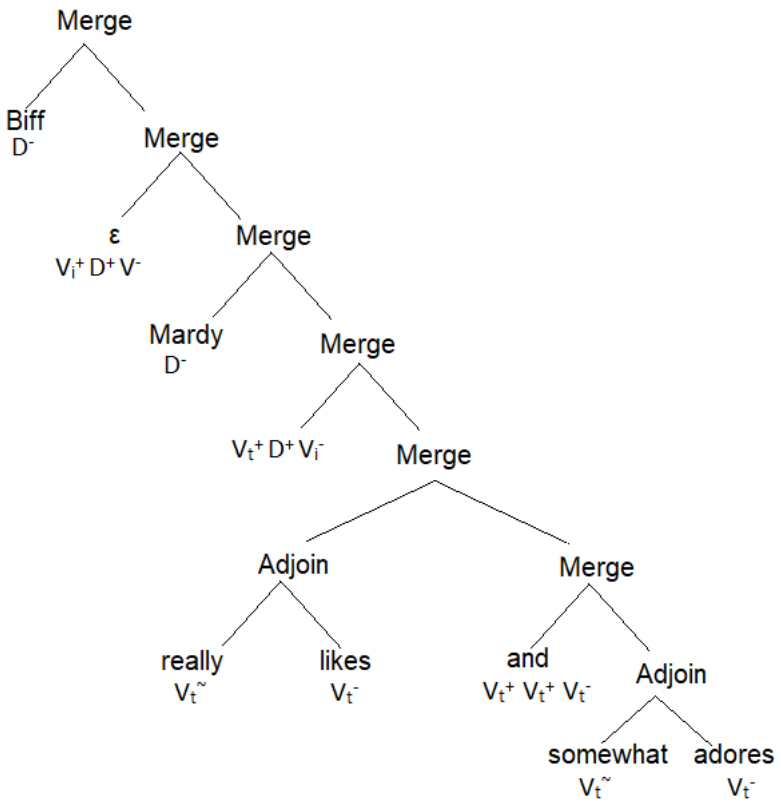
Computational Syntax Lecture Notes (08/30/2019 Friday)

Syntax
→Structure <—> Meaning
→Inverted T-model
→CFG
→(C)CG
→MG
→TAG

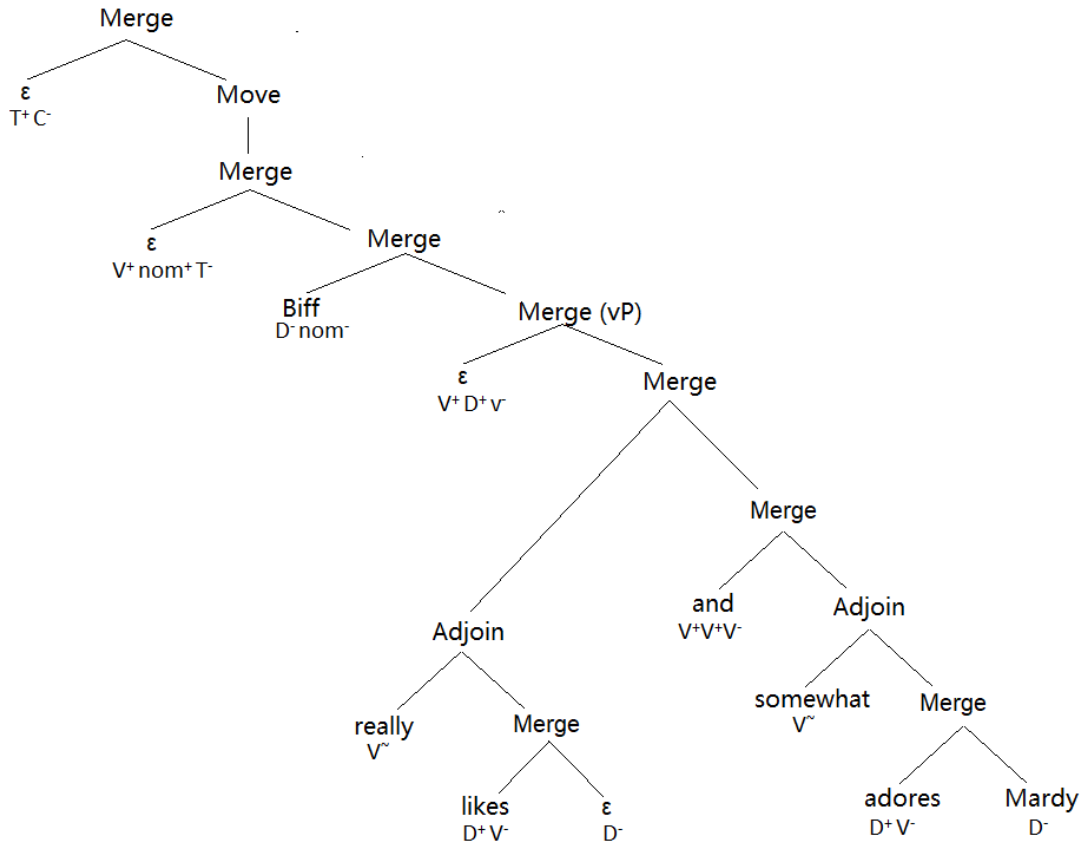
CG: Functional Application

Biff	**really**	**likes**	**and**	**somewhat**	**adores**	**Paul.**
NP	σ/σ	(S\NP)/NP	(σ\σ)/σ	σ/σ	(S\NP)/NP	NP
	---------->			---------->		
	(S\NP)/NP			(S\NP)/NP		
	----------> 。					
	(S\NP)/NP					
	---------->					
	S\NP					
----------<						
S						

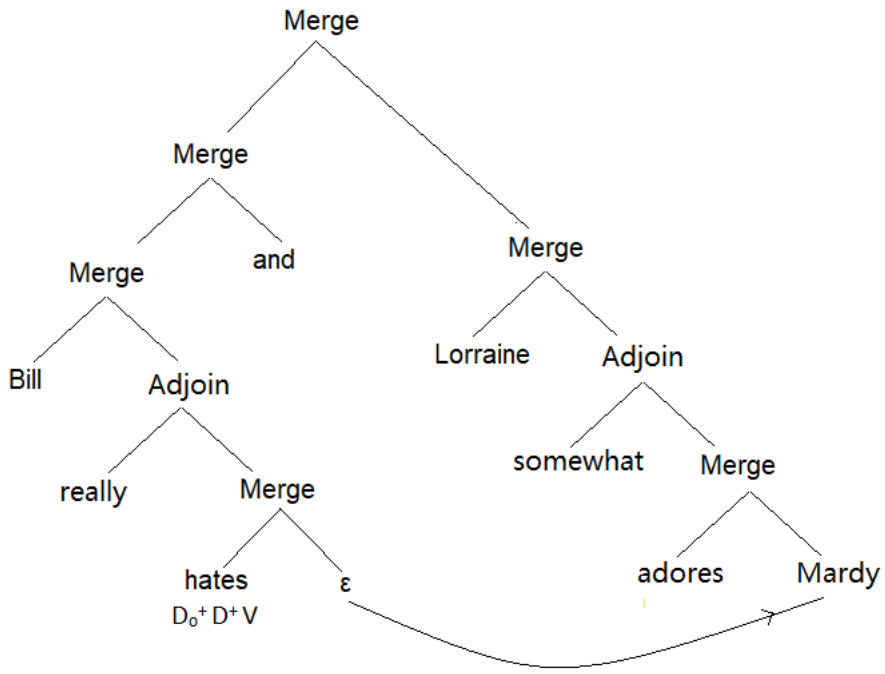
MG:



(Note: V_i = intransitive verb, V_t = transitive verb, "~" = adjunction)



Biff	**really**	**hates**	**and**	**Lorraine**	**somewhat**	**adores**	**Mardy.**
NP	σ/σ	(S/NP)\NP	(σ\σ)/σ	NP	σ/σ	(S/NP)\NP	NP
	---------->				---------->		
	(S/NP)\NP				(S/NP)\NP		
----------<				----------<			
	S/NP				S/NP		
	----------				----------		
		S\NP					
		---------->					
		S					



(Note: D_o = object DP)

Functional Application

$$\textbf{FA} \qquad \frac{\sigma/\tau \qquad \tau}{\tau} >$$

$$\textbf{FA} \qquad \frac{\tau \qquad \sigma\backslash\tau}{\tau} <$$

Functional Composition

$$\textbf{FC} \qquad \frac{\sigma/\tau \qquad \tau/\rho}{\sigma/\rho} > B$$

$$\textbf{FC} \qquad \frac{\tau\backslash\rho \qquad \sigma\backslash\tau}{\sigma\backslash\rho} < B$$

Type Raising

$$\textbf{TR} \qquad \frac{\tau}{\sigma/(\sigma\backslash\tau)} > T$$

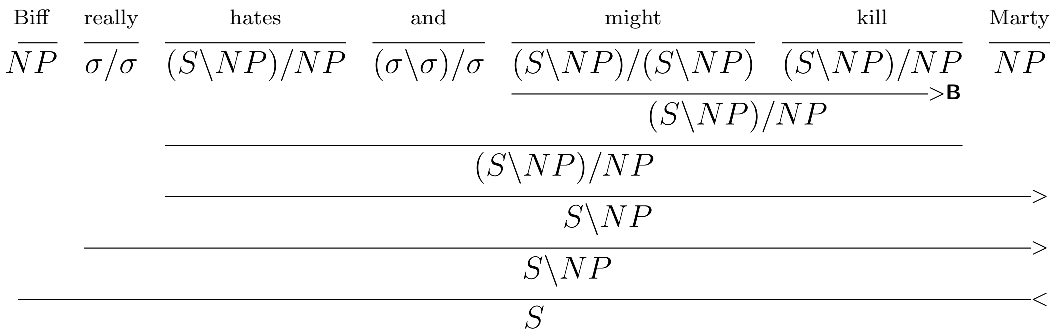
$$\textbf{TR} \qquad \frac{\tau}{\sigma\backslash(\sigma/\tau)} < T$$

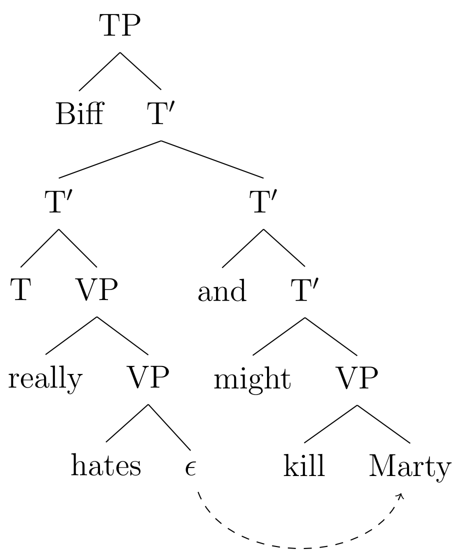
Crossing Functional Composition

$$\textbf{CFC} \qquad \frac{\sigma/\tau \qquad \tau\backslash\rho}{\sigma\backslash\rho} > Bx$$

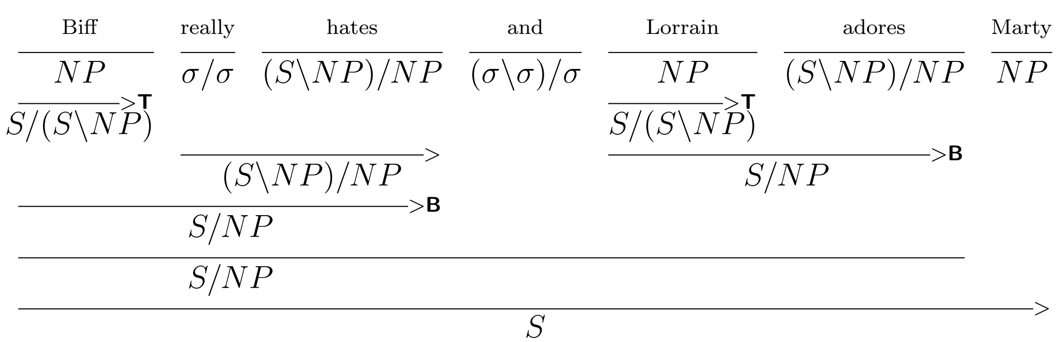
$$\textbf{CFC} \qquad \frac{\tau/\rho \qquad \sigma\backslash\tau}{\sigma/\rho} < Bx$$

The following is an example of functional composition. In the analysis, the scope of really applies to both "hates" and "might kill", which can not be realized in minimal grammar.

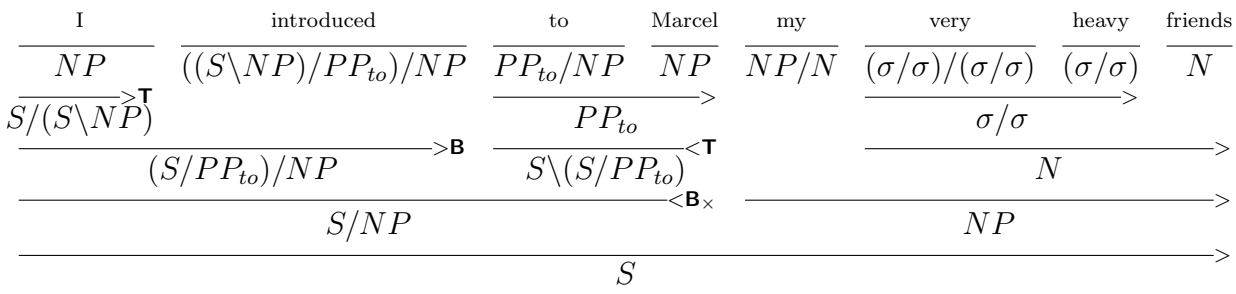




This is an example of type raising.



This sentence is an example of crossing functional composition.


I
introduced
to
Marcel
my
very
heavy
friends
NP
((S\NP)/PP_to)/NP
PP_to/NP
NP
NP/N
(σ/σ)/(σ/σ)
(σ/σ)
N
>T
S/(S\NP)
>
PP_to
σ/σ
>B
(S/PP_to)/NP
<T
S\(S/PP_to)
>
N
<B×
S/NP
>
NP
>
S