1985), Lasnik and Saito (1992), Chierchia (1993), among others.]
(8) Who did everyone see [Family of questions reading (henceforth FoQ) possible]
(9) Who saw everyone [FoQ not possible]

(10) Who do you think [everyone saw t at the rally]
(11) As May (1985) says, this one also allows FoQ; he captures this roughly as before, with a couple of technical differences:
(12) WH does not undergo QR.
(13) Rather, if ∀ and WH are close together, either can scope over the other. [In this model, unlike the 1977 model, LFs are not disambiguated.]
(14) This new analysis also straightforwardly applies to the original simple examples (1) and (2).

(15) There is an apparent problem with this account of (10):
(16) 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 (17), which only allows embedded scope for ∀.

(17) Someone thinks everyone saw you at the rally

(18) "The scope of *every* as a quantifier seems to be limited to the S that immediately dominates it."

(19) May (1988) responds to this argument sharply disagreeing with Williams, calling the claimed lack of broad scope for *everyone* in (17) 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..."

(20) 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:

(21) Larson and May (1990): "whereas quantified subjects can be given scope out of infinitives, this is not generally possible with tensed complements."

(22) "...whereas [(23)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, [(23)b] permits only a narrow-scope reading for *everyone*, according to which there is some person who believes genius to be a universal characteristic".

(23) a Someone believes everyone to be a genius
b Someone believes (that) everyone is a genius

(24) There is no relevant difference between (17) and (23)b.

(25) In addition to this under-prediction of ambiguity, May's (1985) account also **over**-predicts ambiguity.

(26) May (1977) had observed the absence of FoQ in (27), yet his 1985 theory allows it.

(27) Who did everyone say that Bill saw?

(28) "... notice that in [(27)], 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)

(29) Sloan and Uriagereka (1988) and Sloan (1991) raise a challenge to the May (1985) analysis of WH-Q interactions based on such over prediction of ambiguity, observing, contra May's prediction, that (30), very similar to (27), does not have FoQ.

(30) Who does everyone think you saw?

(31) As noted, May's analyses are based on structural interaction between the Q and the surface position of the WH.

(32) 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:

(33) Sloan (1991)

(34) Lasnik and Saito (1992)

(35) Chierchia (1993)

(36) 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)).

(37) Lasnik and Saito propose that (part of) the initial trace of wh-movement is actually an existential quantifier, a fairly venerable idea, found, for example, in Chomsky (1964a).

(38) Family of questions readings, then, are the result of a $\forall$ scoping over this $\exists$.

(39) This kind of scope interaction is usually clause bound. (More on this later.)
   a. This obviously handles the simple cases like (2)
   b. and long distance wh-movement cases like (10), where $\forall$ and the $\exists$ wh-trace are in the same clause.
   c. On the other hand, cases like (27) will be excluded (correctly, I believe, and just as contended by May (1977) and Sloan (1991)).

(40) But there is a complication.

(41) Sloan (1991) reports that in response to her claim that examples like her (42) lack the family of questions reading, Robert May gave her structurally similar examples like (43), which do have this reading.

(42) a. Who does everyone think Mary saw t?
   b. Who does everyone expect Mary to see t?

(43) a. Who does everyone$_i$ think he$_i$ saw t?
   b. Who does everyone$_i$ expect PRO$_i$ to see t?

(44) (43)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 ...

(45) ... though it is not clear that 'expect' is actually of the restructuring class that Rizzi explored.

(46) 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':

(47) Who does everyone$_i$ claim PRO$_i$ to have seen t?

(48) Regardless, (43)a, is quite surprising, since noone has ever proposed restructuring for finite complements, yet, unlike (42)a, the former does allow a family of questions reading.

(49) If clause-mateness is, indeed, relevant in licensing family of questions readings, sentences like (43)a are striking exceptions, and ones not evidently rescuable by restructuring under any circumstances.

(50) The salient difference between (42)a, disallowing family of questions, and (43)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 (43)a, or if ‘he’ is replaced by ‘I’ or ‘you’, the family of questions reading becomes just as inaccessible as it is in (42)a.

II. More Cases of Bound Pronoun Effect

(51) Significantly, a survey of the literature reveals that a number of other clause-mate type phenomena fall into the same pattern: the possibly unsurprising exemption for control constructions (Postal (1974) called these ‘quasi-clauses’), but the quite surprising exemption (usually mentioned in footnotes) for finite complements with bound pronoun subjects.

