# Vagueness, Adjectives, and Interests (II)

Delia Graff (delia.graff@cornell.edu)
Sage School of Philosophy—Cornell University

## I. Vagueness: The Problem(s)

Examples of vague adjectives: 'tall', 'rich' 'happy'.

(a) **Borderline Cases**

- $x$ is a borderline case of 'tall' just in case $x$ is neither definitely tall nor definitely not tall.

  equiv: $(\neg\,\text{DEF}\,T(x)\ \&\ \neg\,\text{DEF}\,\neg\,T(x))$.
  equiv: $\neg(\text{DEF}\,T(x) \vee \text{DEF}\,\neg T(x))$.
  equiv: $\neg\Delta\,T(x)$ ("not determinate *whether* $x$ is tall").

(b) **The Sorites Paradox**

- P1: Any 2.5 meter tall man is tall (for a man).
  P2: Any man 1mm shorter than a tall man is tall (for a man).

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  C: Therefore, any 1.5 meter tall man is tall (for a man).

  Grounds for P2—the sorites premise: No matter your height, if you were tall before you went to bed, and you shrunk just 1mm over night, you were still tall when you woke up.

- A sorites series:

| Man 0 | Man 1 | Man 2 | ··· | Man 1000 |
|---|---|---|---|---|
| 2.5m | 2.499m | 2.498m | | 1.5m |
| ∼ 8 ft | | | | ∼ 4.5 ft |

- P1: $T(0)$
  P2: $\forall n(T(n) \rightarrow T(n+1))$

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  C: $\therefore T(1000)$

  The argument is valid: the inference to the conclusion requires (repeated applications of) only Universal Instantiation ($\forall x \Phi x$ / $\therefore \Phi a$) and Modus Ponens ($A$, $A \rightarrow B$ / $\therefore B$).

(c) **Fuzzy Boundaries**

- On our sorites series there's a "fuzzy boundary" between the tall and the not tall.

• Suppose we try to "solve" the sorites paradox (i.e., say either why the premises aren't both true or why the reasoning isn't valid reasoning) by denying the sorites premise: by saying that it's *not* the case that any man 1mm shorter than a tall man is tall (for a man):

  $\neg\forall n(T(n) \rightarrow T(n+1))$.

  But this is (in classical logic) equivalent to:

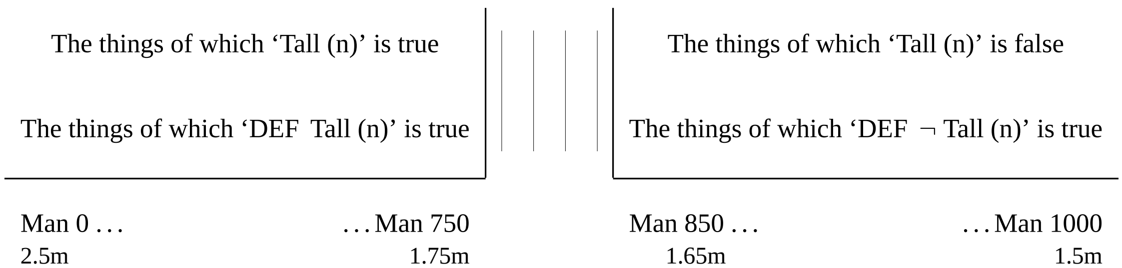
  $\exists n(T(n)\ \&\ \neg T(n+1))$.

  - In other words, denying the sorites premise seems to commit us to there being no borderline cases, and no fuzzy boundary between the tall and the not tall.
  - Main philosophical focus has been to explain how we can rescind commitment to the sroites premise while still allowing for borderline cases.

## II. Two Options

1. **Supervaluations:** (The presentation here derives from Fine (1975). See also Kamp (1975) for early application of supervaluational semantics to vagueness.)

   - Vague predicates are gappy: the things of which they're true (the things in their *extension*); and the things of which they're false (the things in their *anti-extension*) don't exhaust the domain.
   - A sentence with a vague predicate is true (false) just in case it's classically true (false) for all admissible ways of assigning objects in the gap to the extension or anti-extension of the predicate.

