

September 18, 2003

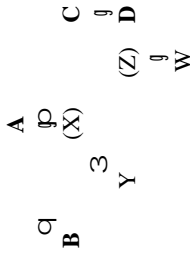
CLASS 8: PHRASES

PHRASE STRUCTURE RULES

A **rewrite rule** has a single symbol on the left and one or more symbols on the right: the symbol specified on the left side is rewritten according to the rule defined on the right. **Parenthesized** elements are **optional**; the **linear order** of the right-hand side elements must be maintained. For illustration of these rules, we may employ **labeled bracketing** or **tree diagrams**. Take (1)-(2):

- (1) a. $A \rightarrow B(X)C$ (1') a. $[A B(X)C]$
 b. $C \rightarrow D$ b. $[c D]$
 c. $X \rightarrow Y(Z)$ c. $[x Y(Z)]$
 d. $Z \rightarrow W$ d. $[z W]$

- (2) a. $[A B ([x Y ([z W])]) [c D]]$
 b.



In linguistics, rewrite rules are also known as **phrase structure rules**: they are the rules needed to describe **phrase structure**. The collection of such phrase structure rules is known as a **phrase structure grammar**, where grammar is understood in the usual sense (basically, as in Class 2).

The **PS rules** in (1)-(2) are **abstract**; the symbols are **placeholders** form some properly defined or understood element(s). Applied to linguistics (syntax), we can give them more precise **labels**. What would the label of particular phrase structure be? Think **categories** (Class 3)... Any clue?

Yes: the **categorial labels** tell us indeed something interesting about syntactic phrase structure. Noun (N), verb (V), preposition (P) etc. There is something very **systematic** about the way these categories go together — in English as well as in all other languages (viz. **universality** of UG!).

- (3) The nice lecturer teaches passionately phrase structure to all the students.

As a first pass, we can **parse** the sentence by determining all categorial labels:

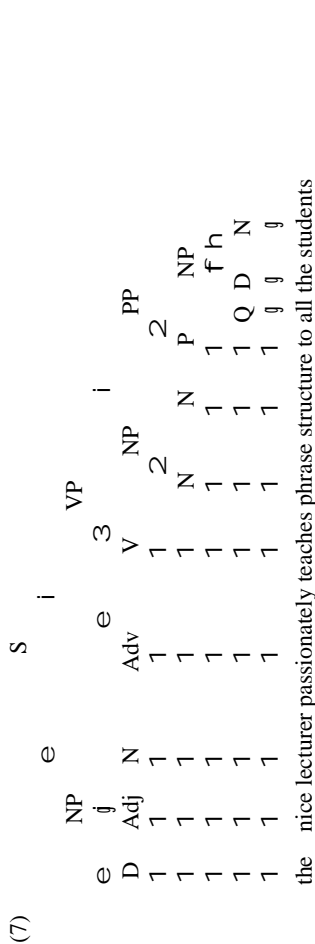
- (4) $[D The] [Adj nice] [N lecturer] [Adv passionately] [v teaches]$
 $[N phrase] [N structure] [P to] [QD all] [D the] [N students]$

But the arising structure is rather **flat** — we now need some rules that tell us how all the **syntactic elements** or grammatical categories of this sentence — and all others! — go together.

Intuitively (or by traditional grammar), the entire **string of words** in (3) forms a **sentence** — and this sentence consists of a **subject**, a **predicate**, and possibly something else (such as **modifiers**). (Again, this statement about the sentence (3) is **more general**; all sentences follow this schema.)

- (5) a. $S \rightarrow NP VP$
 b. $NP \rightarrow (Q) (D) (Adj) N$
 c. $VP \rightarrow (Adv) V (NP) (PP)$
 d. $PP \rightarrow P NP$
 (e. $N \rightarrow (N) N$ or $NP \rightarrow \dots (N) N$)

- (6) a. $[S [NP the nice lecturer] [VP passionately teaches phrase structure to all the students]]$
 b. $[NP [D the] [Adj nice] [N lecturer]]$
 c. $[VP [Adv passionately] [V teaches] [NP phrase structure] [PP to all the students]]$
 d. $[PP [P to] [NP [Q all] [D the] [N students]]]$
 (e. $[N [N phrase] [N structure]]$ e'. $[N [N phrase] [N structure]]$)



A propos flat structure: we can modify PS rules in such a way as to enforce **binary branching**. But we will leave this project (**X'-Theory**) for the second part of the course, syntax in *MASOE*.

NB: Brinton and van Gelderen slightly differ in their **terminology and presentation**. Brinton puts more emphasis on the classic PS rules, which van Gelderen doesn't even mention as such. Rather, she presents an advanced system which makes use of **intermediate projection levels**, i.e. the X' of X'-Theory, something along the following lines: $XP \rightarrow (AP) X'$ and $X' \rightarrow X (ZP)$. But I believe we can leave the details for later; I'm happy for now with either option, as long as you don't get confused. **Any confusion should be resolved in discussion (now or next class)**.

In the remainder of this and the next class, we will go over the material in the two books.

Further readings:

NB: You should read the two relevant chapters for this class again very, very carefully!

See the relevant chapters in any of the *Syntax*-references given at the very bottom of the Class 1 handout.