

Lecture 11: Directionality. Head-parameter.

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LIN 311: Syntax

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Outline

- ① Word order
- ② Japanese
 - X-Bar Schema for Japanese
 - Scrambling

Word order

X-bar schema

English VP

Recall the X-bar schema for English VP:

$VP \rightarrow (XP) V'$	Specifier rule; No evidence yet!
$V' \rightarrow (XP) V'$	Adjunct rule; $XP = AdvP$
$V' \rightarrow V' (XP)$	Adjunct rule; $XP = PP$ or $AdvP$
$V' \rightarrow V (XP)$	Complement rule; $XP = NP$ (or PP/CP)

Ordering

- The **specifier** on the left;
- The **adjuncts** on either side;
- The **complement** on the right.

X-bar schema

English TP

Now, the X-bar schema for English TP:

$TP \rightarrow (XP) T'$ | Specifier rule; XP – the subject (NP or CP)

$T' \rightarrow T (VP)$ | Complement rule

Ordering

- The **specifier** on the left;
- The **complement** on the right.

X-bar schema

English NP

Similarly, X-bar schema for English NP:

$NP \rightarrow (D) N'$	Specifier rule; determiner
$N' \rightarrow (XP) N'$	Adjunct rule; $XP = \text{AdjP}$
$N' \rightarrow N' (XP)$	Adjunct rule; $XP = \text{PP}$
$N' \rightarrow N (XP)$	Complement rule; $XP = \text{PP (or CP)}$

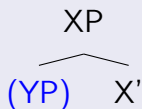
Ordering

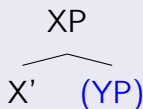
- The **specifier** on the left;
- The **adjuncts** on either side;
- The **complement** on the right.

Order in X-Bar schema

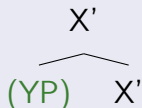
In general, nothing in the theory prevents different orders:

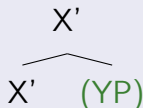
The Specifier rule

$$XP \rightarrow (YP) X'$$


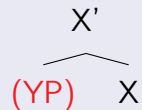
$$XP \rightarrow X' (YP)$$


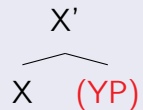
The Adjunct rule

$$X' \rightarrow (YP) X'$$


$$X' \rightarrow X' (YP)$$


The Complement rule

$$X' \rightarrow (YP) X$$


$$X' \rightarrow X (YP)$$


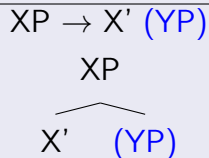
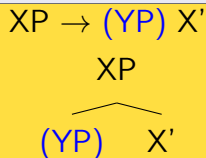
Setting parameters

- Concepts of **Specifier**, **Adjunct**, **Complement** are universally available to humans.
- **Universal Grammar (UG)** provides all possibilities above when humans acquire the language.
- Languages use **only a subset of available options**.
- When a child learns the language, they look for **cues in the input** and **set the parameters** accordingly, by choosing the rules which account for their observations.

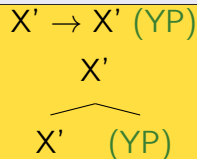
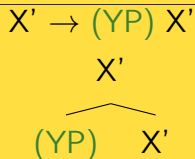
Order in X-Bar schema: English

English

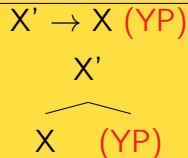
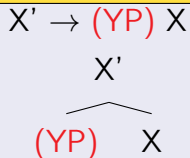
The Specifier rule



The Adjunct rule



The Complement rule



Japanese

Japanese

Complements

- (1) a. John-ga [susi-o tabeta]. NP V
 John-SUBJ [sushi-OBJ ate]
 'John ate sushi.'
- b. John-ga [Paris kara] [New-York e] itta. NP P
 John-SUBJ [Paris from] [New-York to] went
 'John went from Paris to New York.'
- c. [Amerika no daitoryo] PP N
 [America of president]
 'president of America'
- d. Mary-ga [John-ga hon-o yonda] to omotteiru TP C
 M.-SUBJ [J.-SUBJ book-OBJ read] that thinks
 'Mary thinks that John read the book.'

Japanese complements

Complements in English and Japanese

English	Japanese
$N' \rightarrow N (PP)$	$N' \rightarrow (PP) N$
$V' \rightarrow V (NP)$	$V' \rightarrow (NP) V$
$P' \rightarrow P NP$	$P' \rightarrow NP P$
$T' \rightarrow T VP$	$T' \rightarrow VP T$
$C' \rightarrow C TP$	$C' \rightarrow TP C$

We might not have seen evidence for all of them, for example T'...

