

## The syntax of fronting phenomena handout 5

### Logical Form 2 (based on Hornstein 1995)

Linking and Weak Cross Over: Wh-questions and quantifier interpretation without ECP

- (1) What did everybody say  
Who said everything?

Pronouns cannot be treated as bound variables in WCO configurations such as (2).

- (2)  $Q_i$  .... pronoun<sub>i</sub> .... vbl<sub>i</sub> (Who<sub>i</sub> did his<sub>i</sub> mother give a book to t<sub>i</sub>)

Conditions:

- (3) Weak Cross Over Principle: A variable cannot be the antecedent of a pronoun on its left.  
(4) A variable cannot be coindexed with a pronoun on its left.  
(5) In configurations such as (2) vbl<sub>i</sub> must c-command pronoun<sub>i</sub>

Higginbotham (1983, 1985): antecedence as a semantic notion is asymmetric, removing coindexation, introducing linking.

- (6) A pronoun cannot be linked to a variable on its right.  
(7) If a pronoun P is linked to a variable V, then V must c-command P.

- (8) His mother kissed everyone

Same results with (4) and (6). Motivation? Counterexamples, WCO effects alleviated in several cases (9).

- (9) Who<sub>i</sub> will be easy for us to get his<sub>i</sub> mother to talk to t<sub>i</sub>  
Who<sub>i</sub> did you stay with t<sub>i</sub> before his<sub>i</sub> wife had spoken to t<sub>i</sub>  
This book<sub>i</sub>, I expect its<sub>i</sub> author to buy t<sub>i</sub>  
Gerald<sub>i</sub>, who<sub>i</sub> his<sub>i</sub> mother loves t<sub>i</sub>

Lasnik and Stowell (1991): the traces are not variables but null epithets.

- (10) John told every senator<sub>i</sub> that the SOB<sub>i</sub> was incompetent

Epithets: like pronouns without inducing WCO effects, subject to principle C (=grammatically look like variables with respect to the BT). Empty categories bound by non-quantificational operators (relative pronoun in appositives, parasitic gaps, topicalization as opposed to Wh-questions, relative pronoun in restrictive relatives, standard quantificational DPs)

- (11) Some tenant in every apartment building<sub>i</sub> has asked its<sub>i</sub> owner to paint the place<sub>i</sub>

Linking approach: linking to the left in structures like (12) for (9), remaining variable interpreted the usual way, via an operator (coindexation is transitive leading to a WCO effect

automatically, linking is not), no new type of empty category (with its peculiar distributional properties) needed.

(12)  $vbl^1$ /name .... pronoun ....  $vbl^2$

(13) pronoun<sup>1</sup> ....  $vbl$  .... pronoun<sup>2</sup> with bound variable interpretations for the pronouns.

Coindexation: WCO            Linking: separate linking processes (pron<sup>1</sup> to pron<sup>2</sup>, pron<sup>2</sup> to  $vbl$ )

Empirical support for linking approach:

- (14) a. \*His<sub>i</sub> mother gave his<sub>i</sub> picture to every student<sub>i</sub>  
b. His<sub>i</sub> mother gave every student<sub>i</sub> his<sub>i</sub> picture  
c. \*His<sub>i</sub> mother packed his<sub>i</sub> sandwiches for every boy<sub>i</sub>  
d. His<sub>i</sub> mother packed every boy<sub>i</sub> his<sub>i</sub> sandwiches  
e. \*His<sub>i</sub> mother introduced every boy<sub>i</sub> to Mary  
f. His<sub>i</sub> mother introduced every boy<sub>i</sub> to his<sub>i</sub> teacher

(15) pronoun<sup>1</sup> .... pronoun<sup>2</sup> ....  $vbl$         vs. (13) Explanation?

Any anaphoric element to the right of the variable will do (PRO, reflexives, epithets), all can form a linking configuration → weakest cross over effect

- (16) a. His<sub>i</sub> mother persuaded every boy<sub>i</sub> PRO<sub>i</sub> to participate  
b. His<sub>i</sub> mother gave every first grader<sub>i</sub>'s picture to the cutie pie<sub>i</sub>'s dad.

Clitic doubling also eliminates WCO effects. Why?

- (17) A quien<sub>i</sub> (\*lo<sub>i</sub>) sorprende su<sub>i</sub> actitud t<sub>i</sub>  
To whom him surprises his attitude  
'Who does his attitude surprise?'

(18) Who<sub>i</sub> did his<sub>i</sub> mother's stories about t<sub>i</sub> annoy t<sub>i</sub>        .... pronoun ....  $vbl^1$  ....  $vbl^2$

Should be ungrammatical contrary to fact: Independent reasons: psych verbs: objects move to a position c-commanding the subject at LF.

Biuniqueness condition in (7): in Koopman and Sportiche (1983) it is the result of the prohibition against an operator locally binding more than one variable. How can adding another pronoun improve a sentence?

Violations of local binding do not fully account for WCO effects.

(19) Binding from the determiner position of DPs: Noone's mother kissed him<sub>i</sub>

(20) Binding into adjuncts from postverbal positions: John read every book<sub>i</sub> before reviewing it<sub>i</sub>

When LF movement alters binding configurations of SS, SS binding theories and bijection are problematic.

- (21) a. \*At least one picture of every senator<sub>i</sub> graced/adorned his<sub>i</sub> desk.  
 b. At least one picture of every senator was on the desk.

- (22) a. The accreditation of no college<sub>i</sub> regulates its<sub>i</sub> quality.  
 b. The accreditation of no college is a laughing matter.

(b) examples: the QNPs can have scope over the clause

- (23) a. The accreditation of no college ever takes longer than three years.  
 b. \*The accreditation of every college ever takes longer than three years.

Problem: licensing the bound pronoun (in contrast with (19)). Moving the postnominal QNP into prenominal genitive position leads to a grammatical structure.

- (24) Every senator<sub>i</sub>'s portrait was on his<sub>i</sub> desk.

- (25) No college<sub>i</sub>'s disaccreditation leads it<sub>i</sub> to improve.

Binding is possible without c-command from adjunct positions, it is not possible from internal argument positions. Binding from non-internal argument positions.

Revised WCOP:

(26) A pronoun P may be linked to a variable V iff V almost c-commands P

(27) A almost c-commands B if A c-commands B or the projection C that dominates A c-commands B

Not a linear but a hierarchical condition for binding (motivated by the contrast between (21) and (24)), similarly to (7) but with extended empirical coverage. Linking instead of binding, almost c-command instead of c-command.

### Linking and quantifier/wh interactions

- (28) a. What did everybody say                      ambiguity  
 b. Who said everything?                      no ambiguity

A more semantically restricted analysis instead of ECP.

Chierchia (1991): two ways to answer a question: individual answer or functional answer mapping one individual to another.

(29) A: Who does everyone love?                      B: Mary/His mother

(30) A: Who does every linguist admire?                      B: His advisor/ Lasnik admires Chomsky, X admires Y,...

Different information, some question do not allow a pair-list answer.

(31) A: Who does no linguist admire?                      B: His mother.

(32) A: Who do most linguists admire?                      B: Their mothers.

Chierchia (1991): Quantifying into questions is not possible.

The semantics of questions: the meaning of questions is the set of their true answers. For (29):

(33) ?{P: P is true and for some x: P= everyone loves x }

Answer: a set of propositions with x filled: individual reading.

Functional reading?

(34) ? {P: P is true and for some f, P= (every<sub>x</sub> (X loves F(x) ) }

The LF phrase marker corresponding to the functional reading

i= f(unction)-index, j=a(rgument) index

(35) Who does every man love? Who<sub>i</sub> [every man<sub>j</sub> [t<sub>j</sub> [love [pro<sub>j</sub> t<sub>i</sub>]]]]

Copy theory of movement, structural disambiguation at LF: if who in Spec CP deleted: object copy has functional interpretation. If object copy deleted, individual interpretation.

(36) [(Who) [every man<sub>j</sub> [t<sub>j</sub> [love who]]]] functional interpretation

(37) [Who [every man<sub>j</sub> [t<sub>j</sub> [love (who)]]]] individual interpretation

Lack of ambiguity in (28b): WCO effect

(38) Who<sub>i</sub> [everything<sub>j</sub> [[pro<sub>j</sub> t<sub>i</sub>] said t<sub>j</sub>]]: binding a pronoun to the left of the variable.

Further condition for pair-list readings: the presence of a generator that can provide a domain, e.g. universal quantifiers.

