CS 6740/IS 6300
Lecture 7: TAG parsing intuitions

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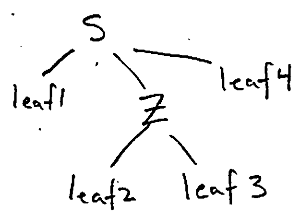
1. Let $w = w_1 w_2 \cdots w_n$ be a length-n sentence. For now, assume no adjunction.

When is an initial tree α be the root of a derivation tree for w?

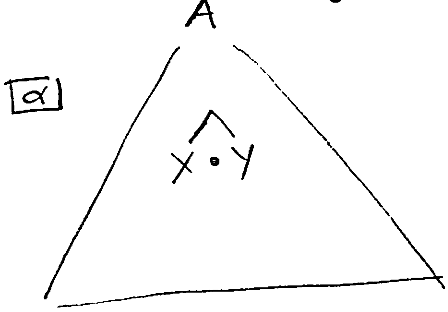


... if $w = w_1' w_2' w_3' w_4'$ for some substrings w_i', and each leaf$i \Rightarrow^* w_i'$.
(Either leaf$i$ is a sequence of terminals or substitution of some tree $\hat{\alpha}$ into leaf$i$ "eventually" yields a fringe that is w_i'.)

This suggests a "left-to-right" search of the leaves of a possible start tree:

for $i = 1 .. \#$ of leaves:
given what leaf1 .. leaf$i$-1 cover, figure out what tree could substitute into leaf$i$ and what w_i' — a section of w — is.

2. Dot notation: for tracking search in an elementary tree.



"everything to the left has been checked"
"everything to the right must be verified".

state: [α, address of X in α, right,]
$\equiv$ [α, address of Y in α, left,]

3. Dynamic programming idea: