Phonological contraction cannot occur across a syntactic trace!

> Who(m) do you want to succeed t₁?

Why does the (b) reading disappear with wanna?

| a. You want to succeed who(m)!! |
| b. You want who(m) to succeed?!! |

Basic word order

- “Basic word order” refers to the ordering of constituents in a transitive clause, more specifically declarative clauses in which both the subject and object involve a noun (and not just a pronoun), as in the English sentence The dog chased the cat.
- There are six theoretically possible basic word orders for the transitive sentence:
  - SUBJECT-VERB-OBJECT (SVO, e.g., English)
  - SUBJECT-VERB-OBJECT (SOV, e.g., Japanese)
  - VERB-SUBJECT-OBJECT (VSO, e.g., Arabic)
  - VERB-OBJECT-SUBJECT (VOS), e.g., Seediq)
  - OBJECT-VERB-SUBJECT (OVS), e.g., Hixkaryana)
  - OBJECT-SUBJECT-VERB (OSV), e.g., Khwe)

Morphology/Syntax

Movement & Traces

Who(m) did Mary kiss?
Mary kissed whom?!!

瑪麗吻了誰?
Wrong analysis

Problem: There are no constituents in this analysis!

Rules of X’ theory

XP \rightarrow (Specifier), X’
X’ \rightarrow (Complement), X
(X’ \rightarrow Adjunct, X’)

A basic X’ tree

SOV & SVO languages
Phóg Máire an lucharachán
Kissed Mary the leprechaun
“Mary kissed the leprechaun”

The subject (a specifier) intervenes between the V and its complement.

You can’t draw a tree like this!

9% of the world’s languages exhibit VSO order.

Our theory is undergenerating

• By choosing the precise set of the three parameters we can derive the word order of most of the world’s languages... But not all!
• X’ theory requires that nothing may intervene between a head and its complement (by definition). But not all languages are like that.

That’s undergeneration.

Transformations

• A transformation is a rule that moves something around in the sentence.
• We’ve already seen a couple of these:
  – Affix lowering
  – Subject/Aux Inversion
• We can use transformations to solve the undergeneration problem related to word order like VSO in Irish and adjuncts in French.

Head movement

• Head movement is the movement of an element from one head position to another.
• Head movement typically involves
  – V-to-T or T-to-V movement in order to unite a bound inflectional morpheme with a verb,*
  – T-to-C or V-to-C→Q movement in order to mark a clause as a question.
• NB: One other transformation that provides a bound inflectional morpheme a verb to attach to does involved not movement, but rather the insertion of a semantically vacuous verb. (E.g., English do-support)

French adverbs

• Adverbs are adjuncts.
• But adverbs in French appear between the verbal head and the object (complement).
    Je mange souvent des pommes
    I eat often the apples
    “I often eat apples”

You can’t draw a tree like this either!

Tu manges souvent du pain
Spec Verb Adjunct Complement
You eat.2sg often Det bread
'You often eat bread.'
English & French with Aux in T

He will often eat bread.  Tu as souvent mangé du pain.
*He will eat often bread.  *Tu as mangé souvent du pain.

English T-lowering vs. French V-raising

He often eats bread.  Tu souvent manges du pain.
*He eats often bread.  Tu manges souvent du pain.

Word order variation in Vata

S  Aux  O  V
a la saka li  a li saka
we have rice eaten  we eat rice
‘We have eaten rice’  ‘We eat rice’

Major word order types:
SOV, SVO & VSO

VSO languages

VP internal Subject hypothesis (VPISH)

All the arguments of the lexical verb have a VP-internal base position. So subjects start out internal to the VP and only later move up to “subject positions” ([Spec, TP]).

VSO languages are one piece of evidence for this hypothesis, but they are not the only one!
The Locality Constraint on Theta Role Assignment

- By assuming that subjects are generated inside the VP we can make the strong claim that theta roles are assigned entirely within the VP.

  - *The Locality Constraint on Theta Role Assignment*: Theta roles are assigned within the projection of the head that assigns them (i.e., the VP or other predicate).

---

**English**

In English, in a simple sentence with no auxiliary in T, the Subject DP moves to Spec,TP and the inflection suffix moves to V.

**French**

In French, in a simple sentence with no auxiliary in T, the Subject DP moves to Spec,TP and the Verb moves to T.

---

**SOV**

**Word order variation in Irish**

*Tá Máiri ag-pógáil an lucharachán*

Mary is kissing the leprechaun

*Máirse is ing-kiss an lucharachán*

Mary is kissing the leprechaun

*Phóg Máire an lucharachán*

kissed Mary the leprechaun

*Máirse is ing-kiss an lucharachán*

Mary kissed the leprechaun
Irish

In Irish, in a simple sentence with no auxiliary in T, the Subject DP does not move and the Verb moves to T.

And that’s how we get VSO word order!

In Irish, in a sentence with an auxiliary in T, nothing moves!

And that’s why the Subject appears after T

Question

• If subjects in Irish VSO declaratives don’t move to Spec, TP, then why don’t they violate Case Filter?

