

The Landscape of Vagueness

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This paper investigates the grammatical principles governing the interpretation of vague predicates, focusing on the context dependence of the ‘standard of comparison’ with respect to which gradable predicates are judged to be true. I argue that the range of variability in interpretation of the standard is larger than has generally been assumed, and that there are distinct types of standards but that this variability can be traced to lexical and grammatical properties of different classes of gradable predicates.

1 Introduction

The general question that this paper addresses is how precisely sentences like (1) are assigned determinate truth conditions in a context of utterance.

(1) The Mars Pathfinder mission was expensive

The problem presented by sentences of this sort is that they are vague: (1) might be judged true in a conversation about things with the name ‘Pathfinder’ (such as compasses, mountain bikes, and sport utility vehicles, as well as missions to Mars), but false in a discussion of the cost of various missions to outer space (since a notable fact about the Mars Pathfinder mission was its relatively low cost).

The standard analysis of these sorts of sentences is that the locus of vagueness is the gradable adjective *expensive*: gradable adjectives establish relations between objects and measures of the degree to which they possess some property, and predicates like *is expensive* denote the property of having a degree of cost that exceeds some standard of comparison of cost. Crucially, the value of the implicit standard is not specified in the lexical entry of *expensive*, but is rather set contextually, and so it may vary in different utterance contexts. For example, in the first context mentioned above (things with the name ‘Pathfinder’), the standard of comparison for *expensive* should be fairly low on the scale of cost, making (1) true. In the second context (missions to outer space), the standard of comparison should be considerably higher, making it possible for (1) to be false.

There is general agreement among researchers on this topic that something like this is what is going on in the interpretation of vague predicates. What is less clear, however, is how precisely the standard of comparison is actually determined in a context of use: to what extent is it determined compositionally by pieces of the linguistic representation (and how do these pieces interact), and to what extent do purely contextual (possibly non-linguistic) factors influence its value? In other words, what is the grammar of vagueness? This question have received a fair amount of discussion in the literature, though a completely satisfactory theory of the grammar of vagueness has not yet been achieved (see e.g., Sapir 1944; McConnell-Ginet 1973; Kamp 1975; Fine 1975; Klein 1980; Ludlow 1989; Kennedy 1999; Graff 2000).

The goal of this paper is a relatively modest one: I will show that the empirical domain that such a theory needs to cover is actually quite a bit richer and more complicated than most of the research on this topic (which has focused almost exclusively on cases like (1)) assumes. Specifically, I will demonstrate that there are actually distinct types of standards, each of which have their own unique and clearly identifiable semantic properties but which also share enough features in common that we should expect a theory of the grammar of vagueness to provide a fully general account of them if it is to achieve explanatory adequacy. Subsequent work needs to be directed towards building a semantic analysis of the interpretation of vague predicates that achieves this goal — to build a grammar of vagueness. At the end of this paper, I will outline some initial thoughts about what such a theory should look like, but for now I will focus on clearly defining the empirical ground that needs to be covered.

2 A Typology of Standards of Comparison

As noted above, most of the research on vague predicates has focused on examples like (1), in which the standard of comparison is some sort of ‘norm’. There has been relatively little discussion of what exactly a norm is, however, or whether there are different kinds of standards. There are a couple of exceptions to this generalization, however, which serve as a starting point for identifying the full range of data that a semantic analysis of vague expressions needs to account for.

2.1 Different Kinds of Norms

In her interest-relative account of the sorites paradox, Graff (2000) argues for a semantic analysis of vague predicates much like the one outlined above for *expensive*, in that it assumes that such predicates involve relations between objects and

implicit norms. However, Graff also makes the important observation that “there is more than one kind of norm”. As an example, she points to different interpretations of predicates headed by the adjective *old*. Consider two dogs: Fido, who is fourteen, and Rover, who is twenty. In this context, the sentences in (2) could be used to express very different propositions.

- (2) a. Fido is old.
b. Rover is old.

