Lexical Semantics
Week 6: Adjectives, properties, and scales

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November 12, 2019

1 Property concepts

1.1 Major semantic classes of property concepts

Adjectives (typically) denote **properties**, specifying or elaborating on some feature or property of the nouns they modify. The major classes of property concepts thus correspond to the major semantic classes of adjectives.
Dixon's (1982) classes:

(1) a. DIMENSION: big, large, little, small, long, short, tall, high, low, wide, narrow, thick, fat, thin, deep, shallow (and a few more)

b. PHYSICAL PROPERTY: hard, soft, rough, smooth, hot, cold, warm, cool, sweet, sour, tart, quiet, loud (and many more)

- includes SHAPE: hexagonal, oval, round, square, straight, triangular (and more)

c. COLOUR: black, white, red, green, yellow, blue, orange, purple, ...

d. HUMAN PROPENSITY: angry, jealous, happy, kind, clever, generous, brave, cruel, rude, proud, wicked, mad, fierce, impetuous, glad, sad, wise, curious (many more)

e. AGE: new, young, old, ancient (a few more)

f. VALUE: good, bad, proper, perfect, pure, excellent, exquisite, fine, fantastic, wonderful, horrible, terrible, atrocious, poor, awful, beautiful, lovely, ugly, delicious, tasty (and more)

g. SPEED: fast, quick, rapid, slow (a few more)

- Dixon's classes are motivated by the study of languages with limited adjectival inventories (Igbo, Hausa, Bantu languages)
- he notes that the semantic content of adjectives is relatively consistent across languages that have them
- certain oppositions and semantic types occur cross-linguistically (*large/small, long/short, old/new, black/white, good/bad*)

Two more categories are often included in the major classes:

(1) h. ETHNIC/NATIONALITY: American, Canadian, Chinese, Japanese, Argentinian, French, Irish, Polish, Siberian, Christian, Jewish, Islamic, Buddhist, Asian, European, African, Californian, Bavarian, San Franciscan, Brooklynite, Long Islander ...

i. MATERIAL: earthen, silken, wooden (and more)

- most of the major property concepts describe things that are (in principle) objectively recoverable:
  - DIMENSIONAL properties can be measured physically
  - PHYSICAL PROPERTIES and MATERIAL properties can be determined by investigation and observation
- VALUE is an exception: properties like *beautiful* or *terrible* are 'in the eye of the beholder' (in this case the speaker), and are **evaluative**
  - the basic contrast involves *good/bad* (cf. Dixon), but adjectives can be specialized: *beautiful/ugly* both relate to physical appearance, *delicious, tasty, scrumptious* relate to food
- within PROPENSITY, some have argued for a further division into **individual-level** and **stage-level** properties (Carlson 1977, Kratzer 1995, others)
  - individual-level properties – *clever, funny, brave* – are typically perceived as indefinite/lasting, more likely to be used to characterize an individual (as a particular type of person; Wierzbicka 1988)
  - stage-level properties – *angry, happy, tired* – are temporary
  - the distinction is not always clear

1.2 Semantic support for Dixon's taxonomy

Distinguishing classes of property concepts allows us to make certain linguistic generalizations. In addition to the cross-linguistic regularities, classifying adjectives into a set of concepts allows us to explain distributional facts:

- in English (and in other languages), speakers have strong preferences on the order in which adjectives appear

(2) a. ✗ The blue small towel
b. ✓ The small blue towel

- when two adjectives can appear in either order, they often belong to the same class of property concept:

(3) a. The wise brave donkey
b. The brave wise donkey

- the preferred adjective order can be predicted on the basis of a property concept hierarchy:

  (4) Value > Dimension > Physical Property > Speed > Human Propensity > Age > Colour > Ethnic/Nationality > Material

- Data:

  (5) a. wide smooth fast new road
  b. *new wide smooth fast road
  c. beautiful blue wooden donkey
  d. *blue beautiful wooden donkey
  e. *beautiful wooden blue donkey
  f. lovely thick soft purple woolen shawl
  g. large new red English plastic chairs
  h. enormous quick fierce young lion

  . . . and so on.

1.3 Cross-linguistic variation and generalizations

Languages differ in whether they express property concepts as verbs, nouns, or adjectives:

- in languages like Igbo and Hausa, the adjectival class is **closed** (i.e., new words can't be coined and added to it)
  - such languages have very similar basic inventories: *large/small, new/old, good/bad, black/white*
- languages belong to one of two broad types: either property concepts are concentrated in a single lexical class (adjectives, or verb if no adjectives; Type I), or they are spread across nouns and verbs (with potentially some adjectives; Type II)
  - NB: Both Dixon's **strongly adjectival** and **strongly verbal** are Type I
- in Type II languages, certain categories tend to show up in particular word classes:

	Type I	Type II
Age, Value, Dimension	Adj, V	Adj
Physical Prop	Adj, V	Verb
Human Propensity (stage-level)	Adj, V	N
Human Propensity (indiv-level)	Adj, V	N
Colour	Adj, V	N
Speed	Adj, V	Adv

2 The interpretation of adjectives

The interpretation of adjectives (in English and languages with adjectives) is tied to the interpretation of the nouns they modify:

- **intersective** adjectives pick out the intersection of things in the denotation of the property concept and things in the denotation of the noun

  (6) a. Samson is a hairy dog.
  b. $\vdash$ Samson is hairy.
  c. $\vdash$ Samson is a dog.

- **subsective** adjectives pick out a subset of the noun's denotation, but don't necessarily pick out a uniform class of objects/entities on their own

  (7) a. Yuja Wang is a skilful pianist.
  b. $\nvdash$ Yuja Wang is skilful. [depends on what she is doing]
  c. $\vdash$ Yuja Wang is a pianist.

- Partee (1995): **non-subsective** adjectives don't necessarily pick out things in the noun's denotation, but pick out things with a particular relationship to what is in the noun's denotation:

  (8) a. Karl builds model trains
  b. $\nvdash$ Karl builds trains.

  (9) a. Rudy Giuliani is the former mayor of New York.
  b. $\nvdash$ Giuliani is the mayor of New York.

  – **privative** adjectives actually entail that the noun does not hold:

  (10) a. Jessica bought a fake Monet.
  b. $\nvdash$ Jessica bought a Monet.
  c. $\vdash$ Jessica bought something that is not a Monet.

2.1 Multiple senses and qualia structure

As we saw in the first assignment, certain kinds of adjectives seem to vary in meaning depending on the nouns they modify:

(11) a. a long dress $\rightarrow$ a dress that has a large top-bottom measurement in feet, meters, etc
b. a long snake $\rightarrow$ a snake with a large head-tail measurement

(12) a. a long lecture $\rightarrow$ a lecture that that has a large measurement in terms of time
b. a long book $\rightarrow$ a book that takes a significant amount of time to read

- we could analyze *long* as polysemous, since the temporal and spatial meanings do not co-occur (exception: *a long walk, a long run*)

- or we can take adjectives like *long* to have a single, underspecified sense, which is constrained, via **selective binding** to interact with certain features of a complex lexical representation for the noun
- in his **Generative Lexicon** approach, Pustejovsky (1993) proposes a complex representation for nouns in terms of **qualia structure**, on which the objects denoted by a noun have four essential kind of attributes

Qualia structure (notes based on Murphy, Ch, 4)

- qualia structure specifies four kinds of information/attributes
  1. **Constitutive role.** The relationship between an object and its constituents or components (material, weight, etc)
  2. **Formal role.** What distinguishes an object from other similar objects (objects in the denotation of a superordinate); dimension, shape, colour
  3. **Telic role.** The use, purpose, function of an object
  4. **Agentive role.** Factors involved in the origin (creation, bringing about) of an object

(13) **novel**
CONSTITUTIVE: narrative
FORMAL: tome, disk
TELIC: reading
AGENTIVE: writing

(14) Phil just finished a novel.
  a. modifying TELIC: Phil just finished reading a novel.
  b. modifying AGENTIVE: Phil just finished writing a novel.

- so, *long* can pick out either a spatial dimension (formal role) or its temporal dimension (either telic or agentive, depending on context)

3 Scales and gradability

Dixon points out that adjectives can take part in two different kinds of antonymy:

- **Contradictories** are mutually exclusive: if one member of the antonym pair is true, then the other is false

(15) *true/false*, *dead/alive*, *perfect/imperfect*

(16) *This cat is dead and alive.

(17) *This cat is neither dead nor alive.

- **Contraries** are 'polar opposites': they describe opposite ends of a scale or even a continuum.

(18) *tall/short, old/young, full/empty*

- at most one of a pair can be true of an object, but it's also possible for neither to be true

  (19) *The hallway is wide and narrow.

  (20) The hallway is neither wide nor narrow.

3.1 Scalarity and adjective types

At least one of a pair of contradictories is an **absolute adjective**:

- absolute adjectives name properties that objects either have or lack; there is a sharp dividing line
- *dead, alive, odd/even, perfect, headless*
- Absolute adjectives are not acceptable with degree modifiers, intensifiers, and don't work in comparatives:

  (21) a. #13 is an extremely odd number.
  b. #13 is odder than 14.
  c. #13 is the oddest number.

- two types of absolute adjective
  - **scalar absolute adjectives** are associated with scales of measurement (of the degree/intensity of some property)
  - good with totality modifiers and approximations:

    (22) a. This diamond is totally perfect
    b. This diamond is very nearly perfect.

    (23) a. Schrödinger's cat is 100% alive.
    b. The cat was almost dead.

  - **non-scalar absolute adjectives:** odd/even
  - one pole of a scalar absolute pair indicates a bounded part of the scale of measurement; non-scalar attributes are not associated with any kind of measure.

Gradable adjectives invoke properties that can be had/measured at different strengths:

- they can be intensified

  (24) Yao Ming is very/extremely/rather tall.

- appear in comparative constructions:

  (25) a. Bernie is older than Elizabeth

b. Juri is as tall as Ludo.
c. Juno is the smartest dog.

- but don't always accept totality modifiers:

(26) a. #Yao Ming is completely tall.
b. #Juno is 100% smart.

The positive form of a gradable adjective is necessarily **vague**, in that it must make reference to some contextually-determined (contextually narrowed) **standard of comparison:**

(27) a. Jessica is tall
b. Jessica is a basketball player.
$\not\rightarrow$
c. Jessica is a tall basketball player.

- Jessica might be tall, but she is not necessarily tall compared to other basketball players

- e.g., *expensive* corresponds to the property of having a degree of cost that is at least as great as some standard of comparison, which is determined by the type of thing we are talking about – an expensive mattress has a much higher standard of comparison than an expensive cup of coffee

- in comparative uses, the positive form need not hold: we are simply comparing the age/height/cost of two things to see which one is greater or smaller

(28) Juno is older than Samson, but Juno is not old.

- implicitly, all uses of gradable adjectives are comparative: positive uses simply involve comparing the measured property of an individual/object to the contextually-determined standard value

Different types of scales:

- scales for gradable adjectives can be open or closed, on one or both ends:

(29) **Closed scales.** *empty/full, open/closed, visible/invisible*
Both poles can combine with totality modifiers
a. The glass was completely full.
b. The window was totally closed.
c. The magician was 100% invisible.

(30) **Lower closed scales.** *quiet/loud, unknown/famous*
a. The room was perfectly quiet.
b. #The room was completely loud.

(31) **Upper closed scales.** *perfect/imperfect, certain/uncertain*
   a. I am completely certain that this is the right answer.
   b. #I am perfectly uncertain that this is the right answer.

(32) **Open scales.** *short/tall, shallow/deep, uneager/eager*
   a. #Giraffes are absolutely tall.
   b. #Corgis are perfectly short.

Markedness:

- most gradable antonym pairs are asymmetric
  - one member can refer to the entire scale, despite being associated with one end of the scale
  - this is the **unmarked** form, the more restricted antonym is **marked**

(33) Questions:
   a. How tall is the Rheinturm?
   → What is the height of the Rheinturm?
   (we do not presuppose that the building is tall by some comparative standard for buildings)
   b. How short is the Rheinturm?
   → What is the height of the Rheinturm?
   presupposes: the Rheinturm is short by some comparative standard

(34) Measure phrases:
   a. Bertha is eighty years old.
   b. #Bertha is ten years young.

- typically, the positive pole is unmarked member, and has a 'larger' value

4 References

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