→**Quantifier Scope Interaction** [particularly germane given the Lasnik and Saito account of FoQ]

(52) At least one student fooled each of the professors
(53) At least one student has tried to fool each of the professors Kayne (1998)
(54) At least one student saw each of these new books
(55) At least one student has asked to see each of these new books Kayne (1998)

The surprise:

(56) At least one man/some man$_i$ thinks he$_i$'s in love with each of these women
each > at least one possible Kayne (1998)
(57) At least one man/some man thinks Bill's in love with each of these women.
each > at least one not possible

→**Gapping**

(58) John read books and Mary ~~read~~ magazines
(59) John wanted [__ to read books] and Mary ~~wanted [__ to read~~ magazines]
(60) *John wanted Bill to read books and Mary ~~wanted [Bill to read~~ magazines]
(61) *John thinks [that Bill will see Susan] and Harry ~~thinks [that Bill will see~~ Mary]

The surprise:

(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$_i$ thinks that he$_i$ will see Susan and Harry$_j$ ~~thinks that he$_j$ / $_{*i}$ will see~~ Mary
(65) *John thinks [that I will see Susan] and [Harry ~~thinks that I will see~~ Mary]
(66) *John thinks [that you will see Susan] and [Harry ~~thinks that you will see~~ Mary]
(67) In particular, the alleviation requires a **bound** pronoun.

(68) João começou a ler livros e Maria ~~começou a ler~~ revistas [Brazilian Portuguese]
João began to read books and Maria magazines
(69) *João disse que Pedro lê livros e Maria ~~disse que Pedro lê~~ revistas
João said that Pedro reads books and Maria magazines
(70) João$_i$ disse que pro$_i$ lê livros e Maria$_j$ ~~disse que pro$_j$ lê~~ revistas
João said that reads books and Maria magazines
(71) ?João$_i$ disse que ele$_i$ lê livros e Maria$_j$ ~~disse que ele$_j$ lê~~ revistas
João said that Pedro reads books and Maria magazines

→**Reciprocal Binding**

(72) John and Mary visited each other
(73) John and Mary want [__ to visit each other]
This sentence can have a 'long' reading, with the semantic antecedent of 'each other' the subject of 'want':
'Each wants to visit the other' Higginbotham (1980)
(74) They decided [__ to keep each other's comments confidential]
Can mean: 'Each of them decided to keep the other's comments confidential' (a 'long reading') Heim et al. (1991)

(75) *John and Mary want [Bill to visit each other]
[If this were good, it would mean John and Mary each want Bill to visit the other.]
(76) *John and Mary thought that Susan loved each other <would = Each of John and Mary thought that Susan loved the other.>

The surprise:

(77) John and Mary think they like each other
(78) 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
(79) *John and Mary think that I like each other (would = Each of John and Mary thinks that I like the other.)

→Multiple Sluicing

(80) Someone talked about something
?but I don't know who about what
(81) Someone wanted to talk about something
?but I don't know who about what
(82) Someone wanted Mary to talk about something
*but I don't know who about what
(83) A certain boy decided to talk to a certain girl
I forget which boy to which girl Barrie (2005)
(84) *Each professor said Susan was working on a different one of these topics, but I can't remember which on which one

The surprise:

(85) ?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]
(86) A certain boy$_i$ said he$_i$ would talk to a certain girl
I forget which boy to which girl Barrie (2005)

→**Extraposition** ("Complex NP Shift") [particularly germane given the Lasnik (2013) account of (apparent) multiple Sluicing as involving WH-movement of the first remnant but Extraposition of the second]

(87) a. Arthur proved [[$_{CNP}$ that subclass of Mu-grammars in which all rules precede themselves] are recursive] on the basis of Beanworthy's Lemma.
b. *Arthur proved [__ are recursive] on the basis of Beanworthy's Lemma [that subclass of Mu-grammars in which all rules precede themselves] Postal (1974)
(88) a. I have wanted [to know exactly what happened to Rosa Luxemburg] for many years
b. I have wanted [to know __] for many years [$_{CNP}$ exactly what happened to Rosa Luxemburg] Postal (1974)
(89) a. I have wanted [Bob to know exactly what happened to Rosa Luxemburg] for many years
b. *I have wanted [Bob to know __] for many years [$_{CNP}$ exactly what happened to Rosa Luxemburg] Postal (1974)