(2a) is most naturally interpreted to mean that Fido’s age exceeds some ‘norm of average’ for dogs. (2b) can be understood to mean something stronger, however: Rover’s age exceeds a ‘norm of life expectancy’ for dogs. Using the former standard, both sentences in (2) are true; using the latter standard, (2a) is false.

A second case discussed by Graff involves standards based on a ‘norm of expectation’. ((2b) may be a variant of this sort of case.) Consider a context in which I have a friend whose child is definitely not tall for his age, is in fact fairly small. If I visit my friend after not seeing her for some time and discover that her child has grown more than I expected, but is nevertheless still fairly small, it is perfectly felicitous for me to assert (3).

- (3) Benny is tall!

Here the interpretation is not ‘Benny’s height exceeds the norm for children like him’, but rather something like ‘Benny’s height is greater than I thought it would be’. Exclamative constructions like ‘How tall you are!’ represent a grammaticization of this sort of interpretation.

In addition to Graff’s examples, we may identify a third case that arguably does not involve a ‘norm’ at all. As discussed recently by Kyburg and Morreau (2000), gradable adjectives can be used to distinguish one object from another, even when the degree to which that object possess the relevant is less than the norm of average for such objects in the context of utterance (see also Sedivy, Tanenhaus, Chambers, and Carlson 1999). Consider, for example, a context in which one farmer is negotiating with another farmer over two pigs (adapting Kyburg and Morreau’s example). One of the pigs is a runt, the other is bigger, but neither truly qualifies as fat for a pig. It is nevertheless the case that a definite description like *the fat pig* can be quite naturally used to identify the fatter of the two pigs, since the standard for *fat* can be shifted just for the purpose of differentiating one pig from another. Thus (4a) could be both felicitous and true in this context, while (4b) would be false.

- (4) a. The fat pig can talk to spiders.

- b. The pig that can talk to spiders is fat (for a pig).

Examples like (4a) involve what we might call ‘standards of differentiation’, but clearly do not make reference to norms.

Further research will undoubtedly uncover still more varieties of norms and corresponding types of standards, but these examples suffice to make the following point. Assuming that all of the gradable adjectives in these examples involve reference to *some* standard of comparison — an unavoidable conclusion given the standard lexical semantic analysis of gradable adjectives — and that gradable adjectives are representative of the class of vague predicates as a whole, it cannot be the case that the semantics of vague predicates is necessarily characterized in terms of a norm, as suggested in the discussion of (1) above. Instead, whether the standard is norm-related or not is a matter of interpretation in context, and a fully adequate theory of the grammar of comparison should be crafted to reflect this fact.

2.2 *Absolute vs. Relative Standards*

A second example of non-norm-based standards that makes an even more powerful case than Graff’s examples for recognizing different types of standards comes from the work of Unger (1975), and more recently Kennedy and McNally (1999, 2002). While it is generally assumed that all gradable predicates headed give rise to the sort of interpretations we see with *tall*, *fat*, *expensive* and so forth — reference to a contextually determined standard of some kind, whether norm-based or not — this is actually not the case: there are adjectives that are demonstrably gradable but whose interpretations are not context-dependent in the way we have seen so far.

For example, the gradable adjectives in (5) simply require their arguments to possess some *minimal* degree of the property they describe, not that the degree to which the arguments possess this property is greater than some norm.

(5) *Minimum standard adjectives*

- a. The baby is awake.
- b. The table is wet.
- c. The door is open.
- d. The rod is bent.

Under normal usage, (5a) does not mean that the degree to which the baby is awake surpasses some standard (for babies), but rather simply means that the baby has a non-zero level of awokeness. Likewise, (5b) is true as long as there is some amount of water on the table, (5c) just requires some minimal positive aperture of the door, and (5d) is true of a rod that is minimally bent.

The adjectives in (6) are similar, except that their arguments are required to possess a *maximal* degree of the property in question.

(6) *Maximum standard adjectives*

- a. The glass is full.
- b. The road is flat.
- c. The door is closed.
- d. The rod is straight.

(6a) typically means that the glass is completely full, not that its contents fall above some standard of fullness, (6b) is an assertion that the road has no bumps, (6c) requires the door to be completely closed, and (6d) requires a completely straight rod.

Following Unger (1975), I will refer to adjectives like those in (5) and (6) as ABSOLUTE (gradable) adjectives, and ‘ordinary’ context-dependent gradable adjectives as RELATIVE (gradable) adjectives.¹ There has been little discussion in the semantics literature of absolute limit adjectives presumably due to a strong initial intuition that the adjectives in (5) actually require something significantly more than a minimum standard, and that those in (6) actually allow something less than a maximum standard. These intuitions are supported by examples like those in (7).

- (7)
- a. I’m not awake yet.
 - b. The tank is full, but you can still top it off. It’s not completely full yet.
 - c. The theatre is empty tonight.

(7a) can be felicitously uttered by someone who is not talking in his sleep. Likewise, most speakers I have consulted feel that *full* only requires its arguments to fall *near* the maximal value on the scale, pointing to examples like (7b), which does not sound contradictory (but cf. the examples discussed below in (25)-(26)). Similarly, (7c) can be used to describe a situation in which only a very few people show up to a film in a very large movie theatre.

On the whole, it is fairly easy to come up with other ‘imprecise’ uses of absolute limit adjectives. However, as argued in detail by Kennedy and McNally (2002), there are both coherent theoretical reasons and compelling empirical argu-

¹Note that absolute adjectives *are* gradable, as shown by their acceptability in comparatives:

- (i)
- a. The baby is more awake now than it was a few minutes ago.
 - b. The table is wetter than the floor.
 - c. My glass is fuller than your glass.
 - d. The door is more closed than it needs to be.

ments for the conclusion that absolute adjectives, unlike relative adjectives, do in fact involve non-context dependent, endpoint-oriented standards. I refer the reader to Kennedy and McNally for the theoretical explanation of imprecise uses of absolute gradable adjectives (which is stated in terms of Lasersohn's (1999) notion of pragmatic halos); here I focus on the empirical evidence for this distinction.

2.2.1 *For-PPs*

The first piece of evidence that distinguishes absolute adjectives from relative ones comes from the distribution of *for*-PPs. As shown by (8), such expressions can be used to introduce the comparison class with respect to which a context-dependent standard is determined.

- (8)
- a. The baby is {tall, short, fast, talkative} for a two year old.
 - b. That table is {small, sturdy, unusual} for a dining room table.
 - c. That glass is {expensive, clean, dirty} for a wine glass.
 - d. The door is {strong, big, wide} for an office door.

This type of *for*-PP appears to be infelicitous with adjectives like those in (5) and (6), however, which follows if the interpretation of these adjectives does not involve reference to a context-dependent standard: the *for*-PPs in (9) contribute nothing to the assertion.

- (9)
- a. ??The baby is awake for a kid who hasn't napped all morning.
 - b. ??That table is wet for a dining room table.
 - c. ??That glass is full for a wine glass.
 - d. ??The door is closed for an office door.

This restriction is not absolute, however. The examples in (10) involve absolute adjectives, but the *for*-PPs are felicitous. (Thanks to Jeff King for bringing these to my attention.)

- (10)
- a. That cue is straight for a pool cue in a dive like this.
 - b. This theater is empty for a theater showing a popular movie.

These facts show that it is in fact possible to use a comparison class to shift the standard of a maximum standard absolute adjective. (It is unclear whether similar examples can be constructed for minimum standard adjectives.) However, I do not think that these examples call into question the basic relative/absolute distinction; rather, they can be used to reinforce the initial claim that such a distinction should be made.

An important difference between the examples in (10) and those in (8) is that (10a-b) strongly implicate the negations in (11): (10b), for example, would be infelicitous if used to describe a theater that is in fact completely empty.

- (11) a. That cue is not straight.
b. This theater is not empty.

