

## Vagueness and Discourse

### 1 Context dependence and context change

Up to now, we've seen a couple of ways in which vague terms are (or may be, or at least appear to be) context dependent. The first involves the context-dependence of the 'comparison class' which clearly plays some role in the computation of the extension of the predicate.

- (1) a. Lyosha is old. *for a dog/for a pug*  
b. Kirk Hinrich is tall. *for a man/for a basketball player*
- (2) a. The coffee in Rome is expensive. *Rome/Naples v. Rome/Chicago*  
b. The Mars Pathfinder mission was expensive. *space missions v. stuff*
- (3) a. The boys in Ms. Jenny's nursery school class built a big snowman.  
b. The boys in Alpha Sigma Sigma built a big snowman.
- (4) a. Chris Kennedy bought an expensive house.  
b. Michael Jackson bought an expensive house.

A slightly more dramatic examples of this sort of context dependence: vague predicates (or at least those formed out of gradable adjectives) can be used in definite descriptions to pick out one of two objects that possess the property to different degrees, even when both/neither satisfy the property in question independently.

- (5) a. CONTEXT: Two borderline fat pigs, one fatter than the other (Kyburg and Morreau 2000)  
The fat pig can talk to spiders.  
b. CONTEXT: Two small/large cubes, one bigger than the other (Syrett, Bradley, Kennedy, and Lidz 2005)  
Please hand me the big one.

The second — at least on the analyses we've been considering in the past couple of weeks — involves factors involved in explaining the Sorites Paradox and borderlines/boundarylessness, which are active even after the comparison class has been determined.

- Raffman's 'I-context': The extension of the predicate is affected by the internal psychological state of the language user.
- Graff's interest relativity: The extension of the predicate is determined in part by the interests, expectations and so forth of the participants in the discourse, via the *significant degree* part of its intension.

- (6) i. A 16 year old pug dog is old for a pug.  
ii. Any pug that is 1 day younger than an old pug is old for a pug.  
iii. A 1 year old pug dog is old for a pug.

The idea here (especially for Raffman, though Graff's analysis depends in part on this as well) is that the use of a vague predicate in a context *c* has consequences for its subsequent use/meaning.

1. How is the second type of context dependence related to the first type?

2. At what level of representation (syntactic, semantic, discourse) are these relations captured?
3. How do we model the ‘dynamics of vagueness’?

## 2 Standards of differentiation

Kyburg and Morreau (2000): Sentences like those in (5) involve negotiation about how to use vague terms; this is *characteristic* of vague language. Here is what K&M say we need to handle such cases:

- Semantic account of vagueness (supervaluations with ‘penumbral connections’)
- Theory of conveyed meanings (presuppositions, implicatures, etc.) and context update
- Theory of belief accommodation

What is being accommodated in examples like those in (5) is the extension of the vague predicate (or something that determines the extension, i.e. the standard of comparison).

- (7) *Context update*  
 If  $c$  is a context and  $s$  is a sentence uttered in  $c$ , then  $\mathbf{common-ground}(c + s) = \mathbf{common-ground}(c) \cup \mathbf{conveyed-meanings}(s)(c)$

This handles most cases of accommodation, and can deal with examples in which the use of a sentence containing a vague predicate causes the common ground to ‘grow’. But what happens when the use of a vague predicate introduces inconsistency?

- (8) A: Those last two pieces of pie are pretty small.  
 B: Yeah. Well, you can have the big one since you did all the cooking.

Penumbral connections should ensure that *x is small* entails *x is not big*, so how do we deal with (even less explicit) cases like (8)?

- (9) *Vague accommodation*  
 Take the conveyed meanings of an utterance. Add the non-vague sentences of the common ground. Finally, add as many of the remaining vague sentences as you can without introducing inconsistency.

This model presupposes that the common ground contains ‘vague sentences’, which makes me a little nervous, though the intuition seems on target. In particular, it gives us an account of the infelicity of examples like those in (10):

- (10) a. ??The fat one can talk to spiders. *two obese pigs*  
 b. ??The tall one is the Sears Tower. *Sears Tower, Hancock Building*  
 c. ??The small one is a hydrogen atom. *hydrogen, helium*

Though could this have something to do with ‘crisp judgments’? If being *definitely P* precludes the possibility of accommodation, what are the implications for comparatives and *compared to* constructions?

**An empirical question:** Is this sort of accommodation of vague language possible only with vague predicates based on (clearly) gradable expressions?

- (11) a. The brown pig can talk to spiders.

- b. The pig in front of the feeder won the prize.
- c. The helicopter above the building is getting ready to land.
- d. I'll take the (big) heap of money, please.
- e. I'll take the martini, please.
- f. The chair is on sale.

**A theoretical question:** What exactly are we accommodating when we accommodate vague language in this way?

### 3 Delineations

Lewis (1970): Intensions are functions from *indices* to extensions. Indices are *n*-tuples of *coordinates*: context-dependent features ‘other than meaning’ that may enter into determining extensions.