The surprise

(90) The absent-minded professor$_i$ will say [that {he$_i$/*Lucy}'s working __], if you press him, on a new molecular compound for flubber [Jason Merchant, personal communication]

→Tough Movement and its kin

(91) a. This book is difficult [PRO to read __]
b. This book is difficult [PRO to convince people [PRO to read __]]
c. ?*This book is difficult [PRO to convince people (anyone) [that Mary ought to read _]]

The surprise:

d. This book is difficult [PRO to convince people (anyone) [that they ought to read __]] Chomsky (1981)

(92) a. This book is too valuable for James to lend to Maria
b. This book is too valuable for James to claim to have lent to Maria
d. *This book is too valuable for James to claim that Karen lent to Maria

The surprise:

c. ?This book is too valuable for James$_i$ to claim that he$_i$ lent to Maria Grano and Lasnik (In press)

→Multiple Interrogation (some speakers) Kuno and Robinson (1972), Postal (1974)

(93) Who kissed who
(94) *Who thought [Joan kissed who]
(95) Who convinced who that it was time to leave
(96) *Who convinced Joan [(that) Bob kissed who]
(97) ✓Who wants [__ to marry who]?
(98) *Which man claims that Kevin lent Jill which magazine?

The surprise:

(99) ?Which man$_i$ claims that he$_i$ lent Jill which magazine? Grano and Lasnik (In press)

(100) a. Quem$_i$ disse que pro$_i$ lê que jornal? Portuguese
who said that reads what journal
b. ??Quem$_i$ disse que ele$_i$ lê que jornal?
who said that he reads what journal
c. *Quem disse que Pedro lê que jornal?
who said that Pedro reads what journal

(101) a. ¿Quién$_i$ dice que pro$_i$ lee qué revista? Spanish
who says that reads which magazine
b. ? ¿Quién$_i$ dice que él$_i$ lee qué revista?
who says that he reads which magazine
c. ?* ¿Quién dice que Pedro lee qué revista?
who says that Pedro reads which magazine

III. Towards an Account Based on Grano and Lasnik (In press)

(102) a. Phase-based locality: Gapping (and other similar clause-mate processes) are

phase-bound in the sense of Chomsky (1999) and much subsequent work.
b. The Phase Impenetrability Constraint is operative here. C(omplementizer) is a phase head. The complement of a phase head, T(ense)P in this case, is sealed off.
c. C (and v?) are candidate phase heads.
d. Convergence-based phasehood: Phases are candidate phases with no unvalued features on their head. (Cf. Felser (2004). A version of this is entertained also by Chomsky (2000, p.107) though ultimately not adopted there.)
e. Valuation-based binding: Bound pronouns (**can**) enter the derivation with features that are not valued until the antecedent is merged in.

(103) (102)e slightly modifies Kratzer (2009): Some bound pronouns are born as ϕ-defective "minimal pronouns" that obtain their features via transmission from C or v. (We modify this to transmission from antecedent.)

(104) How this might help with the Gapping contrast:

(105) a. Joe_1 claims that he_1 reads books and Tim_2 <~~claims [$_{\text{NON-PHASE}}$ that he_2 reads~~> articles]
b. *Joe claims that Bill reads books and Tim <~~claims [$_{\text{PHASE}}$ that Bill reads$_i$~~> articles]

(106) Now the Sloan/May family of questions contrast:

(107) a. Who does everyone_i think [$_{\text{NON-PHASE}}$ that he_i should see ∃]?
b. Who does everyone think [$_{\text{PHASE}}$ that Mary should see ∃]?

Cf.

(108) Everyone_i thinks that he_i should see someone
a. ∀x x thinks ∃y | he should see y
b. ∀x ∃y | x thinks he should see y

(109) Everyone thinks Mary saw someone
a. ∀x x thinks ∃y | Mary should see y
b. ≠ ∀x ∃y | x thinks Mary should see y

So far so good. BUT

(110) a. Joe_i claims that he_i reads books and Tim_i <~~claims [$_{\text{NON-PHASE}}$ that he_j reads~~> articles]
→ b.*Joe_i claims that Bill gave him_i books and Tim_j <~~claims [$_{\text{NON-PHASE}}$ that Bill gave him$_j$~~> articles]

(111) a. What book does everyone claim that he read ✓FoQ
→ b. What book does everyone claim that Bill gave him * FoQ

(112) Only a bound **subject** seems to induce the transparency we have been finding.