This is not generally true of relative adjectives with *for*-PPs, as illustrated by the examples in (12).

- (12) a. Nigel is tall for a dwarf.
b. Nigel is tall for a basketball player.

Given what we know about dwarfs, we would likely infer from (12a) that Nigel is not tall. In contrast, given what we know about basketball players, we would naturally infer from (12b) that Nigel is tall.

The examples in (12) show that whether or not we make an inference from ‘*x is A for a y*’ to ‘*x is (not) A*’, when *A* is a relative adjective, is dependent on the nature of the comparison class identified. In principle, the standard determined on the basis of this comparison class could fall either above or below whatever standard is determined based on properties of the subject alone, allowing for either a positive or negative inference to the simple sentence without the comparison class, respectively. In other words, with relative adjectives, a *for*-PP can move a standard up or down, relative to whatever standard would be identified in the absence of such information.

The fact that examples like (10) always give rise to the negative inferences in (11), on the other hand, indicates that the comparison class can only move the standard below what it would have been without the comparison class. If the ‘default’ standard for absolute adjectives like *straight*, *full* etc. is the maximal value on the relevant scale, then the only alternative values would in fact be lower ones, and the facts observed here are exactly what we would expect to see.

Extending this line of reasoning a bit further, we can make the following generalization: if the default standard for absolute adjectives like *straight* and *full* is a maximum value on the relevant scale, then a *for*-PP whose function is to explicitly identify a comparison class should be felicitous only if it has the effect of moving the standard away from the maximum (i.e., down the scale). If, on the other hand, such absolute adjectives do not default to a maximum standard — if they are just a special case of relative adjectives, whose standards happen to tend to fall near the upper end of a scale — then we should also be able to use a *for*-PP to explicitly indicate that the standard is close to or at the maximum. The following minimal pair provides a test of these two hypotheses:

- (13) a. That groove is straight for a groove carved by such an old machine.
 b. ??That groove is straight for a groove carved by such a precise machine.

The fact that (13b) is infelicitous suggests that it is not possible to use a comparison class to get closer to the maximum value on the scale, indicating that the maximum is in fact the default.

2.2.2 *Shifting standards*

The preceding array of facts indicated that it is in general difficult to shift the standard of an absolute adjective, and even when this is possible, the standard can only be shifted in one direction, which follows if the default is an endpoint-oriented standard. Two similar arguments reinforce the position that the standard of an absolute adjective cannot in general be shifted, even in contexts in which the standards of relative adjectives can be easily shifted.

The first case involves antonyms. As shown by (14), it is possible to sequentially describe an object in terms of both members of a relative antonym pair in a single context, since the standard for the second member of the pair can be appropriately shifted up or down to be consistent with that introduced by the first.

- (14) a. Mercury is a small planet, but it's still quite large.
 b. The Mars Pathfinder mission was expensive, but it was inexpensive compared to other missions to outer space.

In contrast, antonyms with context independent standards cannot be felicitously predicated of the same object in the same context:

- (15) a. ??This is a full theatre, though it's still quite empty.
 b. ??The students are awake, but they're asleep for kids who are supposed to be paying attention.

As above, there appear to be counterexamples to this generalization. The sentences in (16) are felicitous, and have exactly the same form as those in (15) (thanks again to Jeff King for the data).

- (16) a. This is a full restaurant, but it's empty compared to the bar I went to last night.
 b. This is a full juice bar, but an empty cocktail bar.

It is not clear to me that these are actual counterexamples, however. In particular, these do not indicate a relative use of *full*; instead, they indicate that the way that we measure a property like fullness is relative to the sort of 'container' we are talking

about. (16a), for example, might be used to describe a restaurant that contains enough people to fill all the tables — in which case the restaurant is full in the absolute sense — but not enough people to fill a bar, where the criteria for fullness are different: since people typically stand as well as sit in bars, we require the space in between the tables to be full as well. (A similar story can be told for (16b), based on conventions about the number of people needed to fill a juice bar vs. a cocktail bar.)

