

Word Meaning: Adjectives and Adverbs

Read *Meaning and Grammar* 8.3.1-8.3.2

Adjectives

- (1) a. Pavarotti is a pink tadpole.
 b. Pavarotti is pink.
 c. Pavarotti is a tadpole.
- (2) a. Pavarotti is a large tadpole.
 b. Pavarotti is large.
 c. Pavarotti is a tadpole.
- (3) a. Pavarotti is a former tadpole.
 b. *Pavarotti is former.
 c. Pavarotti is a tadpole.
 d. Pavarotti was a tadpole.
- (4) a. $[[[\text{pink tadpole}]']]^{M,w,i,g} = [[\text{pink}']]^{M,w,i,g} \cap [[\text{tadpole}']]^{M,w,i,g}$
 b. $[[[\text{large tadpole}]']]^{M,w,i,g} \subseteq [[\text{tadpole}']]^{M,w,i,g}$

Intersective Adjectives

- (5) a. $VP \rightarrow \text{be Adj}$
 $\text{Adj} \rightarrow \text{pink, red, hungry, boring, drunk, dead, round, blond, ...}$
- b. Members of the syntactic category Adj are translated as constants of category Pred_1 of IPC.
- c. $[\text{be Adj}]' = \text{Adj}'$
- d. $N' \rightarrow \text{Adj } N'$
- e. $[_{N'} \text{Adj } N']' = \text{Adj}' \wedge N'' = \lambda x[\text{Adj}'(x) \wedge N''(x)]$

Non-Predicative Adjectives

- Op-Pred₁: functions from properties to properties.

(6) a. If O is in Op-Pred₁ and β is in Pred₁, $O(\hat{\beta})$ is in Pred₁.

b. If O is in Op-Pred₁ and β is in Pred₁, $[[O(\hat{\beta})]]^{M,w,i,g} = [[O]]^{M,w,i,g}([[^{\hat{\beta}}]]^{M,w,i,g})$, where $[[^{\hat{\beta}}]]^{M,w,i,g}$ is the property r that is the intension of β ; that is, for every $\langle w',i' \rangle$, $r(\langle w',i' \rangle) = [[\beta]]^{M,w',i',g}$.

c. $\square \forall x[\text{former}'(\hat{Q})(x) \leftrightarrow \mathbf{P}Q(x)]$

d. What is the meaning postulate for *alleged*?

e. $O(\hat{\beta})(x)$ does not entail $\beta(x)$.

f. "John is former" is well-formed but uninterpretable.

Subjective Adjectives

- Can occur in predicative position.
- Highly context dependent: "Lee built a large snowman".
- Context provides a set of comparative classes:
"A large tadpole is not a large animal"
- Add a contextual function Cl_A^n for each subjective adjective A .
- Cl_{large}^m gives us the set of objects that are large in context c relative to the m th class of objects whose size we are considering.
- *large* is associated with a class of predicates of IPC represented as $large_n$, where n is an arbitrary index.
- $large_1, large_2, large_3$, etc. are context-dependent predicates.

- (7) For any c , w , and i , $V(\text{large}_n)(c)(\langle w, i \rangle) = Cl_{\text{large}}^n(c)$.
- (8) For each occurrence of *large* in a particular utterance, the context specifies $\text{large}' = \text{large}_n$.
- (8) a. $[N' \text{ large tadpole}]'$
 b. $\text{large}_1 \wedge \text{tadpole}'$
 c. $\lambda x[\text{large}_1(x) \wedge \text{tadpole}'(x)]$
- (9) From *y is a large tadpole*, *y is a tadpole* follows, but not *y is large*, unless the same comparison class is considered.

Syntactic and Semantic rules for Adjectives

(10) a. $N' \rightarrow \text{Adj } N'$

a'. If $\Delta = [_{N'} \text{Adj } N']$, $\Delta' = \text{Adj}' \wedge N'$, if Adj' is in Pred_1
 $= \text{Adj}'(\hat{N}')$, if Adj' is in Op-Pred_1

b. $VP \rightarrow \text{be Adj}$

b'. If $\Delta = [_{VP} \text{be Adj}]$, $\Delta' = \text{Adj}'$

- Adjectives like *pink* are properties, adjectives like *large* are also properties, albeit highly context-dependent ones. Adjectives like *former* are functions from properties to properties.
- This explains why adjectives like *former* cannot occur in predicative position, because they don't attribute properties to individuals.

Adverbs

- Some adverbs are sentential operators: *necessarily, possibly, allegedly, formerly*.
 - Other adverbs are VP modifiers: adverbs like *quickly, noisily, passionately*; and also PPs like *with a knife, on the mouth, to the store*. (VP adjuncts). We will cover this class here.
 - Treatment will involve adding events into the basic building blocks from which we construct semantic values, added to truth-values, individual entities, possible worlds and times.
- (11)
- a. Kim kissed Lee passionately on the mouth.
 - b. Kim kissed Lee passionately and Kim kissed Lee on the mouth.
 - c. Kim kissed Lee passionately.
 - d. Kim kissed Lee on the mouth.
 - e. Kim kissed Lee.

- Similar to intersective adjectives:

- (12)
- a. A dirty pink pig is in the garden.
 - b. A dirty pig is in the garden and a pink pig is in the garden.
 - c. A dirty pig is in the garden.
 - d. A pink pig is in the garden.
 - e. A pig is in the garden.

- Dissimilar to non-predicative adjectives:

- (13)
- a. An alleged former spy is in the garden.
 - b. An alleged spy is in the garden and a former spy is in the garden.
 - c. An alleged spy is in the garden.
 - d. A former spy is in the garden.
 - e. A spy is in the garden.

- So we can't treat adverbs as predicate operators.
 - We must treat adverbs as predicates, but predicates of what?
 - Can't be predicates of individuals:
- (14)
- a. Kim kissed Lee on the mouth and Kim was passionate.
 - b. Kim kissed Lee on the mouth and Lee was passionate.
 - c. #Kim kissed Lee passionately and Kim was on the mouth.
 - d. #Kim kissed Lee passionately and Lee was on the mouth.
- The adverb applies to the kiss, i.e. to the event of kissing:
- (15) $\exists e \text{ kiss}'(\text{Kim}', \text{Lee}', e)$
- Add a hidden event argument to the logical form of the sentence.

- (16)
- a. $\exists e [\text{kiss}'(\text{Kim}', \text{Lee}', e) \wedge \text{passionate}(e) \wedge \text{on-the-mouth}(e)]$
 - b. $\exists e [\text{kiss}'(\text{Kim}', \text{Lee}', e) \wedge \text{passionate}(e)] \wedge$
 $\exists e [\text{kiss}'(\text{Kim}', \text{Lee}', e) \wedge \text{on-the-mouth}(e)]$
 - c. $\exists e [\text{kiss}'(\text{Kim}', \text{Lee}', e) \wedge \text{passionate}(e)]$
 - d. $\exists e [\text{kiss}'(\text{Kim}', \text{Lee}', e) \wedge \text{on-the-mouth}(e)]$
 - e. $\exists e [\text{kiss}'(\text{Kim}', \text{Lee}', e)]$

- We have added events to our ontology, our primitive stock of things. We also added property operators in treating non-predicative adjectives.
- Events have proved useful in semantics, so that people now talk about "event-based semantics".
- We will see that events are useful in talking about theta-roles (thematic relations) as well as adverbs.