



# Modelling Attitude, Polarity and Subjectivity in Wordnet

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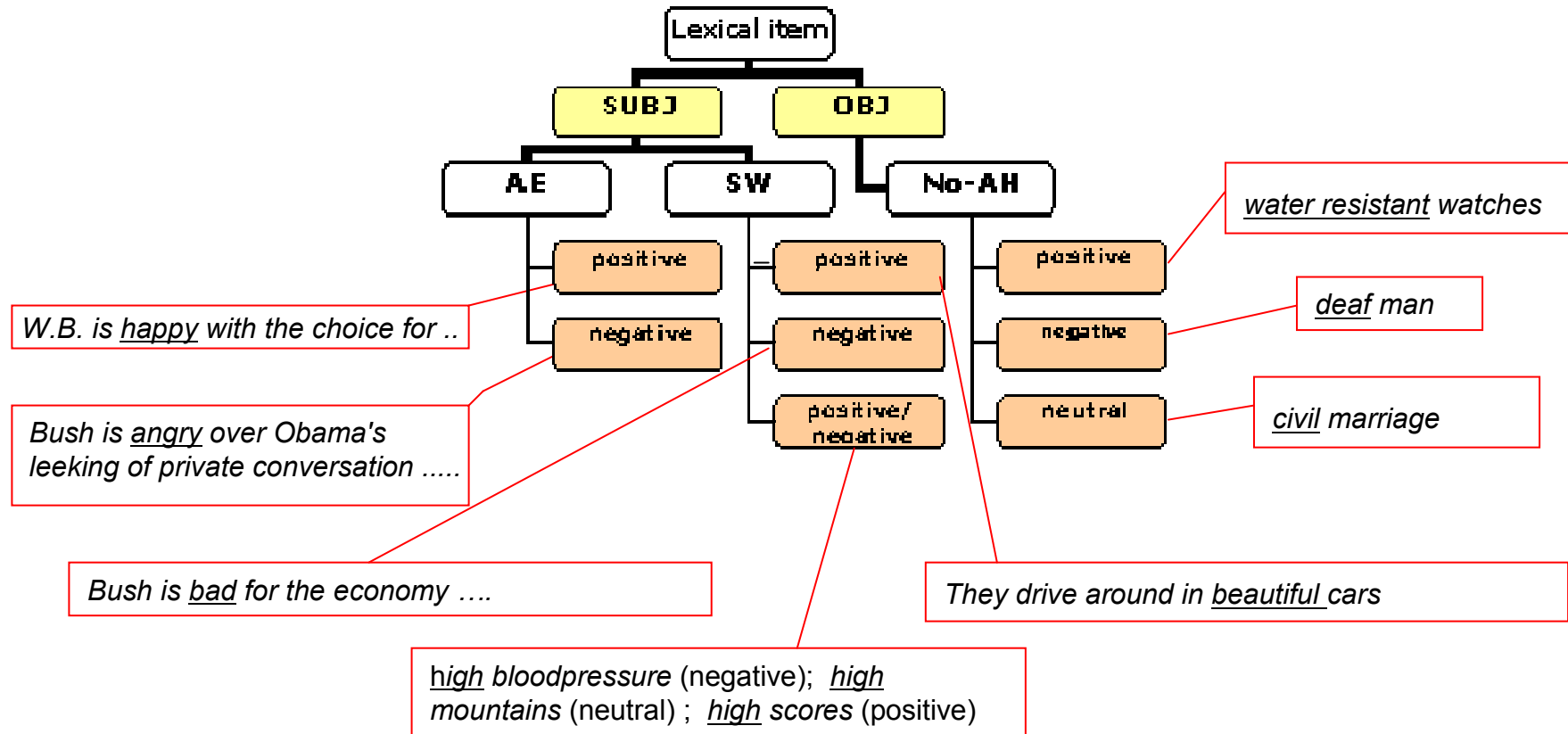
Project From Text To Political Position  
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# Outline

Are synsets proper carriers for polarity and attitude?