The use of *empty* in these examples is more complicated. What is clear is that neither of (16a-b) could be felicitously followed by (17a-b), unlike what we saw with the relative adjectives in (14).

- (17) a. The restaurant is empty.
b. The bar is empty.

One possible hypothesis is that the adjectives are somehow being assigned a fully comparative meaning (*'The restaurant is emptier than the bar I went to last night'*), presumably based on the obvious falsity of the potential interpretations in (17). This is a puzzle that needs further thought, however.

The second argument of this type comes from the use of gradable adjectives in definite descriptions. As discussed above (see (4)), relative adjectives can have 'standards of differentiation' in such contexts. Absolute limit adjectives do not permit this sort of interpretation, however. Consider a context in which two glasses of beer are on the table, one of which is half full and one of which is $2/3$ full. Referring to the latter with the definite description *the full glass*, as in (18a), is infelicitous; instead, it is necessary to use the comparative form of the adjective as in (18b). (The comparative form is of course also possible with relative adjectives when a distinction is being made between two objects, but it is not required.)

- (18) a. #The full glass of beer is mine.
b. The fuller (of the two) glass(es) of beer is mine.

Minimum standard absolute adjectives behave the same. If A and B are standing in front of two partially open doors, one that is barely open and one that is mostly open, A cannot felicitously direct B towards the more open of the two doors by saying (19a); A must say (19b).

- (19) a. #You should go through the open door.
b. You should go through the more open (of the two) door(s).

These facts follow if the standards for *full* and *open* are fixed at the maximum and minimum values of the respective scales (modulo imprecision). Since the standards cannot be shifted, the existence and uniqueness presuppositions associated with the

definite descriptions in these examples (that there is a full glass of beer/open door) are not satisfied, and the (a) sentences are anomalous.

2.2.3 *Pretty*

The degree modifier *pretty* also distinguishes between relative and absolute limit gradable adjectives. When it modifies adjectives of the former type, it has a meaning very similar to *very*, in that it ‘boosts’ the value of whatever degree the context selects as a standard (though perhaps not to quite the same degree). As a result, (20a) entails (20b).

- (20) a. The rod is pretty long.
b. The rod is long.

The same interpretation is observed with absolute limit adjectives that make use of minimal standards, such as *bent*: (21a) entails (21b), and describes a rod that has a high degree of bend relative to the (minimum) standard.

- (21) a. The rod is pretty bent.
b. The rod is bent.

In contrast, when *pretty* modifies an absolute limit adjective with a maximal standard, its interpretation is different, as pointed out by Unger (1975). (22a) means that the rod is nearly or almost straight, and entails the negation in (22b).

- (22) a. The rod is pretty straight.
b. The rod is not straight.

If the basic function of *pretty* is to boost the standard of the gradable predicate it modifies, then it is not surprising that this meaning disappears with maximum standard adjectives like *straight*: if the standard is already the maximum degree on the scale, it cannot be boosted. Following Unger, we may assume that in such cases, an implicit *close to* or *nearly* is inserted into the semantic representation as a kind of repair strategy, and *pretty* modifies this. That is, (22a) really means something like (23).

- (23) The rod is pretty nearly/close to straight.

2.2.4 *Entailment Patterns*

Entailment patterns provide a fourth piece of evidence for distinguishing relative from absolute limit adjectives. If the standards associated with the latter involve endpoints, as we have claimed, then the denotations of the predicates they head

can be characterized informally as in (24a) (for minimum standard adjectives) and (24b) (for maximum standard adjectives).

- (24) a. $\llbracket [\text{AP } \text{adj}_{\text{min}}] \rrbracket = \lambda x.x$ has a minimal degree of *adj*-ness
 b. $\llbracket [\text{AP } \text{adj}_{\text{max}}] \rrbracket = \lambda x.x$ has a maximal degree of *adj*-ness

This leads to clear predictions about entailment patterns. First, (24a) predicts that a denial *a is not adj_{min}* should entail that *a* possesses no amount *adj*-ness at all (assuming that the minimal degree on a closed scale represents a zero amount of the relevant property). The contradictory statements in (25) illustrate that this prediction is borne out.