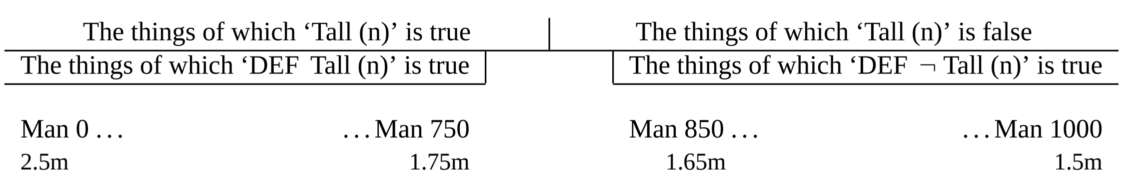



   - Given supervaluational semantics the sorites premise is **false**:
     $\forall n(T(n) \rightarrow T(n+1))$
     is false, since false for any admissible way of "precisifying" the extension of $T$.
   - The classical equivalent of it's negation is **true**:
     $\exists n(T(n) \,\&\, \neg T(n+1))$
     is true, since true for any admissible way of precisifying the extension of $T$.
     But still, there are borderline cases, construed as extension gaps.
   - In fact, although the following is true:
     DEF $\exists n(T(n) \,\&\, \neg T(n+1))$,
     the following is false:
     $\exists n$ DEF $(T(n) \,\&\, \neg T(n+1))$,

     (A sentence 'DEF $A$' is true just in case '$A$' is true.)

2. **Epistemicism:**

   - Adopt classical semantics, in particular, bivalence: every (contentful utterance of a declarative) sentence is either true or false, and not both.
     There's no gap between the things of which a vague predicate is true and the things of which it's false.




     Yet the location of the boundary is *unknowable*.
     A sentence 'DEF $A$' is true just in case '$A$' is knowably true.
   - The sorites premise is false.
     $\forall n(T(n) \rightarrow T(n+1))$.
   - The classical equivalent of it's negation is **true**:
     $\exists n(T(n) \,\&\, \neg T(n+1))$.

     But still, there are borderline cases, construed as knowable-extension gaps. (See Williamson (1994) for defense by appeal to *inexact knowledge*.)

## III. Two Questions

1. **Epistemological Question:** On both views, there is a boundary between the things of which 'tall' is true and the rest. Why don't we know where that boundary is?

   - Epistemicism comes ready made with an answer.
   - Supervaluationism by itself provides no answer.

2. **Psychological Question:** Why do we believe of every point in the sorites series that the boundary is not there? In effect, the question is: why do we accept the sorites premise in the first place?

   - Neither Epistemicism nor Supervluationism provides an answer.

I want to focus on these two questions, rather than the issue of accommodating borderline cases.[1]

## IV. Digression: Two Conceptions of Fuzzy Boundaries

1. Fuzzy boundaries as *gray areas*.

   - A predicate has fuzzy boundaries just in case it has borderline cases.

2. Fuzzy boundaries as *seamless transitions*.

   - The transition from the tall things to the rest along the sorites series occurs but seems not to occur at any particular point.
   - A vague predicate seems "tolerant" of small changes withough being tolerant of large ones. (Wright 1975)
   - A vague predicate seems "boundaryless." (Sainsbury 1991)

   But it's not really possible to have fuzzy boundaries in this sense. My goal is to explain why vague predicates *seem* boundaryless. This has been the focus of contextualist approaches to vagueness.[2]

## V. Two Elements of Context-Sensitivity for Vague Adjectives

1. Implicit reference to comparison classes:

   - An utterance of 'John is not rich' could mean that John is not rich for a philosopher or could mean that John is not rich for a major league baseball player.
   - Explicit reference to comparison classes doesn't eliminate vagueness.
     'tall for a basketball player' is just as vague as 'tall'

2. Explicit reference to comparison classes doesn't eliminate context-sensitivity.
   'old for a dog' is context-dependent.

   - Fido is 14 years old.
   - Rover is 20 years old
   - The claim that Fido is old for a dog could be a claim about his being in his old age.
   - The claim that Rover is old for a dog could be a claim about his extreme longevity.

[1] Kamp's (1981) reason for rejecting supervaluation semantics for vagueness is closely related to its failure to answer the questions I pose here. Unlike me, Kamp thought semantics for vague predicates should render sorites premises *true*, yet somehow block sorites reasoning.)

[2] See Kamp (1981), Manfred Pinkal (1984), Jamie Tappenden (1993), Diana Raffman (1994, 1996), Kees van Deemter (1996), Scott Soames (1999, ch. 7) and Graff (1997, 2000).

