

Vagueness and context dependence

Chris Potts, Ling 130a/230a: Introduction to semantics and pragmatics, Winter 2022

March 1

1 Ithkuil

From ‘Utopian for beginners’ by Joshua Foer:¹

Languages are something of a mess. They evolve over centuries through an unplanned, democratic process that leaves them teeming with irregularities, quirks, and words like “knight.”

[...]

In his preface, Quijada wrote that his “greater goal” was “to attempt the creation of what human beings, left to their own devices, would never create naturally, but rather only by conscious intellectual effort: an idealized language whose aim is the highest possible degree of logic, efficiency, detail, and accuracy in cognitive expression via spoken human language, while minimizing the ambiguity, vagueness, illogic, redundancy, polysemy (multiple meanings) and overall arbitrariness that is seemingly ubiquitous in natural human language.”

[People love the idea; he gains a huge following]

If you imagine all the possible notions, ideas, beliefs, and statements that a human mind could ever express, Ithkuil provides a precise set of coordinates for pinpointing any of those thoughts. The final version of Ithkuil, which Quijada published in 2011, has twenty-two grammatical categories for verbs, compared with the six – tense, aspect, person, number, mood, and voice – that exist in English. Eighteen hundred distinct suffixes further refine a speaker’s intent. Through a process of laborious conjugation that would befuddle even the most competent Latin grammarian, Ithkuil requires a speaker to home in on the exact idea he means to express, and attempts to remove any possibility for vagueness.

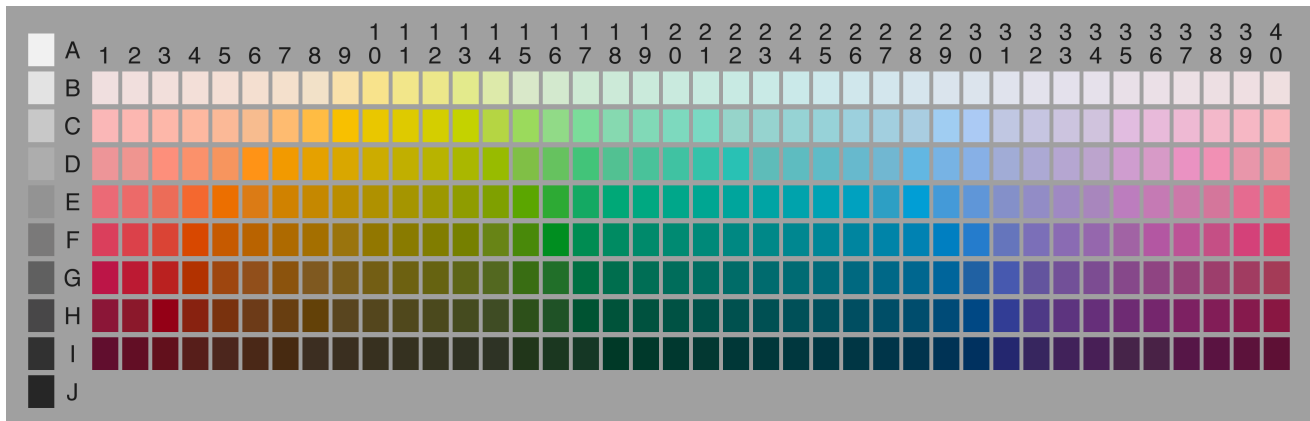
Human interactions are governed by a set of implicit codes that can sometimes seem frustratingly opaque, and whose misreading can quickly put you on the outside looking in. Irony, metaphor, ambiguity: these are the ingenious instruments that allow us to mean more than we say. But in Ithkuil ambiguity is quashed in the interest of making all that is implicit explicit. An ironic statement is tagged with the verbal affix ’kçç. Hyperbolic statements are inflected by the letter ’m.

Partee (1995:336):

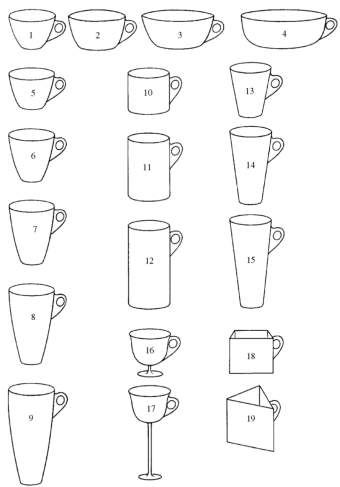
it is also worth noting that as one studies how vagueness works in more detail, one quickly overcomes the common prejudice that vagueness is always a bad thing, that it is some kind of “defect” of natural language.