(113) Why can't *him* in (110)b enter the derivation as a minimal pronoun, thereby (erroneously) allowing gapping?

(114) Why can't *him* in (111)b enter the derivation as a minimal pronoun, thereby (erroneously) allowing the family of questions reading?

(115) A related problem

(116) Subject-internal bound possessors do not induce transparency:

(117) *Joe_i claims that his_i son reads books and Tim_j (~~claims that his$_j$ son reads~~) articles

(118) And roughly parallel for FoQ:

(119) What books does every father claim that his son reads ?* FoQ

IV. Refining the Account (based on a suggestion by Hisa Kitahara):

(120) Under the assumption that a bound pronoun starts with defective Φ-features it naturally follows that those defective Φ-features won't be able to value "fully" the unvalued Φ-features on T.

(121) If so, when such a bound pronoun appears in Spec,T, the T too bears defective Φ-features. Suppose, then, that it is the defective Φ on T that is responsible for the postponement of the application of Transfer, thus keeping the phase open for further computation.

(122) In (117), the bound pronoun *his* is embedded inside the subject DP *his son*, and this subject DP can value the Φ-features of the relevant T.

(123) As a result, there is no T bearing defective Φ-features hence no postponement of sealing off of TP - the desired result.

(124) The same line of reasoning extends to the fact that bound objects don't have the ameliorating effect of bound subjects. As in (117), there will be no postponement of sealing off of TP.

(125) Our claim that bound pronouns **can**, rather than **must**, enter the derivation with unvalued features is now crucial. Otherwise we would exclude examples like:

(126) a. Everone$_i$ thinks Bill likes him$_i$
b. Everyone$_i$ thinks Mary said Bill likes him$_i$

(127) Grano and Lasnik (In press) experimentally verify the bound pronoun effect, via a Mechanical Turk study, for three phenomena: multiple questions, too/enough movement (parallel to tough movement), and comparative deletion. See latest version at http://ling.umd.edu/~lasnik/LING819%202017/GranoLasnik_final.pdf especially the appendix.

V. One more abstractly similar paradigm

(128) Chomsky (1964b) observed that embedded questions disallow extraction from them, and formulated a constraint that had the effect of excluding such cases. A version of the constraint came to be called the WH-island constraint.

(129) *What did he wonder where John put [Chomsky's ex. I assume coreference is not intended between 'he' and 'John' as that would violate an independent constraint.]

(130) Ross (1967) explicitly rejected this constraint of Chomsky's arguing that it is too strong, though he conceded that Chomsky's example is, indeed, unacceptable.

(131) He told me about a book which I can't figure out
whether to buy or not.
how to read.
where to obtain.
what to do about.

(132) This seems to be the familiar control clause exemption. In fact Ross pointed out that these involve infinitival embedded questions, but didn't venture a hypothesis about why that should make a difference.

(133) Ross also provided another type of counter-example to Chomsky's constraint:

(134) Which books did he tell you $\begin{matrix} \\ ?\text{whether} \\ ??\text{when} \end{matrix}^{\text{why}}$ he wanted to read

[The annotations are Ross's. To my ear all three of these are virtually perfect **with coreference**, and, as Ross notes, far better than Chomsky's example.]

(135) About these, Ross said they "differ in no way I can discern from ... Chomsky's example." p.21

(136) Maybe we can discern a way. These seem to instantiate the bound subject paradigms we have seen several times now. If islands follow from phases, this is essentially as things ought to be.

(137) For WH-island amelioration, is it just bound **subjects** that are implicated? I think so, but the facts aren't crystal clear.

(138) ?*Which books did he tell you when his son wanted to read

(139) ?*Which books did he tell you when Mary would read to him

VI. Summary

The transparency effects induced by bound pronominal subjects of finite complement clauses provide novel evidence for (a) a new approach to some clause-mate phenomena; (b) the relevance of a convergence-based view of phasehood; and (c) the view that some bound pronouns enter the derivation unvalued.

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