				D			
				N			
				V			
				P	P	D	
The	man	saw	the	dog	with	the	telescope
1	2	3	4	5	6	7	8

$$\mathcal{S}_5 = \mathcal{S} = \{D, N, V, P\}$$

$$\Pi(7, P, D) = \max_{w \in \mathcal{S}_5} \left(\Pi(6, w, P) \times q(D|w, P) \times e(\text{the}|D)\right)$$

If we think of any tag sequence that ends with tags P and D at position 7,
it must contain some tag at position 5.
We are basically searching for the tag that maximizes the probability at position 5.