- world coordinate, contextual coordinates (place, time, speaker, audience, etc.), assignment coordinate, ...
- DELINEATION COORDINATE

In a language with two vague terms *warm*, *cool*, the delineation coordinate would be a positive real number that represents the boundary temperature between the warm and cool things. But in reality, it's going to have to be something more like a set of pairs of degrees and vague predicates, or probably even more likely a set of triples of the form in (12), where *D* is a (typically singleton) set of degrees, *G* a vague (gradable?) predicate, and *C* a comparison class.

$$(12) \quad \langle D, G, C \rangle$$

This system has the advantage of allowing us to model accommodation of vague language in the same way as other sorts of accommodation (Lewis 1979). However, as Kyburg and Morreau point out, we're going to need a lot of arbitrary triples for the same *G*. (Also, how would this way of doing things handle the cases in (11)?)

Barker (2002): Assume a function **d** that maps worlds into delineations for that world, and treat the latter as functions from vague (gradable) predicates to degrees (the STANDARD OF COMPARISON) and use this as the basis for a dynamic theory of meaning:

$$(13) \quad \llbracket fat \rrbracket = \lambda x \lambda C. \{c \in C \mid c \in [\mathbf{fat}(x) \succeq \mathbf{d}(c)(\llbracket fat \rrbracket)]\}$$

This is a ‘positive-basic’ analysis; we can recast it in terms of a decompositional (measure function) analysis as follows:

$$(14) \quad \begin{array}{l} \text{a. } \llbracket fat \rrbracket = \mathbf{fat} \\ \text{b. } \llbracket pos \rrbracket = \lambda g \lambda x \lambda C. \{c \in C \mid c \in [g(x) \succeq \mathbf{d}(c)(g)]\} \\ \text{c. } \llbracket pos(fat) \rrbracket = \lambda x \lambda C. \{c \in C \mid c \in [\mathbf{fat}(x) \succeq \mathbf{d}(c)(\mathbf{fat})]\} \end{array}$$

On its own, this looks like an analysis that will entail sharp boundaries. However, as Barker says, it's consistent with epistemological vagueness: we might know that (14c) is the meaning of *is fat* without knowing what the standard actually is. In fact, according to Barker, once we have a dynamic semantics for the positive form, we allow for purely metalinguistic SHARPENING uses of vague predicates:

- (15) A: What counts as fat around here?
- B: Well, that pig is fat.

Barker claims that examples like (16a) have only such sharpening uses, but I'm not so sure about that.

- (16) a. Feynman was stupid to dance like that.  
b. It was stupid of Feynman to dance like that.  
c. Feynman's dancing like that was stupid.  
d. Feynman was stupid.

At any rate, the basic architecture appears to provide a more general account of the interaction of 'comparison classes' and context, because we can take advantage of two independently motivated kinds of context-dependence to get variability in the standard of comparison:

- Domain of discourse (variability in  $c$ )
- Functional domain (variability in  $g$ )

This gives us an 'on the fly' means of fixing the standard of comparison. If we add to that some (learned) constraints on  $\mathbf{d}$  (e.g., for any  $c$ ,  $\mathbf{d}(c)(\mathbf{fat}_{pig}) \prec n$ ), we should be able to handle the facts in (11). (This will also give us a handle on how we know when something is *definitely P.*)

How does this framework help us with the Sorites and borderline cases/boundarylessness? Barker says that 'the use of a vague predicate makes it more precise', but could it also result in 'deprecisification' when we get to a Gestalt shift, à la Raffman?

Alternatively, could we identify  $\mathbf{d}$  with the Graff's *significantly greater than* relation? This is what I do in Kennedy to appear (though I'm not sure if I still like that idea!).

Some relevant data: we see 'crisp judgments' effects in sharpening contexts:

- (17) CONTEXT: Betty is a little taller than Abe  
A: What counts as tall around here? Is Abe tall?  
B: #No, but Betty is.
- (18) CONTEXT: A novice bartender learning how to fill glasses from an expert; the second glass is just a little bit fuller than the first  
A: Is this glass full?  
B: No, but this one is

This touches on the relative/absolute distinction, which I want to come back to next week.

## References

- Barker, Chris. 2002. The dynamics of vagueness. *Linguistics and Philosophy* 25:1–36.
- Kennedy, Christopher. to appear. Vagueness and grammar: The semantics of relative and absolute gradable predicates. *Linguistics and Philosophy*.
- Kyburg, Alice, and Michael Morreau. 2000. Fitting words: Vague language in context. *Linguistics and Philosophy* 23:577–597.
- Lewis, David K. 1970. General semantics. *Synthese* 22:18–67.
- Lewis, David K. 1979. Scorekeeping in a language game. *Journal of Philosophical Logic* 8:339–359.
- Syrett, Kristen, Evan Bradley, Christopher Kennedy, and Jeffrey Lidz. 2005. Shifting standards: Children's understanding of gradable adjectives. Paper presented at the 2005 Annual Meeting of the Linguistics Society of America, San Francisco, CA.