¹http://www.newyorker.com/reporting/2012/12/24/121224fa_fact_foer?currentPage=all

2 Vagueness as a response to a complex world



World color survey: <https://www1.icsi.berkeley.edu/wcs/>



(Labov 1973)

| JUST TO CLEAR THINGS UP: | |
|--------------------------|---------------------------|
| A FEW | ANYWHERE FROM 2 TO 5 |
| A HANDFUL | ANYWHERE FROM 2 TO 5 |
| SEVERAL | ANYWHERE FROM 2 TO 5 |
| A COUPLE | 2 (BUT SOMETIMES UP TO 5) |

<https://xkcd.com/1070/>

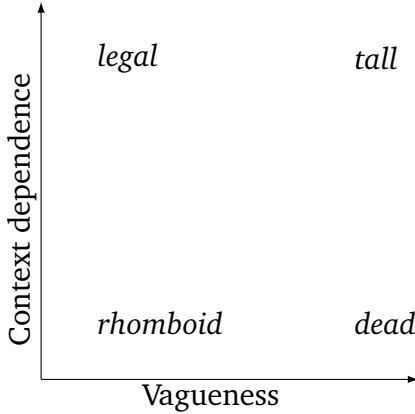
Is vagueness epistemic (a reflection of our partial knowledge of what are actually crisp concepts) or metaphysical? It's very difficult to tease these apart.

3 Context dependence

- (1)
 - a. George the tortoise is fast.
 - b. Usain Bolt is fast.
- (2)
 - a. My 2-year-old son built a really tall snowman yesterday. (Partee 1995:331)
 - b. The D.U. fraternity brothers built a really tall snowman last weekend.

The *comparison class* is the set of things used to make judgments like these. The standards will be set relative to the comparison class. The comparison class is often partly indicated linguistically but generally needs to be inferred from context. Consider the different senses of *expensive BMW* as 'expensive for a BMW' and 'expensive for a car' (Kennedy 2007).

- (3) a. $\llbracket \text{few} \rrbracket = \lambda X \left(\lambda Y \left(\top \text{ if } |X \cap Y| < j, \text{ else } \text{F} \right) \right)$
 b. $\llbracket \text{many} \rrbracket = \lambda X \left(\lambda Y \left(\top \text{ if } |X \cap Y| > k, \text{ else } \text{F} \right) \right)$
 c. $\llbracket \text{approximately } 10 \rrbracket = \lambda X \left(\lambda Y \left(\top \text{ if } |X \cap Y| \approx 10, \text{ else } \text{F} \right) \right)$
 d. $\llbracket \text{almost no} \rrbracket = \lambda X \left(\lambda Y \left(\top \text{ if } |X \cap Y| \approx 0, \text{ else } \text{F} \right) \right)$



“Even the line between vague and nonvague predicates is vague; a concept may count as sharp for most purposes but vague relative to the demands of scientific or legal or philosophical argument. Probably almost every predicate is both vague and context-dependent to some degree.” (Partee 1995:332)

4 Vagueness vs. generality

Vagueness, in our technical sense, is not merely speaking in general terms. For example, *some numbers are prime* is not vague; rather, it is merely a very general claim. By contrast, *George is fast for a tortoise of his species* is a pretty specific claim, but one that is very vague.

There is, of course, a usage of *vague* outside of linguistics that means something like ‘speaking in very general terms’, but we won’t use *vague* in this way in our discussions.

5 Vagueness vs. prototypicality

A *prototype* is a canonical instance of a class, in some sense. Prototypes are sometimes called *exemplars* of their classes. For example, a bluebird may be considered a prototypical bird, at least in North America. By contrast, a penguin is not a prototypical bird. However, a penguin is still unambiguously a bird, and thus it is not a vague instance. Compare this with, for example, the cups/mugs on the previous page. Item 10 seems like a prototypical mug, whereas Item 17 is a vague case – there is likely doubt about whether it is a mug at all.

6 Vagueness vs. ambiguity

Ambiguities are discrete choices between options. For example, *crane* is ambiguous between a ‘bird’ sense and a ‘machine’ sense. There is not really a gray area between these two senses. They are just different senses.

Similarly, *tall* is ambiguous between an adjective that means ‘demanding’ (*tall order*) and an adjective that describes height. Both senses are vague and take on different vague standards depending on context, but there isn’t gray area between the two distinct senses.