We’d have to suppose that there is another parameter at work here, such that, in Irish, both T and V can assign nominative Case to a Specifier, whereas in English and French, only T can do so.

VSO

Auxiliary inversion (T-to-C)

Verb inversion (V-(to-T)-C)

Some feature (call it +Q), identifying a clause as a question forces head movement in many languages. One such type is auxiliary inversion in English and many other languages.
**DO-support**

D-Structure:  
S-Structure:

The 'dummy' verb do is inserted into the S-structure to absorb the inflectional suffix when T-to-V movement is impossible due to negation.

The 'dummy' verb do is also inserted into T to pick up the inflection, then raised to C, to form yes-no questions in English, when there is no auxiliary. (Unlike German, English seems to feel ~Aux verbs are 'too heavy' to raise.

**DO-support**

**V-raising**  
(with English negation)

V-raising  
(with English negation)

**VSO as Raising to C?**

- Notice that in English, we also have a VS order, found in yes/no questions.
- These VS orders we analyze as T → C movement, with the subject remaining in its more typical place in the specifier of TP.
- Recall that in English T → C movement is blocked when there is an overt complementizer. (You don’t move T into the C, because it already has phonological content.)

**VSO as Raising to C?**

- If Irish VSO really involves raising to C, then it should be the case that you do not get VSO order when there is an overt complementizer.
- This is false. You get VSO order even when there is a complementizer.
  - Duirt mé gur phóg Máire an lucharachán.
  - Said I that kissed Mary the leprechaun.
  - “I said that Mary kissed the leprechaun.”
- This means that VSO must result from movement of the verb to some position lower than the complementizer. This is the analysis we argued for above, where V raises to T, and the subject is in the specifier of VP.
XP-movement

- When an entire constituent undergoes movement transformation, this is XP movement.
- Two very common types of XP movement are:
  - DP movement – seen in passives and with ‘raising verbs’;
  - Wh-movement – seen in the formation of questions.

Passive constructions

- Passive VPs can be treated as complements of complex auxiliary verbs.
- Passive verbs do not assign Case to their complements (or a \(\theta\)-role to their subjects).

DP-movement in passive constructions

- The movement of a passive verb’s complement to Spec,TP is ‘Case driven’ movement.
- The movement of a passive verb’s complement to Spec,TP is ‘Case driven’ movement.
Restrictions on passives (due to the Case Filter)

- Note that the same reasoning explains why passive verbs never take DP or nonfinite complements.
  - It is believed (that) he likes her.
  - *It is believed him to like her.
  - *There is believed this story by the villagers.
  - *It is believed the rumor by the neighbors.

Raising verbs

- The main characteristic of raising constructions (with ‘raising verbs’ like seem and appear) is the fact that the raised constituent is not a semantic argument of the upper clause.
  - Bill appeared to have left ≠ Bill appeared.
- More proof of this is that the subject of a raising verb can be an expletive.
  - It appeared that Bill left.

DP-movement in raising verbs

Raising verbs like ‘seem’ only assign one 0-role – to the lower clause that is its complement.

Violates the Case Filter!

Nonfinite complements in raising verbs

Raising verbs like ‘seem’ also do not assign Case to any argument (and is thus a lot like the adjectives ‘likely’ or ‘certain’).
Accounting for restrictions on DP movement

- Consider
  - *John is believed [TP Bill to have beaten t₁]
  - *John believes [TP Bill to have beaten t₁]
  - *John seems [TP t₁ speaks Mandarin]

Violates the Case Filter (since passive ‘believe’ cannot assign Case.)
What’s wrong with the third one?!
In other words: Why can’t a DP move out of a tensed clause?

Compare these two:

Violates the θ-criterion: (John has no θ-role – PRO has it now!)
Violates Principle A:
PRO is governed by finite T (and not bound in TP)
*John, seems [TP PRO, speaks Mandarin]

Does NOT violate the θ-criterion: (John has no θ-role – PRO has it now!)

COULD it violate Principle A?

Reminder: DP types

**Overt:**

<table>
<thead>
<tr>
<th>[+anaphoric]</th>
<th>[–anaphoric]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+pronominal]</td>
<td>(impossible) pronouns</td>
</tr>
<tr>
<td>[–pronominal]</td>
<td>anaphors R-expressions</td>
</tr>
</tbody>
</table>

**Covert:**

| [+pronominal] | PRO |
| [–pronominal] | DP-traces |

Reminder: DP types

DP-traces are anaphors!
(And hence they must obey Principle A.)

**Covert:**

<table>
<thead>
<tr>
<th>[+anaphoric]</th>
<th>[–anaphoric]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+pronominal]</td>
<td>PRO</td>
</tr>
<tr>
<td>[–pronominal]</td>
<td>DP-traces</td>
</tr>
</tbody>
</table>

*Bill seems likes Mary.

The anaphoric DP-trace is not bound in its governing category!

Violates Principle A!