- Model with attitude, polarity and subjectivity
- Word – word sense – synset
- Hybrid solution

# Polarity and Subjectivity



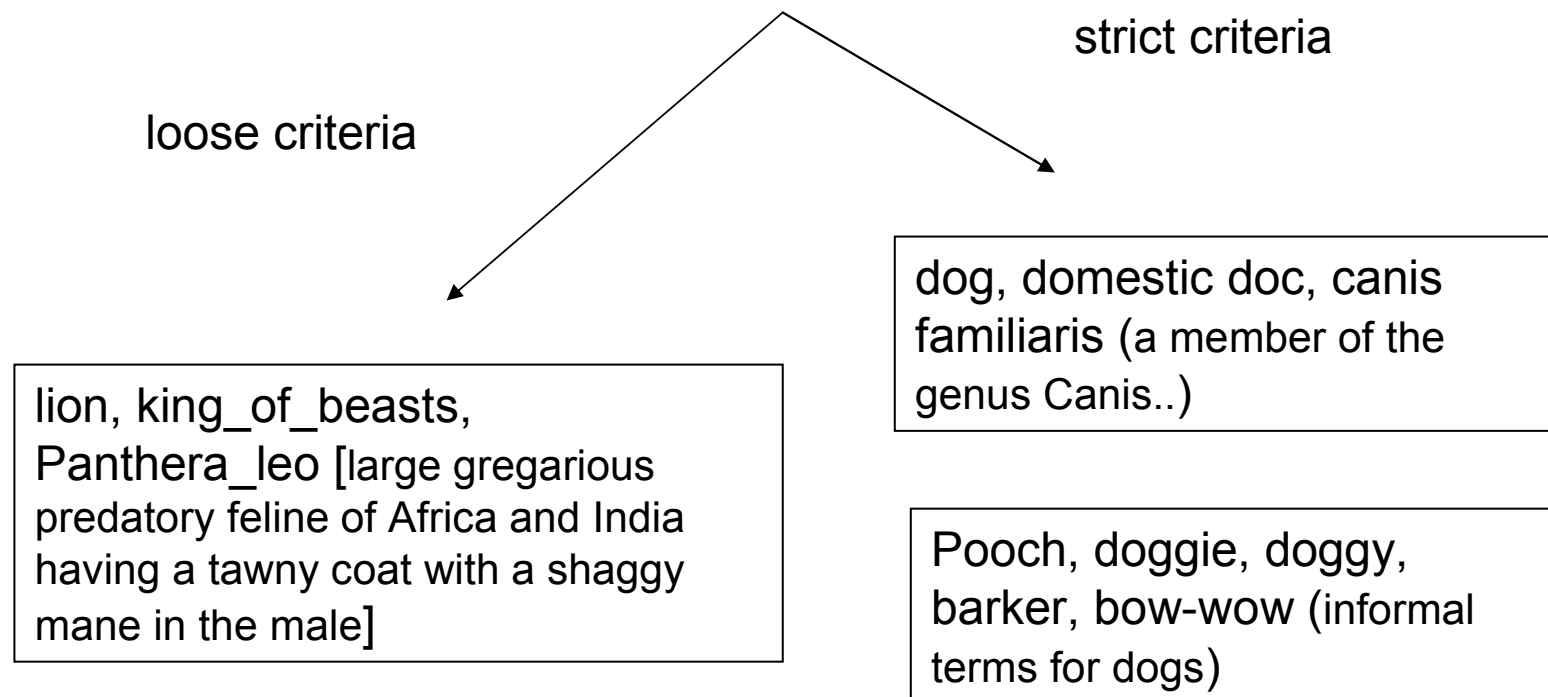
Subj=subjectivity Obj=objectivity  
 AE= Agent/Experiencer SW=Speaker/Writer No-AH=no attitude holder