Head directionality

In English, head always **precedes** the complement: **head-initial lg.**

In Japanese, head always **follows** the complement: **head-final lg.**

Japanese specifiers and adjuncts

Specifiers and adjuncts

- (2) a. John-ga hon-o yon-da.
 J.-SUBJ book-OBJ read
 'John read the book.'
- b. Mary-ga [kono [Nihon kara-no] [kagaku no]
 M.-SUBJ [this [Japan from] [chemistry of]
 gakusei-o] korosita
 student-OBJ] killed.
 'Mary killed this student of chemistry from Japan.'
- c. akai hon-ga
 red book-SUBJ
 'red book'

Japanese specifiers

Specifiers in English and Japanese behave the same

English	Japanese
NP → (XP) N'	NP → (XP) N'
VP → (XP) V'	VP → (XP) V'
PP → (XP) P'	PP → (XP) P'
TP → XP T'	TP → XP T'
CP → (XP) C'	CP → (XP) C'

We might not have seen evidence for all of them, for example for VP, PP, or CP...

Japanese adjuncts

Adjuncts in Japanese always on the left

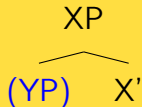
English	Japanese
$N' \rightarrow (XP) N'$	$N' \rightarrow (XP) N'$
$N' \rightarrow N' (XP)$	
$V' \rightarrow (XP) V'$	$V' \rightarrow (XP) V'$
$V' \rightarrow V' (XP)$	
$P' \rightarrow (XP) P'$	$P' \rightarrow (XP) P'$
$T' \rightarrow (XP) T'$	$T' \rightarrow (XP) T'$
$C' \rightarrow (XP) C'$	$C' \rightarrow (XP) C'$

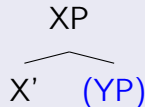
We might not have seen evidence for all of them, for example for TP or CP...

Order in X-Bar schema: Japanese

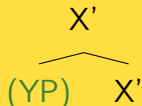
Japanese

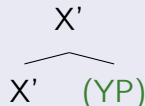
The Specifier rule

$$XP \rightarrow (YP) X'$$


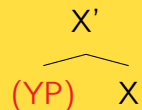
$$XP \rightarrow X' (YP)$$


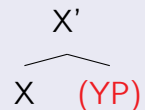
The Adjunct rule

$$X' \rightarrow (YP) X'$$


$$X' \rightarrow X' (YP)$$


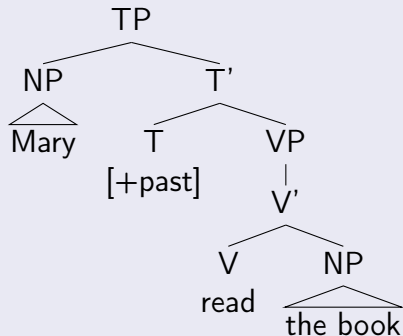
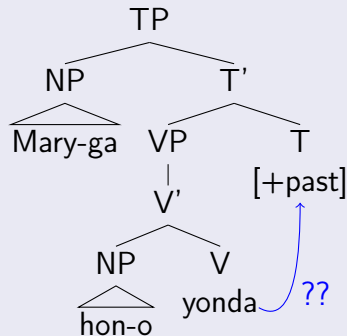
The Complement rule

$$X' \rightarrow (YP) X$$


$$X' \rightarrow X (YP)$$


English vs. Japanese

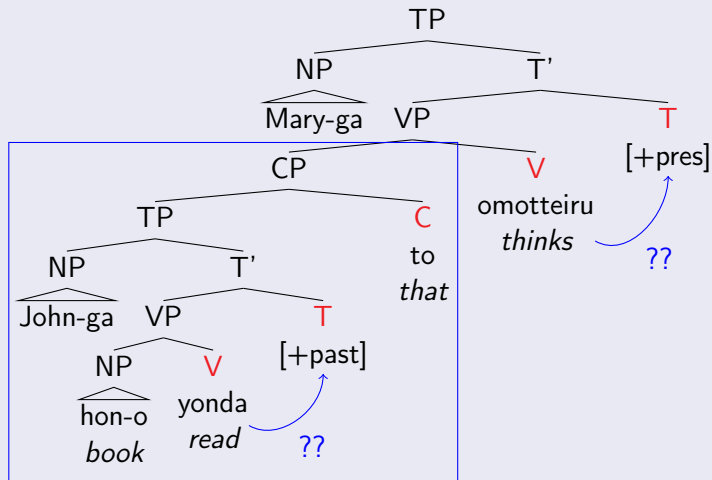
(3) Mary read the book.