Wh-movement

- Three types of wh-questions: subject wh-, object wh-, and adjunct wh-questions.
  - Who will see Bill?
  - Whom did Bill see?
  - Where/when/how/etc. did John see Bill?
Object and adjunct wh-questions

• In wh-questions where the wh-word is a complement of the verb or an adjunct languages may:
  – overtly move all wh-elements to the left periphery:
    • Bulgarian: Kok kogo kak celunal (=Who whom how kissed)
  – overtly move one wh-element to the left periphery:
    • English: Who kissed who(m) how?
  – leave all wh-elements in situ:
    • Mandarin: 誰怎麼吻了誰?

Crossover effects

• Crossover refers to the restriction on possible binding or coreference found between certain phrases and pronouns, as below:
  – Who, does, [he, t, like, t]?
  – *Who, does, [he, t, like, t] (=Who likes himself?)
  – Who, [he, saw, his, boss]?
  – Who, did, [he, his, boss] t, see t,]
  – *Who, did, [he, his, boss] t, see t,] (=Whose boss saw him?)

Explaining crossover effects

• Crossover constraint: A variable cannot be coindexed with a pronoun to its left.
  – Who, does, [he, t, like, t]?
  – *Who, does, [he, t, like, t] (=Who likes himself?)
  – Who, [he, saw, his, boss]?
  – Who, did, [he, his, boss] t, see t,]
  – *Who, did, [he, his, boss] t, see t,] (=Whose boss saw him?)
DP types again

**Overt:**

<table>
<thead>
<tr>
<th>[+]anaphoric</th>
<th>[-]anaphoric</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+]pronominal</td>
<td>(impossible)</td>
</tr>
<tr>
<td>[-]pronominal</td>
<td>anaphors</td>
</tr>
<tr>
<td></td>
<td>R-expressions</td>
</tr>
</tbody>
</table>

**Covert:**

<table>
<thead>
<tr>
<th>[+]anaphoric</th>
<th>[-]anaphoric</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+]pronominal</td>
<td>PRO</td>
</tr>
<tr>
<td>[-]pronominal</td>
<td>DP-traces</td>
</tr>
<tr>
<td></td>
<td>Wh-traces</td>
</tr>
</tbody>
</table>

Wh-traces are R-expressions!
(And hence they must obey Principle C.)

**Covert:**

<table>
<thead>
<tr>
<th>[+]anaphoric</th>
<th>[-]anaphoric</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+]pronominal</td>
<td>PRO</td>
</tr>
<tr>
<td>[-]pronominal</td>
<td>DP-traces</td>
</tr>
<tr>
<td></td>
<td>Wh-traces</td>
</tr>
</tbody>
</table>

(A-)binding

- A-position = any position related to arguments, i.e. a theta-assigning or a case assigning position. In general, any position bearing a ‘grammatical function’ (Roberts 1997:148)
- A-bar position = any non-A position

**Binding (revised definition):**

α binds β if and only if
α c-commands β,
α and β are coindexed,
and α is in an A-position!

Violates Principle C!

Another missing link

**Overt:**

<table>
<thead>
<tr>
<th>[+]anaphoric</th>
<th>[-]anaphoric</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+]pronominal</td>
<td>(impossible)</td>
</tr>
<tr>
<td>[-]pronominal</td>
<td>anaphors</td>
</tr>
<tr>
<td></td>
<td>R-expressions</td>
</tr>
</tbody>
</table>

**Covert:**

<table>
<thead>
<tr>
<th>[+]anaphoric</th>
<th>[-]anaphoric</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+]pronominal</td>
<td>PRO</td>
</tr>
<tr>
<td>[-]pronominal</td>
<td>DP-traces</td>
</tr>
<tr>
<td></td>
<td>Wh-traces</td>
</tr>
</tbody>
</table>

Violates Principle C!
DP types again

- pro (called ‘little pro’) is a covert pronoun used to account for so-called ‘pro-drop’ languages which allow for phonetically unrealized subjects and (sometimes) objects.
  - Italian: Parlo italiano. (= [I] speak Italian.)
  - Turkish: Gel-diğ-i-ni gördüm ([I] saw [him/her/it] coming.)

### Covert:

<table>
<thead>
<tr>
<th>[+anaphoric]</th>
<th>[+pronominal]</th>
<th>PRO</th>
</tr>
</thead>
<tbody>
<tr>
<td>[-anaphoric]</td>
<td>[-pronominal]</td>
<td>pro</td>
</tr>
<tr>
<td></td>
<td>[DP-traces]</td>
<td>Wh-traces</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>[+anaphoric]</th>
<th>[+pronominal]</th>
<th>anaphors</th>
</tr>
</thead>
<tbody>
<tr>
<td>[-anaphoric]</td>
<td>[-pronominal]</td>
<td>R-expressions</td>
</tr>
</tbody>
</table>

### Overt:

<table>
<thead>
<tr>
<th>[+anaphoric]</th>
<th>[+pronominal]</th>
<th>pro</th>
</tr>
</thead>
<tbody>
<tr>
<td>[-anaphoric]</td>
<td>[-pronominal]</td>
<td>impossible</td>
</tr>
</tbody>
</table>

\[ \text{See you next time,} \]