Lakoff (1970) uses ellipsis to help distinguish the two:

- (4) Chris saw a crane, and Kathryn did too.
 - a. *Possible*: Chris saw a bird and Kathryn saw a bird
 - b. *Possible*: Chris saw a machine and Kathryn saw a machine
 - c. *Impossible*: Chris saw a bird and Kathryn saw a machine
 - d. *Impossible*: Chris saw a machine and Kathryn saw a bird
- (5) Usain Bolt is fast, and George the tortoise is too.
Possible: Both are fast relative to their very different comparison classes

Where it is hard to tell what to make of these examples, it is often because it’s hard to tell whether we are dealing with ambiguity or vagueness:

- (6) a. The beer was flat, and Chris’s singing was too.
- b. “You held your breath, and the door for me.” (Alanis Morissette, ‘Head over feet’)

7 Vagueness and the Sorites Paradox

The gray area for vague predicates can be exploited to construct paradoxical arguments:

- (7) a. 12:01 is noonish.
- b. For any time t , if t is noonish, then t plus 1 minute is noonish.
- c. Therefore, 11:59 pm is noonish.
- (8) a. A \$5 cup of coffee is expensive (for a cup of coffee).
- b. Any cup of coffee that costs 1 cent less than an expensive cup of coffee is expensive (for a cup of coffee).
- c. Therefore, any free cup of coffee is expensive. (Kennedy 2007)
- (9) “one hair on his head counts as bald”, “10,000 grains of sand is a heap”, ...

Lassiter (2011): People will assign probabilities to the Sorites statements in ways that reflect increased uncertainty that eventually turns into certainty that the statements are false.

8 Syrett et al. (2009)

8.1 Background and requirements

Syrett et al. (2009) provide experimental evidence for the theory of gradable adjectives developed by Kennedy & McNally (2005) and Kennedy (2007). The paper reports on a number of experiments with both children and adults. The whole paper is worth reading, but we are going to focus just on experiment 1 (section 2, the only required section). This is partly because we are short on time and partly because the paper employs symbols and terminology that we haven't seen yet. The goal of this handout is to fill in some background details and try to articulate why the researchers undertook this set of experiments.

8.2 Scale structure: the central hypothesis

Scale structure (Kennedy & McNally 2005)

| | | |
|----------------|--------|-----------------------|
| totally open | ○————○ | <i>tall, short</i> |
| lower closed | ●————○ | <i>wet, bent</i> |
| upper closed | ○————● | <i>pure, straight</i> |
| totally closed | ●————● | <i>opaque, open</i> |

Guiding idea Adjectives associate with particular scales, which help determine their meanings. For example, *tall* and *short* associate with the scale of heights, and the open nature of this scale helps to determine what those adjectives mean.

Totally open scales and contextual standards For adjectives with totally open scales, we need to set a contextual standard in order to figure out which things the adjective is true or false of. This is a pragmatic challenge because the standard can be set in very different places, depending on the context – someone says *Kim is tall*, and you need to know what the standard for tallness is to figure out what they are actually claiming about Kim.

Partially or totally closed scales and their endpoints For partially or totally closed scales, we don't need to set this kind of contextual standard, because we use the endpoint(s). For example, if something has some water on it (meets the minimal standard for wetness), then it's wet.

Partially or totally closed scales are less susceptible to the Sorites Paradox For example, in this example from Kennedy (2007), we simply reject the second premise and so the paradoxical conclusion is not reached:

- (10) a. A theater in which every seat is occupied is full.
b. Any theater with one fewer occupied seat than a full theater is full.
c. Therefore, any theater in which none of the seats are occupied is full.

Lingering vagueness might still raise Sorites concerns, though. For example, a full glass of water might still be full with one drop removed, and then we are off and running again!

Scale structure throughout One might be tempted to treat the closed-scale items as simple properties like *married* or *atomic*. However, even they have true scale structure: (i) they can be modified by *very*, and (ii) they can appear in comparatives (Kennedy & McNally 2005:§1; Kennedy 2007:§3.1) – phrases like *A is wetter than B* show that the properties are still gradable, because one thing can have more or less of the relevant property than another. (Here, we should get a contrast with adjectives like *atomic*, though they can be coaxed into gradability, so the issue is complex.)