# At which level

- Word Level
- Word Sense Level
- Synset Level

# Synset definition

Synsets consist of interchangeable words or synonyms (Miller, 1998)



# Differences among wordnets

## English Wordnet

### large number of synsets

asshole, bastard, cocksucker, dickhead, shit, mother fucker, motherfucker, prick, whoreson, son of a bitch, SOB

cad, bounder, blackguard, dog, hound, heel

gasbag, windbag

rotter, rat, skunk, stinker, bum, puke, crumb, lowlife, scum\_bag, so-and-so

pain, pain\_in\_the\_neck, nuisance

worm, louse, insect, dirt\_ball

## Dutch Wordnet

### 62 synonyms

naarling:1/r\_n-24518, beroerling:1/d\_n-26921, ellendeling:1/r\_n-12324, etterbak:1/d\_n-75936, etterbuil:2/d\_n-75940, fielt:1/d\_n-80137, fluim:2/d\_n-81948, gemenerik:1/r\_n-14607, hond:2/r\_n-79023, hondenlul:1/r\_n-17019, kankerlijer:1/d\_n-130709, kelerelijder:1/d\_n-540923, kelerelijer:1/d\_n-147148, klerelijer:1/r\_n-19790, kloot:1/r\_n-19887, kloothommel:1/d\_n-137246, klootspiraal:1/d\_n-412711, klootzak:1/r\_n-19888, kwal:2/r\_n-21077, lamgat:1/d\_n-152244, lammeling:1/r\_n-21272, lamstraat:1/d\_n-152396, lamzak:1/r\_n-21286, lazersteen:1/d\_n-413025, lazerstraal:1/d\_n-154087, loeder:1/r\_n-22410, lul:2/r\_n-22757, lulhannes:1/d\_n-161976, lulletje:1/d\_n-541138, miesgasser:1/d\_n-172163, mispunt:1/r\_n-24006, onverlaat:1/r\_n-26320, paardelul:1/d\_n-228940, paardenlul:1/n\_n-501022, patjakker:1/d\_n-212558, pleurislijder:1/r\_n-28842, ploert:1/r\_n-28881, plurk:1/d\_n-220067, etc. etc.

*insulting terms for people who are stupid, ridiculous, irritating, lazy, slow, .....*

# Splitting or Lumping

- Lumping

“one denotation and several connotations per synset”

lion, king\_of\_beasts, Panthera\_leo

- Splitting

“one denotation and one connotation per synset”