(39) Tell me where<sub>i</sub> John put every book t<sub>i</sub> pair list answer OK

(40) Tell me what<sub>i</sub> John put t<sub>i</sub> onto every table no pair list answer, WCO violation  
(pro<sub>j</sub> > t<sub>j</sub>)

(41) Tell me [where<sub>i</sub> [every book<sub>j</sub> [John put t<sub>j</sub> [pro<sub>j</sub> t<sub>i</sub>]]]]

(42) Tell me [what<sub>i</sub> [every table<sub>j</sub> [John put [pro<sub>j</sub> t<sub>i</sub>] on t<sub>j</sub>]]]

Account extends to double object constructions:

(43) What did you give everyone for Christmas pair list OK

(44) Who did you give everything no pair list

(45) [What<sub>i</sub> [everyone<sub>j</sub> [you give t<sub>j</sub> [pro<sub>j</sub> t<sub>i</sub>] for Christmas]]]

(46) [Who<sub>i</sub> [everyone<sub>j</sub> [you give [pro<sub>j</sub> t<sub>i</sub>] t<sub>j</sub>]]]

Dative alternation:

(47) I know what you gave everyone for Xmas pair list OK

(48) I know what you gave to everyone for Xmas no pair list

(49) I know [what<sub>i</sub> [everyone<sub>j</sub> [you gave t<sub>j</sub> [pro<sub>j</sub> t<sub>i</sub>]]]]

(50) I know [what<sub>i</sub> [everyone<sub>j</sub> [you gave [pro<sub>j</sub> t<sub>i</sub>] to t<sub>j</sub>]]]

The availability of pair list readings inversely correlates with the possibility of quantifier scope ambiguities!

- (51) John sent someone everything            someone >> everything  
(52) John sent something to everyone        ambiguous

Pair-list readings are not just a special case of scope ambiguities.

- (53) Who do you think that everyone invited t        pair list OK  
(54) Who do you think t invited everyone            no pair list

(55) Who<sub>i</sub> [you think [everyone<sub>j</sub> [[pro<sub>j</sub> t]<sub>i</sub> invited t<sub>j</sub>]

Extraction out of wh-islands eliminates pair-list readings (Aoun and Li 1993)

- (56) What did you wonder whether everyone brought t  
(57) What did everyone know how to fix

Same for Chinese:

- (58) Ni xiang-zhidao meigeren shi-bu-shi dou kandao shenme  
    You wonder        everyone be-not-be all    saw        what  
    ‘What do you wonder whether everyone saw?’

Distinction between referential and non-referential variables: who/what vs. why/how. Only former extract out of islands. Szabolcsi and Zwarta (1992-3): individual and non-individual-denoting variables.

Island Condition: the trace can only be interpreted as a variable ranging over individuals (no functional interpretation) Works for other islands as well.

- (59) inner negative island: What did you say that everyone did not buy t  
(60) extraction out of noun complement: What did you make the claim that everyone said t  
(61) extraction out of adjunct: Who did everyone go to Rome without visiting t

Do more bound pronouns alleviate the WCO effect?

- (62) a. Who packed every boy sandwiches  
      b. Who packed every boy<sub>i</sub> his<sub>i</sub> sandwiches  
  
(63) a. Who told everyone that Bill must shut up  
      b. Who told everyone<sub>i</sub> PRO<sub>i</sub> to shut up

(a) examples: structures like (38), WCO violation, (b) examples: new pronoun on the right edge, no WCO violation.

**Superiority**: same treatment: configurations that display superiority effects are parallel to those that forbid pair-list readings.

- (64) Who bought what            who: generator, what: functionally interpreted wh (defining a function from buyers to things bought)

(65) [Who<sub>i</sub> [t<sub>i</sub> bought [pro<sub>i</sub> N]]]

(66) What did who buy

(67) [What<sub>t</sub> [[pro<sub>i</sub> N] bought t<sub>i</sub>]] WCO violation

Similar dative patterns:

(68) What did you give everyone pair list OK

(69) Who did you give everything no pair list

Multiple questions: universality requirement, exhaustive answers. Universal quantifiers identify the domain of a function, enough in multiple questions to generate a list.

(70) a. Who's coming to the party tomorrow no discourse familiarity required  
b. Who's bringing what to the party tomorrow for every relevant individual

Superiority mitigated when a third wh-word appears

(71) a. \*What did who buy there What<sub>t</sub> [(who=)[pro<sub>j</sub> person] bought t<sub>j</sub> there]]  
b. ?What did who buy where What<sub>t</sub> [pro<sub>j</sub> person] bought t<sub>j</sub> [pro<sub>j</sub> place]]

Superiority effects disappear with *which* DPs

(72) a. Which man reviewed which book  
b. Which book did which man review

Same treatment for WCO, pair list readings of WH/universal quantifier constructions and multiple questions

Reading for next time:

É. Kiss Katalin 2008 Free word order, (non-)configurationality and phases *LINGUISTIC INQUIRY* 39:(3) pp. 441-474.