The X’ rules we developed for English

• The Specifier Rule:
  \[ X' \rightarrow (\text{Specifier}) \ X' \]

• The Adjunct Rule:
  \[ (X' \rightarrow X' \text{ Adjunct}) \text{ or } (X' \rightarrow \text{Adjunct X'}) \]

• The Complement Rule:
  \[ X' \rightarrow X (\text{Complement}) \]

• In English, the Specifier is on the left, the Complement on the right, and the Adjuncts can appear on either side.

• Proposal: the side on which Specifiers / Complements / Adjuncts can appear can vary depending on the language.

Generalized X’ Rules

The Specifier Rule: \[ XP \rightarrow (\text{Specifier}) \ X' \text{ or } XP \rightarrow X' \text{ (Specifier)} \]

In other words:
\[ XP \rightarrow X', \text{(Specifier)} \]

The Adjunct Rule: \[ (X' \rightarrow X' \text{ Adjunct}) \text{ or } (X' \rightarrow \text{Adjunct X'}) \]

\[ (X' \rightarrow X', \text{Adjunct}) \]

The Complement Rule: \[ X' \rightarrow X (\text{Complement}) \text{ or } X' \rightarrow (\text{Complement}) \ X \]

\[ X' \rightarrow X, \text{(Complement)} \]

The commas indicate that the order of the elements is irrelevant.

Overgeneration

• This generalized version of X’ theory can produce sentences that are not well formed.

  A theory **OVERgenerates** when it predicts that certain impossible states of affairs are indeed possible.

  A theory **UNDERgenerates** when it fails to predict that certain facts are possible.

• Some of this overgeneration can be dealt with by supposing that grammars of particular languages are parameterized.

Parameters

• The basic idea:
  – Every speaker has the generalized X’ theory as part of their minds (part of Universal Grammar).
  – Each language only uses a subset of the options. These options are called parameters.
  – When a child learns a language it looks for certain cues in the input data to set its parameters.
English Parameter settings

- Specifiers precede heads:
  - Bill plays basketball
  - XP \rightarrow (Specifier) X'
- Adjuncts can be on either side:
  - often kiss intensely.
  - (X' \rightarrow X' Adjunct) or (X' \rightarrow Adjunct X')
- Complements are on the right (follow the head)
  - bucket of chicken
  - X' \rightarrow X (Complement)

Head-initial vs. head-final

<table>
<thead>
<tr>
<th>English</th>
<th>Turkish</th>
</tr>
</thead>
<tbody>
<tr>
<td>He read a book</td>
<td>*O oku-du kitab-i</td>
</tr>
<tr>
<td>He a book read</td>
<td>O kitab-i oku-du</td>
</tr>
</tbody>
</table>

Adjunct-left vs. adjunct-right

<table>
<thead>
<tr>
<th>English</th>
<th>Turkish</th>
<th>German</th>
</tr>
</thead>
<tbody>
<tr>
<td>He left quickly</td>
<td>*O birakti hizla</td>
<td>Er verließ schnell</td>
</tr>
<tr>
<td>He quickly left</td>
<td>O hizla birakti</td>
<td>*Er schnell verließ</td>
</tr>
</tbody>
</table>

Specifier-first vs. specifier-last

<table>
<thead>
<tr>
<th>English</th>
<th>Malagasy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The student reads a book</td>
<td>*Ny mpianatra mamaky boky</td>
</tr>
<tr>
<td>*Reads a book the student</td>
<td>Mamaky boky ny mpianatra</td>
</tr>
</tbody>
</table>

Parameters and basic word order

- The Head parameter and the Specifier parameter can be used to describe a typology of the world’s languages with respect to basic word order.

<table>
<thead>
<tr>
<th>Head</th>
<th>Specifier</th>
<th>Word Order</th>
<th>Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>initial</td>
<td>first</td>
<td>SVO</td>
<td>English, Chinese, Swahili</td>
</tr>
<tr>
<td>initial</td>
<td>last</td>
<td>VOS</td>
<td>Fijian, Malagasy</td>
</tr>
<tr>
<td>final</td>
<td>first</td>
<td>SOV</td>
<td>Japanese, Turkish, Latin</td>
</tr>
<tr>
<td>final</td>
<td>last</td>
<td>OVS</td>
<td>Hixkaryana</td>
</tr>
</tbody>
</table>

Basic word order in the world’s languages

What about... VSO?... OSV?
Summary Parameters

- 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! (e.g., VSO languages)... more on this later.

Reminder: X’ theory

- Up to this point, we have developed a generalized version of X’ theory consisting of three rules.
  
  \[ \text{XP} \to \text{X’}, (\text{Specifier}) \]
  
  \[ (\text{X’} \to \text{X’}, \text{Adjunct}) \]
  
  \[ \text{X’} \to \text{X}, (\text{Complement}) \]

Reminder: X’ theory

- We have already seen many arguments for the Complement rule and the Adjunct rule.

  *It's important to distinguish Complements from Adjuncts!*

  \[ \text{XP} \to \text{X’}, (\text{Specifier}) \]

  \[ (\text{X’} \to \text{X’}, \text{Adjunct}) \]

  \[ \text{X’} \to \text{X}, (\text{Complement}) \]

Reminder: X’ theory

- What about the Specifier rule?

  \[ \text{XP} \to \text{X’}, (\text{Specifier}) \]

  \[ (\text{X’} \to \text{X’}, \text{Adjunct}) \]

  \[ \text{X’} \to \text{X}, (\text{Complement}) \]

What is a Specifier?

- By creating ‘DP’, we got rid of our most prominent example of a Specifier.

Specifier = Subject

- We’ve already seen two examples of subjects being Specifiers:
  - The subject of a clause is in the ‘Spec of TP’.
  - The possessor of an 3 genitive is in the ‘Spec of DP’.
Specifier = Subject

**Are there any other examples?**

Small Clauses

- Small clauses are characterized by carrying the semantic content of a proposition without a tensed or infinitive verbal clause.
  - Bill thinks [Raymond is a fool]
  - Bill doesn’t want [Raymond to be a fool]
  - Bill considers [Raymond a fool]

Small Clauses VPs

- Bill saw [Raymond leave].

Small Clauses DPs

- Bill considers [Raymond a fool].

Small Clauses APs

- Bill considers [Raymond foolish].
Small Clause PPs

• Bill wants [Raymond in the play].

Summary

• Specifiers are now limited to subjects of a clause.
• A clause can be of any category.
• Small clauses are clauses without a tensed or infinitive verbal predicate.
• The subject of a small clause resides in the Specifier of that clause.

See you next time,