(4) Mary-ga hon-o yonda.
Mary book read

Note: It is unclear if V moves to T in Japanese. This movement will not affect the word order, so we need some other tests...

Japanese embedded clause

- (5) Mary-ga [John-ga hon-o yonda] to omotteiru
 M.-SUBJ [J.-SUBJ book-OBJ read] that thinks



Scrambling

Free word order in Japanese

In Japanese, basic “unmarked” word order is SOV, (6-a), but all other orders are also possible, possibly with a slight change in meaning (as long as the verb stays last):

- (6)
- a. Taroo-ga Hanako-ni piza-o ageta.
Taroo-SUBJ Hanako-TO pizza-OBJ gave
'Taroo gave pizza to Hanako.'
 - b. Taroo-ga piza-o Hanako-ni ageta.
 - c. Piza-o Taroo-ga Hanako-ni ageta.
 - d. Piza-o Hanako-ni Taroo-ga ageta.
 - e. Hanako-ni piza-o Taroo-ga ageta.
 - f. Hanako-ni Taroo-ga piza-o ageta.

Question: How is it possible?

Scrambling

Hypothesis (Yuki Kuroda)

- The **basic word order is SOV**, and this is a order which is built first in all of the sentences.
- All **additional orders** are not built directly, they are obtained from the basic order by **moving one (or more) constituents** to some other position, resulting in **scrambling**.

Scrambling as movement

Proving the hypothesis: Part 2

Quantifier (such as *2-ri* below) must **occur as a sister to the NP (or N')** it quantifies (*gakusei* 'student' below).

- (7) a. *Gakusei-ga* piza-o katta.
 student-SUBJ pizza-OBJ bought.
 'A student bought pizza.'
- b. *Gakusei-ga 2-ri* piza-o katta.
 student-SUBJ 2-CL pizza-OBJ bought.
 'Two students bought pizza.'
- c. **Gakusei-ga* piza-o *2-ri* katta.
 student-SUBJ pizza-OBJ 2-CL bought.
 'Two students bought pizza.'

Note: To say *A student bought two pizzas* Japanese will use a different quantifier: (7-c), *2-ri* must quantify *students*, and not *pizzas*.

Scrambling as movement

Proving the hypothesis: Part 2

However, in some cases **quantifier can be separated** from its NP (or N'). It happens when a constituent is found in an **unusual position**.

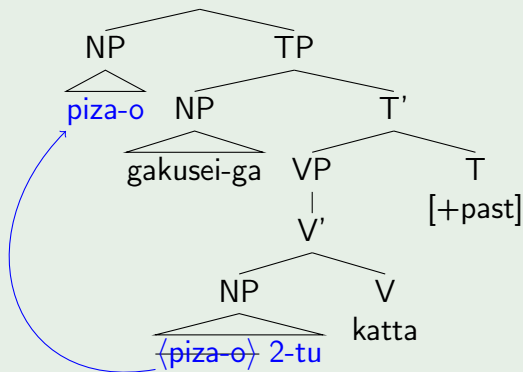
- (8)
- a. Gakusei-ga piza-o 2-tu katta.
student-SUBJ pizza-OBJ 2-CL bought.
'A student bought two pizzas.'
 - b. Piza-o gakusei-ga 2-tu katta.
pizza-OBJ student-SUBJ 2-CL bought.
'A student bought two pizzas.'
 - c. Piza-o 2-tu gakusei-ga katta.

In cases with scrambling like above, the quantifier can stay in the **position, where we would expect the constituent to occur**, (9).

Of course, it can also move together with the constituent, (8-c).

Scrambling as movement

- (9) Piza-o gakusei-ga 2-tu katta.
 pizza-OBJ student-SUBJ 2-CL bought.
 'A student bought two pizzas.'



Scrambling as movement

What this shows

- **Basic structure** is generated according to **standard X-bar rules** giving **SOV** word order.
- “Unusual” orders are obtained using NP or N’ **movement**, sometimes stranding the quantifier.
- Quantifier may stay in the position where the original NP (or N’) was originally merged.

This is a good evidence for **movement** of NPs (or N’s):

- Even when we hear the scrambled phrase at the left of the sentence, it also has a presence in its expected position.
- We will not concern ourselves at the moment with the question of where these constituents move. . .

Summary

- **Word order properties** of various languages can be accounted for by assuming that different rules of the X-bar theory are active.
- The major distinction is between
 - **head-initial** $[X' \rightarrow X (ZP)]$, and
 - **head-final** $[X' \rightarrow (ZP) X]$ languages.
- There is also an operation called **movement**, which allows us to move NPs to get other word orders.
 - All movements should be justified and supported by some evidence!