⇒ On my view: $x$ is old for a dog means that $x$ is significantly older than is the norm for a dog.
Context-dependence of above results from the fact that there are different kinds of norms:

- norm of peak health,
- norm of life-expectancy.

### VI. Further Element of Context-Sensitivity Stressed by Contextualists about Vagueness

**Similarity Constraint:** When $x$ and $y$ are extremely similar$_F$ (that is, similar in the respect relevant for predications of a vague adjective $F$), and the context is such that ______ , then $x$ is in the extension (or anti-extension) of $F$ (in that context) if $y$ is.

Example 1: Two basket-ball teams
Example 2: Eccentric Art Collector

- An extension-boundary for a vague predicate $F$ can divide an extremely similar$_F$ pair *only* when their extreme similarity$_F$ is in some sense not being attended to.

- Kamp (1981)-Soames (1999) version: Similarity constraint kicks in when either $F(x)$ or $F(y)$ is part of the *background* of the context.
- Raffman (1994)-Graff (2000) version: Similarity constraint kicks in when the similarity$_F$ of $x$ and $y$ is *salient* in the context.
  - Raffman-Graff version handles examples better.

### VII. My Answers to the Two Questions:

**The Epistemological Question:** We cannot find the extension-boundary for vague predicates because it cannot be where we're looking.

- Examination of any given adjacent pair in a sorites series raises the similarity of that pair to salience.
- So the boundary can never be where we're looking given my version of the similarity constraint.

**The Psychological Question:** We took the sorites premise $\forall n(T(n) \rightarrow T(n+1))$ to be true, because every instance of it *is* true in the context in which that instance of it is being evaluated.

### VIII. Interest-Relativity: My Explanation for why the Similarity Constraint is in Place

When $F$ is a vague adjective,

- something is $F$ just in case it's significantly more $F$ than the norm;
- something is $F$ relative to comparison class $C$ just in case it's significantly more $F$ than is the norm for $C$.

If $x$ and $y$ are in respect of $F$ the *same for present purposes*, then one is *significantly* more $F$ than is the norm (for $C$) if and only if the other is. Whether a difference is a significant difference is a function of our interests.

Typically, we have an interest in efficiency, which yields the following result: when $x$ and $y$ are extremely similar$_F$, *and* they are being actively considered, the cost of discriminating$_F$ between them typically outweighs the benefit of discriminating between them—hence they are the same for present purposes, hence one is significantly more $F$ than is the norm (for $C$) if and only if the other is.

## IX. Implications for the Semantics of Adjectives

1. Some vague adjectives have precise uses; others do not.

| Has Precise and Vague Use: | Has Vague Use Only: |
|---|---|
| (a) square/oblong/squat (of rectangles) | (a) short/tall |
| (b) straight | (b) curvy/winding |
| (c) flat | (c) bumpy/hilly |
| (d) early/late | (d) poor/rich |
| (e) broke | (e) solvent |

2. Inclusion relation may obtain in either direction
   (a) precise-square $\subseteq$ vague-square
   (b) vague-oblong $\subseteq$ precise-oblong (of rectangles)
   (c) precise-flat $\subseteq$ vague-flat
   (d) vague-late $\subseteq$ precise-late

3. Preliminary organization of the data:
   (a) Divergence-adjectives (accurate/fast-slow, square/oblong-squat) have precise and vague uses:
      - the adjective that measures nearness to the "middle" (e.g. 'square') will have its precise extension included in its vague extension;
      - the adjective that measures farness from the "middle" (e.g. 'late') will have its vague extension included in its precise extension.

   (b) Limit-Case Adjectives (flat, straight) will have have vague and precise uses. Their precise extension is a subset of their vague extension. (They measure nearness to the "limit.")
   (c) Opposites of limit-case adjectives ('curvy', 'bumpy') have vague uses only. (They measure farness from the limit.)
   (d) Vague adjectives not associated with either limits or middles have no precise uses.

4. Question: Why the difference between flat/bumpy on the one hand, and poor/rich on the other hand?

   The bumpiness scale and the height scale both are bounded on the left (lower end) and unbounded on the right.

   Why doesn't 'poor' have a precise use, meaning *has no wealth*?

   - Tentative hypothesis: wealth scale, unlike bumpiness scale, is bounded, but open (doesn't contain its lower bound). (Cf. Kennedy & McNally (1999).)

