Extreme Degree Modification

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1 Introduction

Reflections on speedometers:

(1)

Certain degree modifiers are compatible with adjectives that are, in some sense, 'extreme':

(2) Your shoes are $\left\{\begin{array}{l}\text{downright}\\\text{flat-out}\\\text{positively}\\\text{full-on}\end{array}\right\}$ $\left\{\begin{array}{l}\text{gigantic}\\\text{gorgeous}\\\text{fantastic}\\\text{??big}\\\text{??pretty}\\\text{??OK}\end{array}\right\}$!!!

What's the relevant notion of extremeness here? What's special about these degree modifiers? What's special about these adjectives?

Map of the talk:

- empirical observations
  - extreme degree modifiers (EDMs) are an open natural class

- extreme adjectives (EAs; Cruse 1986, Paradis 1997, 2001 Rett 2008a,b) come in two flavors and have their own distinguishing properties

- some current ideas about adjectives and scale structure

- provide an analysis that introduces contextual domain restrictions into the semantics of degrees

- ask what this might reveal about nominal gradability (if there's time)

2 The Basic Facts

2.1 *Extreme Degree Modifiers*

The class includes:

(3) a. simply
     b. just
     c. positively
     d. absolutely
     e. flat-out
     f. full-on
     g. out-and-out
     h. downright
     i. outright
     j. straight-up
     k. balls-out

Others?

In general, these are weird with adjectives that aren't 'extreme' (same observation as in (2)):

(4) a. simply $\left\{\begin{array}{l}\text{gigantic}\\\text{??big}\end{array}\right\}$

     b. just $\left\{\begin{array}{l}\text{gorgeous}\\\text{??OK}\end{array}\right\}$

     c. full-on $\left\{\begin{array}{l}\text{crazy}\\\text{??sane}\end{array}\right\}$

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d. downright $\left\{ \begin{array}{l} \text{destitute} \\ \text{??solvent} \end{array} \right\}$

e. flat-out $\left\{ \begin{array}{l} \text{excellent} \\ \text{??adequate} \end{array} \right\}$

An open class, as the presumably recent coinage of *balls-out* reflects. Naturally-occurring examples online:

(5) a. Spacey's balls-out brilliant performance is Oscar bait all the way ....[1]

b. This book of poetry is balls out fantastic.[2]

c. That's a good example of how balls-out stupid our number-one Antoinette columnist is.[3]

d. After that, we'll have two weeks of championship tasting, in which we go balls-out crazy with the blind tasting ....[5]

2.2 *How Can We Recognize Extreme Adjectives?*

Cruse (1986) identifies the class explicitly—he calls these adjectives *implicit superlatives*—and observes three distinguishing characteristics.

First: compatibility with *absolutely*:

(6) absolutely $\left\{ \begin{array}{l} \text{huge} \\ \text{enormous} \\ \text{minute} \\ \text{*small} \\ \text{*large} \end{array} \right\}$ (Cruse 1986)

Alongside *absolutely*, the entire class of EDMs can be used as a diagnostic.

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[1] This occurred in Rolling Stone magazine in 2000, so the coinage isn't *so* terribly recent. `www.rollingstone.com/reviews/movie/5947267/review/5947268/the_usual_suspects`

[2] `www.goodreads.com/book/show/2811560.Scratching_at_the_Pavement`

[3] `www.dailyhowler.com/dh080708.shtml`

[5] `www.twittertastelive.com/group/theyoungwinos`

Second: compatibility with intensification via prosodic prominence:[6]

(7) a. That van is $\left\{ \begin{array}{l} \textit{huuuuuuuuuuuuuuuuuuuge} \\ \textit{??biiiiiiiiiiiiiiiiiiig} \end{array} \right\}$!

b. Kevin Spacey is $\left\{ \begin{array}{l} \text{fant}\textit{aaaa}\text{stic} \\ \textit{??goooooooooood} \end{array} \right\}$!

