Outline

- Semantics vs agreement
- SubCat
- Gap and Movement
- Semantic head driven generation
- (Beta reduction and quantifier)
Semantics vs agreement
SubCat
Gap and Movement
Semantic head driven generation
(Beta reduction and quantifier)
The Active Voice

The goalie kicked the ball.

```
S
 /\ 
NP    VP
   /\    /
  The goalie V NP
       kicked   the ball
           theme

sem:(kick, agent:goalie, theme:ball)
```
The Passive Voice

The ball was kicked.

The ball

was

kicked

sem: (kick, agent: ?, theme: ball)
The Passive Voice

The ball was kicked.

sem:(kick, agent:?, theme:ball)
Semantic Head Driven Generation: TLDR

TLDR: Replace `cat>` with `sem_head>` on all the semantic heads.

- An NP’s semantic head is the N.
- A VP’s semantic head is the V.
- A CLP semantic head is the CL.
- An S semantic head is the VP.
Semantic Head Driven Generation: Basic Idea

\[
\text{gen}(s, \text{sem}:(\text{kick, agent:goalie, theme:ball})).
\]

- Top-down or bottom-up generator: too slow to traverse all of the possible rules.
- However, we can utilize the fact that the semantics (\text{sem}) of the semantic head is exactly the same as the product (left hand side).