Other types of Movement

So far we have seen Wh-movement, which moves certain types of (XP) constituents to the specifier of a CP. Wh-movement is also called “A-bar movement”.

We will look at two more types of movement. The first of these is a type of head-movement. That is, an X\(^0\) moves, not an XP. Specifically a V\(^0\).

In effect, we have already seen this movement when we looked at matrix questions:

46a. What has he eaten?
   b. Why should she leave?
   c. Where can I go?
   d. Who must she interview?
   e. When is he leaving?
How do we get the word order in these sentences? In English (and other languages) matrix questions require a verb in $C^0$. Never mind why they do. Just take it as a given that they do.

How does the verb get there?

Certain verbs are already in $I^0$, among them auxiliaries *be* and *have*, the modals *can, could, may, might, should, must*. For those, it is very easy to satisfy the requirement to have a verb in $C^0$:

Head-movement!

When the verb cannot appear in $I^0$, as with all the lexical verbs in English, we get *do*-insertion.

Is *do* inserted straight into $C^0$ to satisfy its need for a verb?

No! It carries tense and agreement. So it is first inserted in $I^0$ and then moves to $C^0$. 
46d. Did you notice that again, movement is to a c-commanding position?
• $I^0$-$to$-$C^0$ movement causes “subject-verb inversion”. Do you see why it would be called that?

Here are some other environments with $I^0$-$to$-$C^0$ movement in English (in addition to Wh-questions):

Yes/no questions:
47. Must he leave?

“Negative-inversion”:
48. [Never before in my life] have I seen such a mess
49. [Only if you give me $10K$] will I give you my piano
48’. *[Never before in my life] I have seen such a mess
49’. *[Only if you give me $10K$] I will give you my piano
50a. [If you give me $10K$] I will give you my piano
   b. *[If you give me $10K$] will I give you my piano
• I⁰-to-C⁰ movement also causes a phenomenon called “Verb Second”. Can you see why it would be called that?

51. [Where] has she gone?
52. [Which of the books I gave her] has she read?
53. [Never before in my life] have I seen such a mess
54. [Only if you give me $10K] will I give you my piano

V2: the verb comes directly after the first constituent and it doesn’t matter how long the first constituent is:

55. [Which of the books that your uncle who studied at Stanford thinks were written by Tolstoy but were actually written by Dostoyevsky and were published by an obscure press] has she read?
• English used to be what is called a “generalized” V2 language. That is, it had V2 everywhere. Now it is a “residual” V2 language. That is, it has V2 in certain restricted environments, as we saw, but not everywhere:

56. Yesterday, John \textit{left}
57. If it rains, she \textit{stays} inside

However, there are plenty of languages that are generalized V2 today:
- The Germanic languages German, Dutch, Swedish and others
- The Kru language Vata (in Africa)
- The Indo-Aryan language Kashmiri (Indian subcontinent)
- The Arikem language Karitiana (Brazil)
Topicalization in a non-V2 L or Topicalization in a non-V2 L

[Yesterday] she read a book
[If you give me $10K] I will give you my piano
[Susan] I really like
Topicalization in a V2 Language

Exactly like wh-questions in English
Here is some German. Notice how the verb comes immediately after the first constituent

    yesterday is the Hans left
    “Yesterday Hans left”

59. [Weil er krank ist] ist er zuhause geblieben.
    [because he sick is] is he at-home stayed
    “Because he is sick, he stayed home”

60. [Wenn es regnet] bleibt Katharina zuhause
    if it rains stays Katharina at-home
    “If it rains, Katharina stays home”

61. [Den Hans] liebt die Maria
    the Hans loves the Maria
    “Hans, Maria loves”
Now look at these:

62. die Katharina liebt den Hans
the Katharina loves the Hans

S   V   O

“Katharina loves Hans”

63. Ich glaube dass die Katharina den Hans liebt.
I believe that the Katharina the Hans loves

S   O   V

“I believe that Katharina loves Hans”