Kraut, Krauthead, Jerry, Hun

hyponym

German

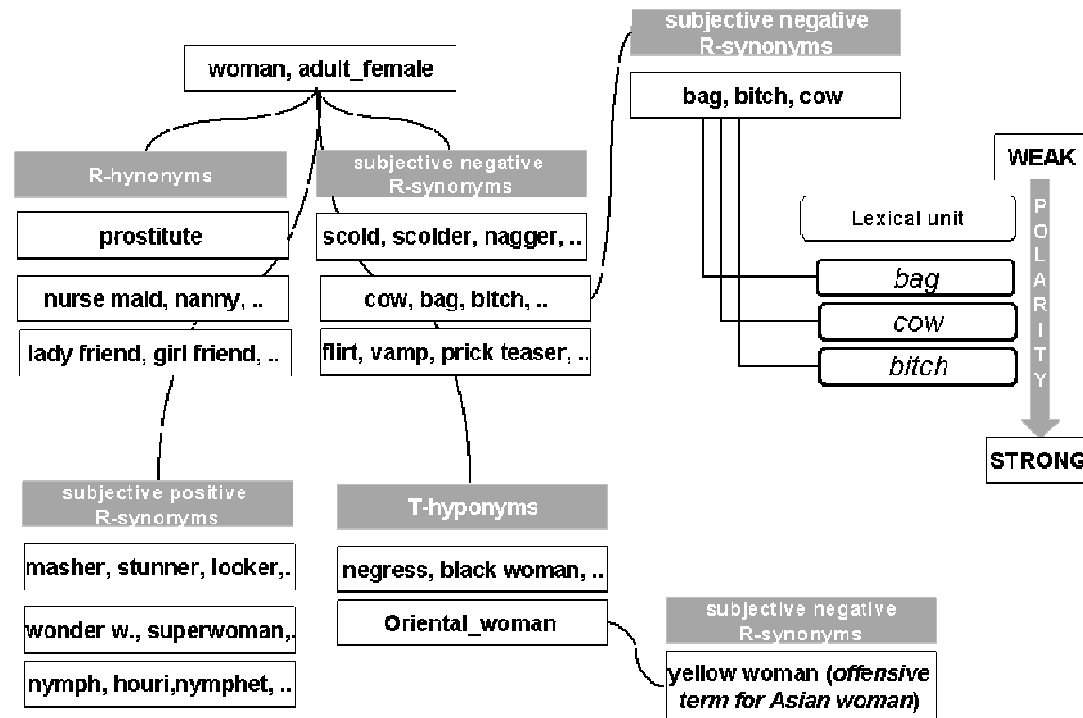
# Splitting

- On which criteria? Usage (register, domain, frequency, style, etc.); Attitude (polarity, subjectivity); Morphology, Syntax, etc.
- Consequent splitting leads to synsets without synonyms
- Leads to ISA-overloading (*german* is not a hypernym of *krauthead*)

# Lumping

- Consequent lumping leads to extremely large synsets
- Low interchangeability of synonyms as their connotations differ too much
- Low interoperability between wordnets: precise translation equivalence is impossible
- Leads to 'unintuitive' synsets

# Hybrid and 2-layered

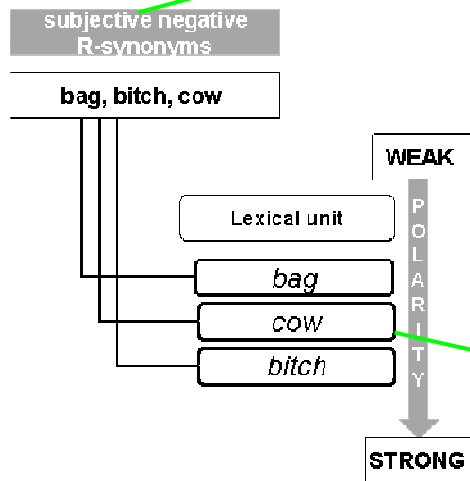


R = role T = type

# Characteristics

- Hybrid (*application of loose and strict criteria*)
  - Synsets are basic connotations groups with positive , negative or neutral affective value
  - Distinctions between Types and Roles => connotational meanings are role-synonyms of neutral meanings
- Two layered (*synset and lexical unit*)
  - Ranking value for fine-grained polarity for each synonym

# LMF



```
<Synset id="eng-00-000-n" baseConcept="0"> <!-- cow , bag, bitch-->
  <Definition gloss="an unpleasant woman">
    </Definition>
  <OntologicalMetaProperties rigidValue="0">
    </OntologicalMetaProperties>
  <Subjectivity polarityValue="positive" subjectivityValue="subjective">
    </Subjectivity>
  <SynsetRelations/>
</Synset>
```

```
<LexicalEntry id="000">
  <Lemma writtenForm="cow" partOfSpeech="n"/>
  <Sense id="cow_3" synset="eng-00-000-n">
    <Definition resume="a woman who is disliked">
      </Definition>
    <Usage style = "informal" />
    <Polarity ranking = "2"/>
    <MonolingualExternalRefs/>
  </Sense>
</LexicalEntry>
```

# Conclusions

- Synset structures for coarse-grained affective value
- Lexical unit structures for fine-grained affective value
- Clear criteria for synset membership => more homogeneous synsets
- Better equivalence relations between wordnets
- Prevent ISA-overloading
- Synsets remain 'intuitive'