Sound's $\rightarrow 0B/1A$, $A \rightarrow 0/05/1AA$, $B \rightarrow 1/15/0BR$ (23) X = 00110101 $G = (£5,A,B}, £0,13,P,S)$ derivation true for X = 00110101

Left most derivation. ??

Symps = OB/IA, A -> O OS/IAA, B-> 1/15/OBB <= 00110101 G= ({S,A,B}, {0,13,1,5) Lewvation tree for $\alpha = 00110101$ Left most derivation. 19 S=) 0B=) 00BB=)001SB=)0011AB=)00110SB 00110101 = 6011010B = 001101AB

S) OB/IA, A > O (OS/IAA, B) 1/15/OBB x=00110101 derivation true for X = 00110101Left most B = 1 1 1 2 2/= 2 1 20 (= 21 1 2) (= 2) (allondo - Salalolla) - Jaralian

S-) OB/IA, A-) 0/05/IAA, B-) 1/15/OBB X = 00 11 01 01 Right most derivation ?? S=) OB=) OOBB=) OOB 1 (= 00110s1 (0011010) (= 001101A1

9

S) OB/IA, A > O (OS/IAA, B) 1/15/OBB derivation tree for X = 00|10|0|

S -) OB /1A, A -) O/OS/1AA, B-) 1/15/0BB (28) X = 00 110101 Another left most derivation. For X = 0011010179S-) OB =) OOBB =) OOISB => OOIIAB oonolol & oonolog & oonor & Same way Another Rightmost derivation also Emists. For Same derivation tere.

Ambiguity in CFG.

"In books selected information is given."

Celected — books

Information. Example! -

Definition! - A terminal string $w \in L(G_1)$ is ambiguous if

I two or more derivation true for W.

(I two or more left most derivation of W)

- A CFG G is ambiguous it I some WEL(G) which

is ambiguous.

- A CFL for which every CFG is ambiguous then CFL in Colled inherently ambiguous.

Example: G1= ({53, {a,b, +, *3, P, S) P: S-) S+S (S*S a (b W= a+axb. one derivation thee.

Arrival and the second of the

Entrope was planting by

G= ({53, {a,b, +, *3, P, 5) P: S-) S+S (S*S a (b W= a+axb. one derivation there. Consider to (10) 1 7 M const. to formation beautiful more in the least Arrival and the second of the second dates and the second dates at the second dates at the second dates at the

and of the plant white has been a commented

Gi= ({53, {a,b, +1*3, P,S) P: S-) S+S (S*S a (b W= a+axb. Another deviation the one derivation there. 5 + 5 StS a A A S Two demation trues exists so W= a+ axb is ambiguous and the G1 is also Ambiguous.

(33)

one derivation tree

G= (Es3, Ea, b3, Pes) Another Sxemple! P: 1->565/a one derivation true

W= abababa

Another derivation tue a SbS

W= abababa y Ambiguony =) G y ambiguous

Simplification of CFG G= (ViT, PiSt), starting rankble SEV Variable terminy Productions L(G) = { W & T* / S = N } () May be not all Symbols VUT are used

There is a possibility for Simphification.

(36)

Example:
$$G_1 = \{\{\{s, A, B, D, E\}, \{a, b, c\}, P, S\}\}$$

$$P = \{\{\{s, A, B, D, E\}, B \rightarrow D, E \rightarrow c/e\}\}$$

$$L(G_1) = \{\{\{a, A, B, D, E\}, B \rightarrow D, E \rightarrow c/e\}\}$$

Q

61= ({1,A,B,D,E3, {a,b,c3, P,S) 1= {S -> AB, A-> a, B-> b, B-> D) E -> c/E/3 L(b)= { W +T + / s = 2 w = { 963 (S=) AB =) aB =) ab G'= (V', T', P', S) Romate Revening V, Tip Which are not useful. V'= {S,A,B}, T'= {a,b} p' = remare red Colored & from P = {S-) AB, A-)a, B-)bg.