Logical Form and Covert Movement

1. Cross Linguistic Variation in the form of *wh*-questions

(1)   a. **English** (One *wh*-phrase moves overtly):
                  Who do you think t gave what to whom?
         b. **Bulgarian** (All *wh*-phrases move overtly):
                  Koj   kakvo na kogo dade?
                   Who what   to whom gave?
                  'Who gave what to whom?'
         c. **Japanese** (No *wh*-phrase moves overtly):
                  John-ga   Mary-ni   nani-o   ageta no?
                  John-NOM   Mary-DAT   what-ACC   gave Q
                  'What did John give to Mary?'

How should we characterize thes cross-linguistic variation? Possibilities:

1. Same LFs; different phonological realizations.
2. Different LFs and different phonological realizations.

If 1, what might be universally true about the LF of a *wh*-question?

2. The Study of Covert Movement

Preliminary motivation

A. Provides us with a relatively simple semantic treatment of quantifiers and *wh*-words
B. Accounts for Inverse Scope
C. Allows us to make sense of certain cross-linguistic variations

Potential Predictions (structure diagnoses)

A. Island Conditions
B. Conditions on Ellipsis (Antecedent Contained Deletion)
C. Binding Theory
D. Parasitic Gap licensing

In the ideal world, the type of movement that we will need to postulate for semantics will be diagnosed by A-D, which will also correlate with each other. For example, whenever Island Conditions will show us that there is no covert movement, the same will hold for Binding Theory and Antecedent Contained Deletion.

3. Some Semantic Background

(2)   a.   Some girl is tall.
                 Is true iff
                 $\exists x \ (x \in girl) \& (x \in tall)$
          b.   Every girl is tall.
                 Is true iff
                 $\forall x \ (x \in girl) \rightarrow (x \in tall)$

(3)   a.   *Some* is a relationship between a set A and B that holds iff $A \cap B \neq \phi$.
          b.   *every* is a relationship between a set A and B that holds iff $A \subseteq B$.

(4)   How are the arguments A and B of a quantifier, Q, determined based on the syntactic structure?

In the cases in (2) the A is the sister of Q, and B is the sister of the QNP, QA.

(5)

Q NP

(is) tall
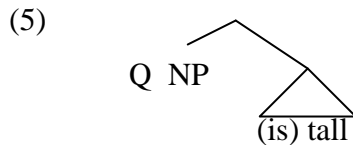
(6)   Simplest Answer:
             The arguments of Q are always its sister, NP, and the sister of QNP.
             (An argument of a function f is always its sister.)

Problem:

(7)   I climbed every tree.
                 Is true iff
                 $\forall x \ (x \in tree) \rightarrow (x \in \{y: I \ climbed \ y\})$

(7)'

I
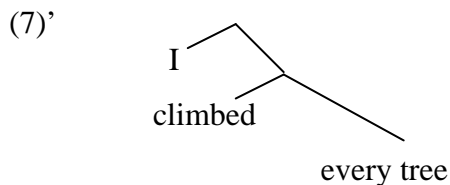
climbed

every tree

(8)   How is the second argument of *every* in (7)' (the argument of *every tree*) determined?

The second argument of *every* seems to refer to the set {y: I climbed y}, but how is that set going to be the meaning of a linguistic constituent?

Our answer to (8) should also give us an account of the ambiguity of the following:

(9)　　A boy climbed every tree.
　　a.　Is true iff
　　　　$\exists x(x \in boy)$ & $(x \in \{climbed\ every\ tree\})$
　　b.　Is true iff
　　　　$\forall x(x \in tree) \rightarrow (x \in \{a\ boy\ climbed\ x\})$

(10)　a.　How does a QNP find its argument when its sister is not a one place predicate (i.e., a set, e.g., when the QNP is generated in object position)?
　　b.　How are arguments determined in constructions that involve multiple quantification so as to account for scopal ambiguities such as the one exemplified in (9)?

4. The Relevance of Movement

(11)　a.　　　　I decided to talk only to John.
　　b.　Only to John did　I decide to talk _____.
　　　　'Only John is an individual x such that I decided to talk to x'

(12)　a.　　　　　I demanded that you read not a single book.
　　b.　Not a single book did I demand　that you read_____.
　　　　'There is not a single book, x, such that I demanded that you read x.

(13)　a.　John talked to who $\rightarrow$ Who did John talk to___?
　　　　　　　　　　　'which is the person, x, such that John talked to x.'

　　b.　John knows to talk to who $\rightarrow$
　　　　　　1.　John knows who to talk to __?
　　　　'John knows who is the person, x, such that he ought to talk to x?'
　　　　　　2.　Who does John know to talk to __?
　　　　'Who is the person, x, such that John knows he ought to talk to x?'

Predicate Abstraction:

If A domiantes α_1, and is merged with α_1, A is interpreted as the appropriate set:
Very informally:
　　　Merge(α_1, A) is interpreted as $[[\alpha]](\{x:A[x/1]\})$.

5. Covert Movement, if it were possible, would answers our questions in (10)

(14)　I demanded that you read not a single book.

　　LF1.　I demanded [that [Not a single book]$_1$ **[you read t$_1$]**]
　　LF2.　[Not a single book]$_1$ **[I demanded that you read t$_1$]**

(9)   A boy climbed every tree.

   LF1   [every tree]$_1$ [a boy climbed t$_1$]

   LF2   [A boy]$_2$ [[every tree]$_1$ [t$_2$ climbed t$_1$]]

The relevance of the VP internal Subject Hypothesis: Allows Surface Scope to be derived by fiewer instances of movement

(9)'   a. Surface Scope
                      [$_{IP}$ [A boy]$_2$ [$_{VP}$ [every tree]$_1$ [$_{VP}$ t$_2$ climbed t$_1$]]]
         b. Inverse Scope
             [$_{IP}$ [every tree]$_1$ [$_{IP}$ [A boy]$_2$ [$_{VP}$ t$_2$ climbed t$_1$]]]
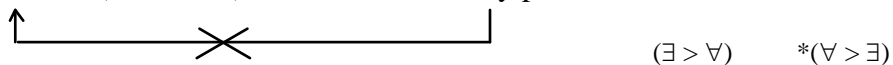
5. Evidence for QR

Preliminary motivation

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Potential Predictions (structure diagnoses)

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6. Properties of movement (Islands)

(15)   a. A (#different) student [[likes every professor] and [hates the dean]]

                                                                ($\exists > \forall$)   *($\forall > \exists$)
            b.   *Guess who John likes and hates the dean?
            c.   *Guess who likes who and hates the dean?

7. Structure Diagnostics Ellipsis

Parallelism: An elided VP, VP_E must be identical to an antecedent VP_A at LF.

(16)   First I saw the man with the binoculars and then you did <saw the man with the binoculars>.

Ellipsis as a diagnostic for structure; Antecedent Contained Deletion (ACD)

(17)   a. I [$_{VPA}$ read every book you did <$_{VPE}$ read t>]
        b. I [$_{VPA}$ wanted to read every book you <$_{VPE}$ wanted to read>].

AT SS VP_E and VP_A are not identical, but at LF they could be if there is cover movement.

(18)   a. [every book you did   <$_{VPE}$ read t>]
                          I [$_{VPA}$ read t]
        b. [every book you   <$_{VPE}$ wanted to read t>]
                          I [$_{VPA}$ wanted to read t].

The Sag/Larson and May Generalization: The QP that contains the elided VP has scope outside the antecedent VP.

(19)   a. I want a book.
        b. I want a book you do.

(20)   a. John's mother wants what he wants.
        b. John's mother wants what he does.

(21)   a. John refused to read EVERY book that we thought he HAD <read>. He was willing to read only some of them.
        b. John refused to read EVERY book that we thought he should <refused to read>. #He was willing to read only some of them.

8. Structure Diagnostics: Binding Theory and Parasitic Gaps

8.1. Binding Theory

Condition C

(22)   ??/*Someone introduced him$_i$ to every friend of John's$_i$. →
        [every friend of John's$_i$] Someone introduced him to t.