- (25) a. #My hands are not wet, but there is some moisture on them.
 b. #The door isn't open, but it is ajar.

Second, (25b) predicts that an assertion of *a is adj_{max}* should entail that *a* has a maximal amount of '*adj*-ness', i.e., that nothing can be more *adj* than *a*. This sort of entailment is difficult to test, since maximum standard adjectives readily allow imprecise uses. However, as observed by Unger (1975), it is possible to force a precise interpretation by adding focal stress to the adjective. When we do this, as in (26), we see that the expected entailments arise:

- (26) a. #My glass is FULL, but yours is fuller than mine.
 b. #The line is STRAIGHT, but you can make it straighter.

In contrast to absolute adjectives, the truth conditions for a relative adjective entails only that its argument falls above a contextually determined standard of comparison. As a result, neither of the entailments discussed above should hold. This is correct:

- (27) a. That film is interesting, but it could be more interesting.
 b. Sam is not tall, but his height is normal for his age.

A related argument involving entailments is discussed in Cruse 1986 (see also Rotstein and Winter 2001). As shown by the examples in (28), there exist pairs of antonyms such that negation of one form entails the assertion of the other:

- (28) a. The door is not open. \models The door is closed.
 b. The table is not wet. \models The table is dry.
 c. The baby is not awake. \models The baby is asleep.

The explanation for this is straightforward: both members of the pairs in (28) are absolute limit adjectives, but the positive adjectives impose minimum standards

while the negative adjectives impose maximum standards. Since a minimal positive degree corresponds to a maximal negative degree on the same scale (see Kennedy 2001), the entailment relations in (28) follow from the truth conditions in (24).

Relative antonyms do not show the same entailment relations, as illustrated by (29).

- (29) a. The door is not large. $\not\models$ The door is small.
b. The table is not expensive. $\not\models$ The table is inexpensive.
c. The baby is not energetic. $\not\models$ The baby is lethargic.

Again, this follows from the fact that the standards for both positive and negative relative gradable adjectives are contextually identified, and crucially need not be endpoints (in fact, cannot be endpoints if the scales are open). Since a context dependent standard is determined for particular uses of particular adjectives, it need not be the case that the standard for e.g. *large* be the same as that of its antonym *small* (this point was illustrated above by (14a)), and we allow for the possibility of a ‘grey area’ between the standards onto which fall objects that are neither large nor small (Sapir’s (1944) ‘zone of indifference’; Klein’s (1980) ‘extension gap’). Indeed, the possibility of such ‘borderline cases’ is one of the defining properties of vague predicates; see Williamson 1994 for general discussion.

3 Desiderata of a grammar of vagueness

There are at least two ways to go about building an account of the array of data presented in the preceding section. Given the empirical differences between absolute and relative adjectives, we could simply assume that the two classes have different semantic analyses (e.g., are of different semantic types), and that our grammar of vagueness only has to deal with relative adjectives. Alternatively, we could attempt to build a general analysis of the semantics of gradable predicates in such a way as to assign the right sort of standard to relative and absolute gradable adjectives respectively based on lexical differences between the two classes — differences that would of course have to be identified and made explicit. There are a number of compelling arguments for taking the second route.

First, the data in section 2.1 demonstrated that we see different types of standards even if we limit our attention to the class of relative adjectives: not all standards are based on averages (e.g., norms of expectation), and some are not based on comparison classes (e.g., standards of differentiation). Likewise, we need to allow for variation of standard within the class of absolute adjectives, though there the variation is limited to two values (minimum or maximum standards). The more general point here is that since we need some algorithm(s) for determining

different sorts of standards within the relative and absolute classes anyway, we may as well aim for a theory that can also capture the relative/absolute distinction itself.