5. Question: Does existence of both vague and precise uses of limit-case adjectives require positing an ambiguity?

   - Consider Unger-Lewis view about the meaning of 'flat':

     For something to be flat is for it to have *no* bumps. For something to be straight is for it to have *no* curves.

     ◦ Unger (1975) denies existence of a vague use of 'flat'. He thinks we generally speak falsely when we say that things are flat.

     ◦ Lewis (1979) admits vague use of 'flat'. Explains vague use of flat by appeal to contextual domain restriction of quantifier word 'no' used to explain the meaning of flat. To be flat is to have no bumps (except for those bumps we're ignoring).

     Problem, the following are fine:

     ◦ My desk is extremely flat,

     ◦ My desk is flatter than your desk,

     ◦ That candle is not very straight.

How could ‘flat’ and ‘straight’ accommodate degree modifiers if they just mean *have no bumps or curves*?

Unger acknowledges the problem (Unger 1975, Ch. II, §2). He proposes that

- ‘very straight’ means ‘very near to straight’.
- Very straight on this view does not entail straight.
- But ‘very bumpy’ does not mean ‘very near to bumpy’.
- And very bumpy does entail bumpy.
- So Unger posits an mibuity in ‘very’ depending on whether it modifies what he calls an “absolute” adjective, or a “relative” adjective.

But consider:

- That is very accurate for a two-hundred year-old watch.
- That is accurate for a two-hundred year-old watch.
- Meadow Street is very flat for a road in Ithaca.
- Meadow Street is flat for a road in Ithaca.
- ⇒ Entailments do hold here. (And hold in unrelativized (perhaps implicitly relativized) cases as well!!!)

Further, why can “absolute” adjectives accommodate relativization to a comparison class?

- * That has no hills for a road in Ithaca.
- * Sheila has no friends for a teen-age girl.
- He’s broke for a Microsoft Executive.
- * He has no money for a Microsoft Executive.
  But:
- ? For a Microsoft Executive, he has no money.

Conclusion: reject Unger-Lewis account.

- How can my view accommodate precise use of vague adjectives?

Nothing can have significanctly *more* straightness than the limit case of straightness.

I adapt Kennedy’s (1997) measure-function semantics for adjectives:

- That road is flat for a road in Ithaca.
  [John is [$_{DegP}$ [$\emptyset_{ABS}$ [$_{AdjP}$ flat]] for a road in Ithaca]]
- That road is flat
  [John is [$_{DegP}$ [$\emptyset_{ABS}$ [$_{AdjP}$ flat]] $C$]]

The adjective denotes a measure-function: a function from individuals to degrees of flatness.

The unpronounced $\emptyset_{ABS}$ is combines with the measure function denoted by ‘flat’ to yield a relation between individuals and (perhaps contextually supplied) degrees of flatness.

- $\emptyset_{deg} = \lambda G \lambda P \lambda x (G(x) \; \geq (\mathrm{NORM}(G))(P))$ (Kennedy’s version).
- $\emptyset_{deg} = \lambda G \lambda P \lambda x (G(x) \, !> (\mathrm{NORM}(G))(P))$ (my version).
- ⇒ To be tall for a philosopher is is to have (at least as much) significantly more height than is the norm for a philosopher.
- ⇒ To be flat for a road in Ithaca is is to have (at least as much) significantly more flatness than is the norm for a a road in Ithaca.

What of the precise use?

Note:

- Meadow Street is completely flat.
- * Meadow Street is completely flat for a road in Ithaca.

Compare to:

- John is 6ft tall.
- * John is 6ft tall for a philosopher.

Proposal: ‘completely flat’ expresses the precise use of flat. ‘Completely’ is a degree modifier: combines with a measure function to yield a property:

- *comletely* $= \lambda G \lambda x(G(x) \;= \text{MAX}(G))$.

⇒ To be completely flat is to have a degree of flatness equal to the maximum degree of flatness.

If ‘flat’ on its own (without ‘completely’) is capable of a precise use at all (which is something I’m actually skeptical of), then ‘completely’ is there, but unpronounced.

Important to remember that with limit-case adjectives, precise-“extension” is a subset of the vague extension. Compltely flat things will always be in the extension of ‘flat’, as long as the contextually supplied standard is never the maximum, which it won’t be since that would lead to vacuous falsity.

The “farness” members of the set of divergence adjectives (‘late’/‘early’) don’t pose a similar problem.

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