Condition A

(23)   ??John and BIll said that [Mary bought every picture of each other/themselves].

(24)   a. John knows which picture of himself Mary bought.

b.   ??John knows which girl bought which picture of himself.

8. 2 Parasitic Gaps

(25)   a.   Which book did you file without reading?
        a.   *Who filed which book without reading?

The Conclusion of the 80s: Binding Theory and the conditions on PG licensing apply at SS.

Dissending : Williams
Two types of Questions:

1. Chomsky's question: Wouldn't a theory without SS be a better theory.
2. Methodological question: From our perspective (that of trying to figure out wherher or not covert movement exists), isn't the conclusion of the 80s, somewhat of an easy way out.

9. Possible Alternative for Condition C

Lebeaux and Condition C

(26)　　a.　Which argument that John$_1$ made did he$_1$ believe?
　　　　b.　?? Which argument that John$_1$ made a mistake did he$_1$ accept?

Lebeaux's account: A derivation is terminated the moment a representation (i.e. a step in the derivation) violates Condition C.

Adjuncts can be merged with the item they modify counter-cyclically. Complements cannot (projection principle).

Chomsky's (1993) interpretation

Lebeaux was right, but we can claim now that Binding Theory applies at LF, if we accept the copy theory of movement.

Some more stuff that we didn't get to:

But, don't we loose the account of ACD (Hornstein, Schmitt, Fox)

Elided VP

(27) John [$_{VP}$ likes every boy Mary does   <likes t>].

Anecedent VP

(28)　　LF-traces:
　　　　　　[every boy Mary does   <$_{VP-E}$ likes t>]
　　　　　　　　　　　John   [$_{VP-A}$ likes t].

　　　　LF-copy-theory:
　　　　　　[every boy Mary does   <$_{VP-E}$ likes t>]
　　　　　　　　　　　John   [$_{VP-A}$ likes [every boy Mary does   <$_{VP-E}$ likes t>]].

A closer look (Fox 1995, 2002, drawing heavily on Fiengo and May 1994)

(29)　　a.　??/*Someone introduced him$_i$ to every friend of John's$_i$.

     b.　?Someone introduced him$_i$ to every person that John$_i$ knows.

     c.　I introduced him$_i$ to every person that John$_i$ did.

(30)　a.　I wanted him$_i$ to meet every person that John$_i$ thought I did <wanted him to meet>.

     b.　I wanted him$_i$ to meet every person that John$_i$ thought I DID <meet>

What should we conclude? To be continued

9. Possible Alternative for Condition A

We were wrong about the landing site of QR

(31)　a.　??The two rivals hoped that Bill would hurt (every one of) each-other's

      operations.

     b.　The two rivals hoped that someone would hurt (every one of) each-other's

      operations.　　　　　　　　　　　　*∃ > ∀　　　　　∀ > ∃

(32)　a.　The two friends hoped that someone would buy each-other's pictures of Mary.

     b.　*The two friends hoped that someone$_i$ would buy each-other's pictures of

      himself$_i$.

     c.　*The two friends hoped that someone$_i$ would buy each-other's pictures of his$_i$

      mother.

For covert *wh*-movement, we had a homework assignment, but here are the relevant facts (corrected for the problem of logophoricity as discussed on Friday 3/23):

(a)　　a.　I told Mary$_1$ which picture of herself$_1$ John was looking at?
       b. * I told Mary$_1$ that John was looking at a picture of herself$_1$?
       c. * I told Mary$_1$ which man was looking at which picture of herself$_1$?

(b)　　a. Who$_1$ did you tell that Mary was looking at *which picture of himself$_1$*?
       b. * Who$_1$ did you tell that Mary was looking at a picture of himself$_1$?

(c)　　a. Which person did you tell that Mary$_1$ bought *which picture of herself$_1$*?
       b. * Which person did you tell that Mary$_1$ bought a picture of herself$_1$?