Second, as made clear in particular by the discussion in section 2.2.1, even absolute adjectives show variation in their standards, albeit a much more limited range of variation than relative adjectives (the standard can only be moved in one direction, and typically not very far). In other words, relative and absolute adjectives are siblings, with fundamentally the same type of meanings, not distant cousins. Ideally, then, we should capture their differences in terms of some general theory of vagueness resolution.

Finally there is distributional evidence that relative and absolute adjectives are of the same semantic type. In particular, they both combine with comparative morphology, unlike nongradable adjectives like *extinct*.

- (30) a. Kim is {smarter, taller, more interesting, happier} than Lee.
 b. The table is {flatter, wetter} than the chair.
 c. The bathtub is {fuller, emptier} than the sink.
 d. ??The wooly mammoth is more extinct than the elephant.

Assuming that acceptability of the comparative form indicates that an expression is of a particular semantic type — e.g., that it denotes a relation between objects and degrees on a scale, though there are other assumptions we might make (see Klein 1991 for an overview) — we must conclude that relative and absolute adjectives are members of the same basic semantic class.

This assumption is precisely what leads to the core puzzle of the data in 2, however. Let us assume for concreteness that gradable adjectives denote partial ordering relations between individuals and degrees (see Seuren 1973; Cresswell 1977; Hellan 1981; von Stechow 1984; Heim 1985; Bierwisch 1989; Klein 1991; Kennedy 1999 and many others), as stated in (31) (where \mathbf{m} is a function from objects to degrees, the precise value of which distinguishes one gradable adjective from another).

$$(31) \quad \llbracket [\text{A GrAdj}] \rrbracket = \lambda d \lambda x. \mathbf{m}(x) \succeq d$$

This hypothesis supports a straightforward analysis of comparatives and other degree constructions: comparatives restrict the value of the degree argument of the adjective.

In order to capture the vagueness of non-comparative forms, the standard assumption is that the degree variable in simple adjectival predicates is not specified, but is rather fixed contextually. One way to implement this idea would be to assume that the degree argument is bound by an implicit existential quantifier with an unspecified domain restriction, as in (32).

$$(32) \quad \llbracket [\text{AP GrAdj}] \rrbracket = \lambda x. \exists d [\mathbf{C}(d) \wedge \mathbf{m}(x) \succeq d]$$

Here \mathbf{C} is a property of degrees, e.g. the property of being greater than an average on the relevant scale for some comparison class.

The problem with the analysis as it stands is that it says nothing about what the actual value of \mathbf{C} must be in any particular context, and in particular it says nothing about how the value of \mathbf{C} might be constrained based on the particular adjective we use (relative or absolute). What we need is an algorithm for identifying the value of the contextual domain variable \mathbf{C} that is flexible enough to allow for the range of variation in standard type that we saw in section 2. In particular, depending on the linguistic or discourse context, \mathbf{C} should be able to take on (at least) the following values:

- (33)
- a. $\lambda d.d$ is significantly (à la Graff 2000) greater than a norm (for objects like x with respect to GrAdj)
 - b. $\lambda d.d$ is greater than expected (for x with respect to GrAdj)
 - c. $\lambda d.d$ is greater than the degree to which some other contextually salient object(s) is (are) GrAdj
 - d. $\lambda d.d$ is greater than the minimum value on the scale for GrAdj
 - e. $\lambda d.d$ is equals the maximum value on the scale for GrAdj

The trick is to ensure that we get the right value in the right context, and in particular, that we capture the relative/absolute distinction by forcing \mathbf{C} to go to (33d) or (33e) in predications involving minimum and maximum standard absolute adjectives, respectively. In other words, the determination of \mathbf{C} needs to be sensitive to at least the properties of the subject of predication, the comparison class identified by the context, other objects in the context, and lexical properties of the adjective itself (whatever determines the relative/absolute distinction). The next step in the research project, then, is to identify how precisely all these factors come together in a grammar of vagueness to determine just the right standard in the right contexts.

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