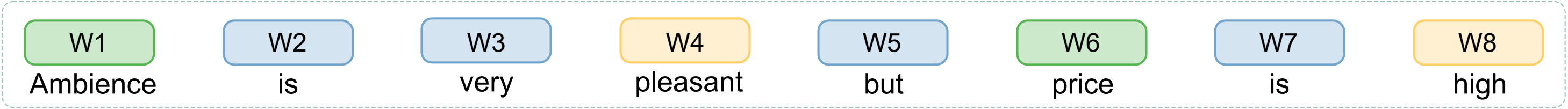
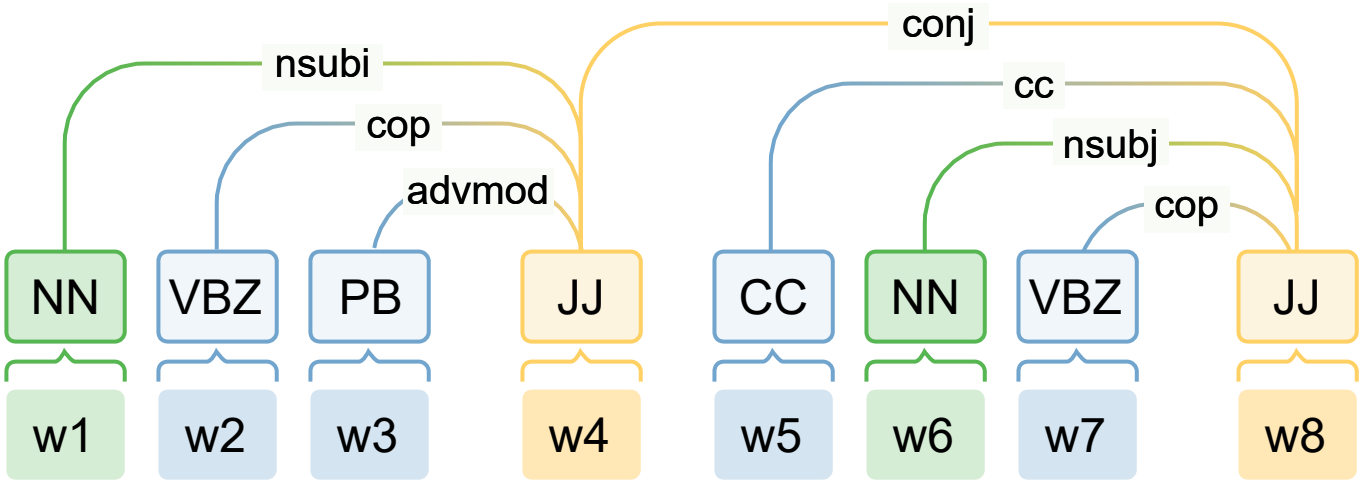


Raw Input: "Ambience is very pleasant but price is high"

① Word Tokenization and Indexing



② Dependency Parsing with Stanza



Bias Construction:

- Tree distances: BFS shortest paths
- Relation types: Encoded as integers
- Max distance:  $D_{max} = 20$  (truncated)

③ Matrix Construction Preview

	W1	W2	W3	W4	W5	W6	W7	W8
W1	0	2	2	1	2	3	3	2
W2	2	0	2	1	2	3	3	2
W3	2	2	0	1	2	3	3	2
W4	1	1	1	0	1	2	2	1
W5	3	3	3	2	0	2	2	1
W6	3	3	3	2	2	0	2	1
W7	3	3	3	2	2	2	0	1
W8	2	2	2	1	1	1	1	0

Tree-Bias Matrix ( $\text{bias}^{\text{tree}}$ )

Relation	Code	Example	
• nsubj	1	w4	w1
• cop	2	w4	w2
• advmod	3	w4	w3
• conj	4	w4	w8
• cc	5	w4	w5
• nsubj_rev	11	w1	w4
• none	0	no relation	
More ...			

Dependency-Bias Matrix ( $\text{bias}^{\text{dep}}$ )

④ Initial Node Feature Construction