8.3 Modification and scale structure

Adverbs for distinguishing scales (Kennedy & McNally 2005:§3; Kennedy 2007:§4.2)

- Maximality: *completely, fully, totally, absolutely, 100%, perfectly, ...*
- Proportion: *half, mostly, most of the way, two-thirds, three-sevenths, ...*
- Minimality: *slightly, somewhat, partially, ...*

Acquisition angle on the adverbs Syrett & Lidz (2010): 30-month-olds “appear to be aware of such distributional differences and recruit them in word learning” (p. 258).

| Adverb | Totally open | Totally closed | Upper closed | Lower closed |
|------------|--------------|----------------|--------------|--------------|
| Maximality | * | ✓ | ✓ | * |
| Proportion | * | ✓ | * | * |
| Minimality | * | ✓ | * | ✓ |

Table 1: Summary of adverb patterns. A * means ungrammatical or at least very unusual, and a ✓ means grammatical/normal. The * combinations are ruled out semantically. For example, proportion adverbs require upper and lower ends, so no adjective could allow them but disallow maximality or minimality adjectives. Similarly, no adjective could allow maximality and minimality adverbs without also allowing proportion adverbs.

Understanding the judgments

- Linguists usually describe their predictions like this: *completely tall* and *two-thirds tall* will just be ungrammatical – no one will use them intentionally – because the meaning of *tall* doesn’t have the right kind of scale structure.
- I prefer a different perspective: if a speaker said *completely tall* or *two-thirds tall*, they would be assuming – and be construed as assuming – that *tall* had the right kind of scale structure in the current context.
- These two views are different. The first predicts we’ll never encounter these phrases, and that we’ll call them meaningless if presented with them in the lab. The second is silent on whether they will occur, and predicts something about their interpretation.

8.4 Understanding the experiment

As before, I've formulated some questions aimed at helping to get you focused on what's important for our discussion. You should keep studying section 2 of Syrett et al. 2009 until you can answer all of them.

- (11) Make sure that you understand the experimental design well enough to actually try out the crucial conditions on a friend.
- (12) What assumptions do Syrett et al. make about the felicity conditions of the definite determiner?
- (13) What role do the control examples in Table 1 play in the experiment?
- (14) On the theory summarized in section 8.2 above, what is the expected pattern of behavior (for children and adults) for the following prompts in a situation in which there are two medium-sized, spotted cups, both with some liquid in them but neither full, where one is noticeably larger than the other?
 - a. Hand me the cup.
 - b. Hand me the tall cup.
 - c. Hand me the full cup.
 - d. Hand me the spotted cup.
- (15) How well do the results of our in-class experiment align with those of Syrett et al. for (i) totally-open adjectives, (ii) lower-closed adjectives, and (iii) upper-closed adjectives?

8.5 Our in-class version of the experiment

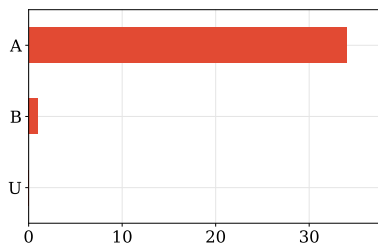
Our Feb 24 in-class experiment on adjectives and scale structures was inspired by that of Syrett et al. (2009), but much different in its execution. The results this year are not very consistent with their theory, in contrast to previous years when I have run this, which showed similar patterns to those reported in the paper. $N = 35$.

8.5.1 Fillers

1

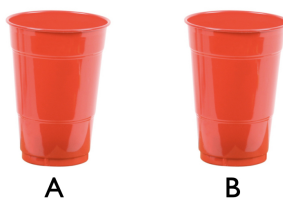


Hand me the red one.

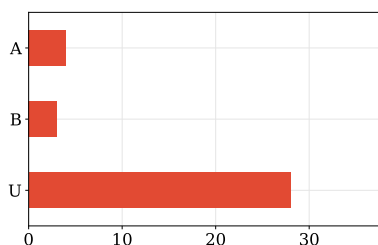


Training item.

7



Hand me the red one.



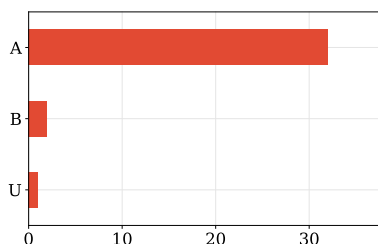
Filler. Checks that the definite really does presuppose uniqueness. The 8 A/B responses could indicate that the experimental setting makes uniqueness less relevant.

8.5.2 Open-scale adjectives

2



Hand me the big one.

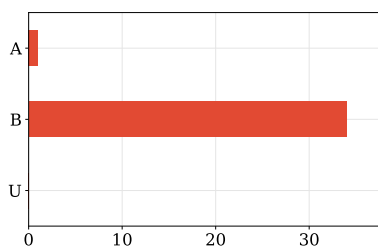


Expected result for open-scale adjective.

4



Hand me the big one.



Expected result for open-scale adjective. Striking that there seems to be no interference from the standard for 'bigness' relevant for item 2.

