LING 610

Equivalent Σ, F derivations, Phrase Markers, and Reduced Phrase Markers

Σ: S

F:

S → NP VP VP → V NP
NP → John V → likes
NP → Mary

The **equivalent Σ, F** derivations of "John likes Mary", given the above Σ, F grammar:

S	S	S
NP VP	NP VP	NP VP
John VP	John VP	NP V NP
John V NP	John V NP	John V NP
John likes NP	John V Mary	John likes NP
John likes Mary	John likes Mary	John likes Mary

S	S	S
NP VP	NP VP	NP VP
NP V NP	NP V NP	NP V NP
John V NP	NP likes NP	NP V Mary
John V Mary	John likes NP	John V Mary
John likes Mary	John likes Mary	John likes Mary

S	S
NP VP	NP VP
NP V NP	NP V NP
NP likes NP	NP V Mary
NP likes Mary	NP likes Mary
John likes Mary	John likes Mary

The **Phrase Marker** of "John likes Mary", given the above Σ, F grammar:

{S, NP VP, NP V NP, NP likes Mary, NP V Mary, NP likes NP, John VP, John V NP, John V Mary, John likes NP, John likes Mary}

[This set consists of all the lines occurring in any of the equivalent derivations of "John likes Mary", given the above Σ, F grammar]

The **Reduced Phrase Marker** of "John likes Mary", given the above Σ, F grammar:

{S, NP likes Mary, John VP, John V Mary, John likes NP, John likes Mary}

[This set is the subset of the Phrase Marker consisting of the terminal string plus all the monostrings (the strings containing exactly one non-terminal surrounded by any number of terminal symbols) Lasnik and Kupin observed that this set suffices to compute all the 'is a' relations.]

Collapsed derivation tree for "John likes Mary", given the above Σ, F grammar: