On The Equivalence FSA and L-Grammars (right)

$A = \langle S, \Sigma, M, s_0, F \rangle$

$M = \{ \langle\langle s_i, a \rangle, S_{i,a} \rangle \mid s_i \in S,\ a \in \Sigma + \{\varepsilon\},\ S_{i,a} \subseteq S \}$

$G = \langle N, T, n_0, P \rangle$

$P = \{ n_i ::= u\ n_j,\ n_i ::= u \mid n_i, n_j \in N,\ u \in T + \{\varepsilon\} \}$

$[\,]: S \to N$

S — $N = [S]$

Σ = T

s_0 = $n_0 = [s_0]$

$\langle\langle s_i, a \rangle, \{ s_{ia,1}, \ldots, s_{ia,kia} \} \rangle \Leftrightarrow [s_i] ::= a\ [s_{ia,1}], \ldots, [s_i] ::= a\ [s_{ia,kia}]$

$F = \{ s_{F,1}, \ldots, s_{F,k} \} \Rightarrow [s_{F,1}] ::= \varepsilon\ , \ldots , [s_{F,k}] ::= \varepsilon$

Exercise: How condition on F has to be extended when implication is reversed?

$L(A) = L(G)$

Exercise: How condition on F has to be extended when implication is reversed?

Consider the grammar:

S::= a B
B::= a C | d
C::= b B

Compare it with:

Consider the grammar:

S::= a B
B::= a C | d D
C::= b B
D::= ε

Then: We can require a preliminary transformation from Linear to the sub-class of Strongly Linear (i.e. productions have the form: Either ni::=u nj, or ni::=ε)