8.5.3 Minimal-standard (lower-closed) adjectives

3

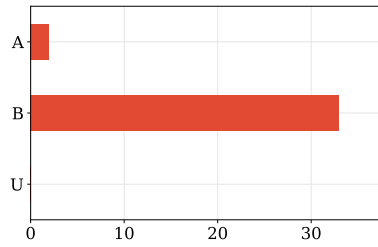


A



B

Hand me the striped one.



Clearly felicitous minimal standard adjective, for comparison with item 5.

5

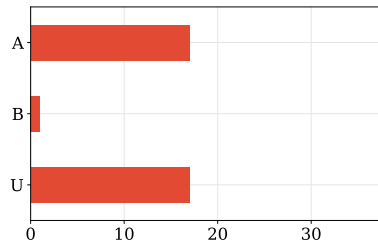


A



B

Hand me the striped one.



Not well-aligned with the expected result. Many people probably interpreted *striped* as 'more striped'.

5

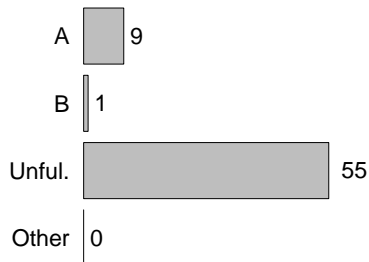


A



B

Hand me the striped one.



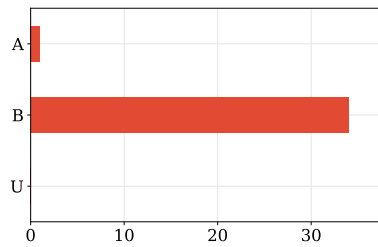
2019: The expected result for minimal standard adjective: both cups striped means that *the striped one* is undefined. Maybe not as strong as expected. Similar to most previous years.

8.5.4 Maximal-standard (upper-closed) adjectives

6



A B
Hand me the straight one.

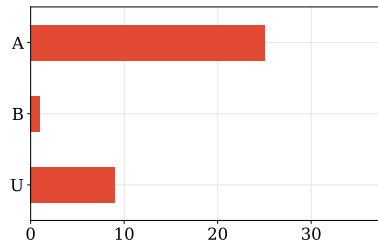


Clearly felicitous maximal standard adjective, for comparison with item 8.

8



A B
Hand me the straight one.

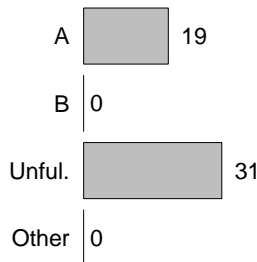


Unexpected result. Many seemed to interpret *straight* as *more straight*. See also the 2015 display and results below.

13



A B
Hand me the straight one.

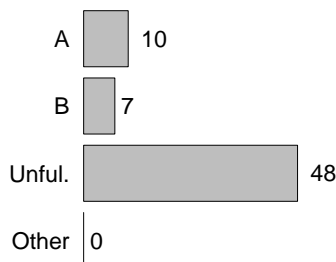


2020: Not a very clear result for the maximal standard adjective. Compare with 2019, where the bars are both more clearly bent, and with 2015, where one is almost straight.

13



A B
Hand me the straight one.

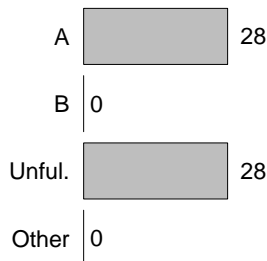


2019: Clear result for the maximal standard adjective, but this is partly the result of the items being close to each other. Similar to 2018. Compare with 2015's results, just below.

13



A B
Hand me the straight one.



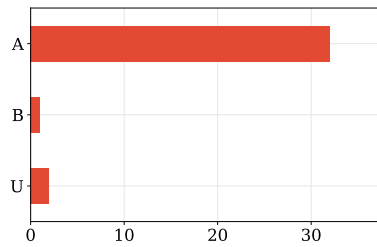
2015: Not a clear result for the maximal standard adjective: many seemed to interpret *straight* as *more straight*.

8.5.5 Other items

9



Hand me the empty one.

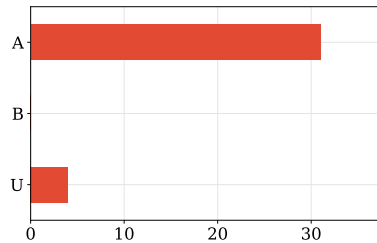


Expected result for a maximal adjective like *empty*.

10



Hand me the empty one.



Interesting shift from item 9. If A is pragmatically empty, then why didn't this interfere in 9?

References

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