64. * die Katharina den Hans liebt
the Katharina the Hans loves

S   O   V

65. * Ich glaube dass die Katharina liebt den Hans.
I believe that the Katharina loves the Hans

S   V   O

• German is SOV.
• SVO is the result of V2!
• V2 is I₀-to-C₀ movement
• The presence of the complementizer blocks I₀-to-C₀ movement
• It’s not a matter of matrix versus embedded clauses because matrix clauses with a complementizer can’t have V2 and embedded clauses without a complementizer can:

66. Dass er mir so was antun kann!
   that he to-me such something on-do can
   "That he can do such a thing to me"

67. Ich glaube die Katharina liebt den Hans.
   I believe the Katharina loves the Hans
   “I believe that Katharina loves Hans”
• Imagine that you find SVO sentences in the language you are investigating.

  Can you conclude that the language is V2?
No! It could be that this is a genuine SVO language.

In order to conclude that it is V2, the verb would have to be in 2\textsuperscript{nd} place \textit{no matter what} the first constituent is:

Adv V SO
O V S
• “Verb second” is just a descriptive term for a phenomenon.
• The result is produced by $I^0$-to-$C^0$ movement.
• V2 is an example of a parameter.
• UG makes head-movement available for all languages. Some employ it in $I^0$-to-$C^0$ movement, which produces the strings that can receive the descriptive label “verb second”.

Alright. So this is $I^0$-to-$C^0$ movement. But how does the verb get to $I^0$ to begin with?

- via head movement from within the VP: $V^0$-to-$I^0$ movement
How do we know that it is the $V^0+I^0$ complex that moves up to $C^0$ and not just $I^0$ or $V^0$ by itself?

Because the verb appears in $C^0$ completely inflected.
• To see $V^0$-to- $I^0$ movement in simple action, one should really not look at English, because English has the added complication of do-insertion.
• So best to leave the question of English $V^0$-to- $I^0$ for a more advanced class.
• A straightforward language to study $V^0$-to- $I^0$ in is French.
• We saw that $I^0$-to- $C^0$ movement was triggered by among others, the need to form questions in English.

What might trigger $V^0$-to- $I^0$?

The need to get Tense and Agreement on the verb. This predicts that a verb with tense and agreement will be in a different position in the tree than an infinitival verb.
• So can how we tell whether $V^0$-to- $I^0$ has taken place?
• Well, how could we tell if $I^0$-to- $C^0$ movement took place?
• It affects the word order! The verb appears before the subject.
46d. 

Who must she interview? 

Who must she interview?
Maybe we should look for similar effects on word order with $V^0 \rightarrow I^0$ movement: Let’s assume that there is an element $\alpha$, of which we are certain that it is generated under $I^0$ but above the VP. If, in a tensed sentence, the finite verb appears to the left of $\alpha$, we can conclude that it has moved to $I^0$. If the finite verb appears to the right of $\alpha$, we can conclude that it did not move to $I^0$. The infinitival verb would be predicted to appear after $\alpha$. 

![Diagram showing NP_S, I^0, alpha, V^0, NP_O, and V^0 \rightarrow I^0 movement.]
• What are possible candidates for $\alpha$?
  - Negation
  - (certain) adverbs

• Prediction, just looking at negation:
  verb+T+A: $\text{NP}_S \quad \text{V} \quad \text{Neg} \quad \text{NP}_0$
  infinitival verb: $\text{NP}_S \quad \text{Neg} \quad \text{V} \quad \text{NP}_0$

(Emonds, Pollock)
The verb moving to pick up Tense and Agreement
The prediction is verified:

68a. Pierre (ne) voit pas Marie
    Peter sees not Marie
    “Peter does not see Marie”

b.*Pierre (ne) pas voit Marie
    Peter not sees Marie

69a. Ne pas voir Marie est stupide
    neg see Marie is stupid
    “To not see Marie is stupid”

b.*Ne voir pas Marie est stupide
    see neg Marie is stupid