Wh-Movement 2

For notational convenience, I have used traces \( (t_i, t_j \text{ etc.}) \) to indicate copies throughout this handout.

1 The Basics of \textit{wh}-Movement

(1) \textit{Who}, does John think [\textit{that Mary likes} \( t_i \)]?
   a. \([C_P \ [ \textit{that Mary likes who}] ]\)
   b. \([C_P \ \textit{who}, \textit{that Mary likes who}] ]\)
   c. John think \([\textit{who}, \textit{that Mary likes who}] ]\)
   d. \(P^0+C^0\ [\textit{John think \[ \textit{who}, \textit{that Mary likes who}] ]}\]
   e. \([C_P \ \textit{Who} P^0+C^0\ [\textit{John think \[ \textit{who}, \textit{that Mary likes who}] ]}]\)?

- The \textit{wh}-phrase is merged in its \( \theta \)-position.
- If it needs to move to get Case, it does.
- After having received Case, the \textit{wh}-phrase \( A' \)-moves. \( A' \)-movement, like \( A \)-movement, is successive cyclic. It moves through all intervening [Spec,CP] positions.
- The movement of the \textit{wh}-phrase is triggered by a \( C^0 \) with a \(+Q\) feature. The moved \textit{wh}-phrase ends up occupying the [Spec,CP] of the \( C^0 \) that triggers the movement.

This can be seen in the following example where either the matrix \( C^0 \) or the embedded \( C^0 \) can be \(+Q\).

(2) a. Missy knows \([C_P \ [\textit{which car}]] C^0[+Q]\ [\textit{Mary bought} t_i]\).
   b. (?) \([\textit{Which car}} \ [\textit{does}[+Q]\ [\textit{Mary know } C_P t_i C^0[-Q]\ [\textit{Mary bought} t_i]]])?\)

2 Handling Island Effects

2.1 Strong Island Effects

Extraction out of adjunct clauses and out of subjects triggers strong island effects.

- The notion of the \textit{verbal spine}.
- Only elements on the verbal spine can be extracted.
- Though subjects and adjunct clauses are themselves on the verbal spine, XP’s inside subjects and adjunct clauses are not on the verbal spine. Thus they cannot be attracted. In other words, they are not ‘visible’ to the attractor.

2.2 Weak Island Effects

There are syntactic environments out of which extraction of arguments is degraded but is not impossible. Extraction of adjunctions is, however, impossible. Such environments are often referred to as weak or selective islands.
Wh-islands and Complex NP-islands are both weak islands.

(3) **wh-islands**
   a. Argument extraction:
      ? Who, do you wonder [whether PRO to invite t]?  
   b. Adjunct Extraction:
      * When, do you wonder [whether PRO to invite Bill t]?

(4) **Complex NP-islands**
   a. Argument extraction:
      ? [Which book] did John hear [a rumor [that you had read t]]?  
   b. Adjunct extraction:
      * When, did John hear [a rumor [that you had read LGB t]]?

The variable behavior of arguments and adjuncts has been handled in the literature through two independent principles, the ECP, and Subjacency.

(5) **The Empty Category Principle**: empty categories must be either head governed or antecedent governed.

The definition of the ECP makes reference to the notion of **government**. In current terms, government can be thought of as identification. Arguments are subcategorized and thus when they are moved, the absence of an overt element is visible. On the other hand, this is not the case with adjuncts. This distinction between adjuncts and arguments is captured by the proposal that predicates head-govern the copies of their arguments but not the copies of adjuncts.

Antecedent Government is the idea that a moved phrase cannot be too far from its copy. A moved phrase that is near its copy antecedent governs its copy. By ‘near’, we mean within the smallest NP/CP.

The notion of Antecedent Government also reappears in the related principle of Subjacency.

(6) **Subjacency**: Two consecutive links of a chain can be separated by at most one NP/IP node.

If a movement violates subjacency, then there is no **antecedent government** between the two links of the chain that violate subjacency.

Subjacency seems to be a weak constraint. As long as the movement chain only violates subjacency and not the ECP, we only find a minor degradation in acceptability.

The ECP, on the other hand, triggers a strong violation leading to outright ungrammaticality.

Now, we can explain why there is an argument vs. adjunct asymmetry with wh-islands/Complex NP islands. Objects are sisters to a head (i.e. head-governed), so they do not need **antecedent government** to satisfy the ECP. Long-movement of objects as we see below violates subjacency, which is responsible for the degradation in acceptability.

(7) **Subjacency violations, No ECP violation**
   a. ?**Which car** is [IP John wondering [CP whether C0 [IP PRO to fix which car]]]?
   b. ?**Which car** did [IP John announce [NP a plan [IP PRO to fix which car]]]?
Adjuncts, however, are not properly governed. So for adjunct chains to satisfy the ECP, each link must be antecedent governed by the immediately higher link. If we long-move an adjunct, the antecedent government requirement fails and the ECP kills the derivation.

(8) Subjacency violation and ECP violation
a. *How is \(_{IP}\) John wondering \(_{CP}\) whether \(_{CP}\) \(_{IP}\) PRO to fix the red car how\(_{IP}\))? 
b. *How did \(_{IP}\) John announce \(_{NP}\) a plan \(_{IP}\) PRO to fix the red car how\(_{IP}\))? 

3 Other Environments for A’-Movement

• Relative Clauses

(9) Finite Relative Clauses
a. the man who Roland met 
b. the man who Susan thinks that Roland met 
c. *the man who Susan likes the boy who gave a book to 
d. ??the car that Bill knew how John had fixed 

(10) Infinitival Relative Clauses
a. I found a book for you to read. 
b. I found a book for you to arrange for Mary to tell Bill to give to Tom. 
c. *I found a book for you to arrange for Mary to meet the boy who gave to Tom. 
d. ???I found a book for you to wonder whether to read. 

• Topicalization

b. This book, I asked Bill to get his students to read. 
d. ??This book, I wonder who read. 

• it-Clefts, Pseudoclefts

(12) it-clefts 
 a. It is this book that I really like. 
 b. It is this book that I asked Bill to get his students to read. 
 c. *It is this book that Susan likes the boy who gave to Roland. 
 d. ??It is this book that I wonder who read. 

• Tough-movement
 
Tough-movement is the name given to a certain kind of displacement found in complements of adjectives like easy/tough etc.

(13) a. John is easy for us to please.
b. John is easy for us to convince Bill to do business with.
c. *John is easy for us to introduce Mary to the woman who loves.
d. *What is John easy to give to?
   (* compare with: John is easy to give presents to *)

In addition to the above constructions, \( A' \)-movement is also found in comparatives, and degree clauses (e.g. ‘John is tall enough for you to see.’). The element that \( A' \)-moves in many of these constructions is a covert element, sometimes called a null operator. The constructions where a null operator appears are called null operator constructions.

4 Some Properties of Movement

- Islands

4.1 Properties of \( A' \)-Movement

- Strong and Weak Crossover

Strong Crossover: A pronoun cannot bind a \( wh \)-chain it c-commands.

(14) a. *Who\(_1 \) does he\(_1 \) think t\(_1 \) left?
   (* bad on the reading: who is such that he thinks that he left? *)
   b. *Who\(_1 \) does he\(_1 \) think you saw t\(_2 \)?
   (* bad on the reading: who is such that he thinks that you saw him? *)
   c. Who\(_1 \) t\(_1 \) thinks that he\(_1 \) left?
   d. Who\(_1 \) t\(_1 \) thinks that you saw him\(_1 \) ?

Weak Crossover: If a \( wh \)-chain and a pronoun are co-indexed, the tail of the \( wh \)-chain must c-command the pronoun.

(15) a. Who\(_1 \) t\(_1 \) loves his\(_1 \) mother?
   b. *Who\(_1 \) does his\(_1 \) mother love t\(_1 \) ?
   (* bad on the reading: Who is such that his mother loves him? *)

Recall that weak-crossover is also found with quantifiers.

(16) a. Every boy\(_1 \) likes his\(_1 \) mother.
   b. *His\(_1 \) mother likes every boy\(_1 \).  
   (* bad on the reading that (a) had. *)

This (among other things) has led people to propose that quantifiers also move by \( A' \)-movement. However, this movement is covert and takes place at LF (the level of Logical Form). At this level the configurations with quantifiers and \( wh \)-phrase are identical.

(17) a. Every boy\(_1 \) [t\(_1 \) likes his\(_1 \) mother].
   b. *Every boy\(_1 \) [his\(_1 \) mother likes t\(_1 \)].

\( A \)-movement, on the other hand, does not trigger WCO.
(18) Every boy seems to his mother [t, to be intelligent].

- Licensing of Parasitic Gaps

(19) Which book did John file t, [without reading t.]

The second gap, inside the without reading clause, is called a parasitic gap because it depends upon the main gap (associated with file) for its existence. This can be seen below:

(20) a. *John filed Oresteia [without reading pg].
    b. John filed Oresteia [without reading it].

Only A'-movement is able to license parasitic gaps. A-movement is not able to license parasitic gaps.

(21) a. *This book was filed [without reading pg].
    b. *This book seems to have been filed [without reading pg].

- Case Requirement on the launch site of A'-movement:
A'-movement is not case-driven. The tail of an A'-chain must always receive case. This is in contrast to the tail of a non-trivial A-chain, which must not receive case.

The case-requirement is nicely exemplified by relative clauses in which there is null-operator movement.

(22) a. * the student [Op, [Mary is fond t,]]
    b. * the student [Op, [Mary is fond of t,]]