Third: resistance to comparatives, equatives, and other comparison degree constructions:

(8) ??A is more excellent than B.   (Paradis 1997)

(9) a. ?Godzilla is more gigantic than Mothra.

b. ?Monkeys are less marvelous than ferrets.

c. ?Everything is more scrumptious than natto.

A related fact (which I think is a distinct one): EAs resist modification by *very*:[7]

(10) a. ??Monkeys are very marvelous.

b. ??Godzilla is very fantastic.

Dialogues like these might also work as a diagnostic:

(11) Clyde isn't particularly wealthy.

a. No, he's (outright) destitute.

b. ??Yes, he's (outright) destitute.

c. ??No, he's very poor.

d. Yes, he's very poor.

(12) A: Clyde ain't so easy on the eyes.

B: What do you mean, 'not so easy on the eyes'? He's $\left\{ \begin{array}{l} \text{downright} \\ \text{??very} \end{array} \right\}$ ugly!

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[6] Interestingly, this phenomenon does not seem to be simply focus—both the meaning and the prosodic contour are different.

[7] For Cruse, *pretty, quite*, and *rather* also don't work.

The apparent generalization: EAs are particularly good for objecting to something about the preceding discourse.[8]

2.3 A Further Distinction: Two Flavors of Extreme Adjectives

A distinction should be made between EAs . . .

- that *always* behave as described in the previous section, which I'll call lexical EAs
- that *sometimes* do, which I'll call contextual EAs

Some (probably) lexical EAs:

(13) fantastic, wonderful, fabulous, gorgeous, resplendent, magnificent, glorious, sumptuous, spectacular, outstanding, tremendous, huge, gigantic, ginormous, mammoth, colossal, tremendous, enormous, monumental, minuscule, tiny, microscopic, minute, grotesque, delicious, scrumptious, idiotic, inane, destitute, penniless, terrified, horrified, obese, phenomenal, sensational, marvelous, superb, unflappable, amateurish, excellent, terrific, monstrous, extraordinary, hideous

Some contextual EAs:

(14) brilliant, certain, obvious, dangerous, reckless, infuriating, obscene, offensive, insulting, ridiculous, absurd, evil, contemptible, stupid, drunk, dead, ugly, dumb, rich, loaded, hopeless, calm, outrageous, incompetent

The most important difference is that contextual EAs behave like EAs in some contexts but not others:

(15) a. Clyde didn't panic during the earthquake—he was flat-out calm.
   b. ??In his transcendental meditation class, Clyde was flat-out calm.

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[8]There are no doubt many further complications here—the negation may well be metalinguistic, though I'm not sure that that should make a difference to this generalization.

(16) a. When we finish buying groceries, try to avoid making eye contact with the security guard. They can be downright dangerous.
   b. ??When we finish robbing the bank, try to avoid getting shot by the security guard. They can be downright dangerous.

Unlike lexical EAs, contextual ones often do not have a (monomorphemic) weaker, more 'neutral' counterpart:

(17) lexical EAs:
   a. *gigantic* $\succ$ *big*
   b. *excellent* $\succ$ *good*

(18) contextual EAs:
   a. *rich* $\succ$?
   b. *offensive* $\succ$?
   c. *dangerous* $\succ$?
   d. *obvious* $\succ$?

Contextual EAs are generally OK in the comparative and with *very*:

(19) a. Clyde is $\begin{cases} \text{richer} \\ \text{more offensive} \\ \text{more dangerous} \end{cases}$ than Floyd.

   b. Clyde is very $\begin{cases} \text{rich} \\ \text{offensive} \\ \text{dangerous} \end{cases}$.

In the right kind of discourse contextual EAs behave like lexical EAs in other respects.

2.4 Summary

- EDMs are a class of degree modifier compatible with EAs
- EAs come in two flavors: lexical and contextual
- diagnostics for EAs:
  - compatibility with EDMs
  - good for objecting to preceding discourse
  - susceptible to prosodic intensification
  - lexical EAs resist *very* and comparatives

## 3   Some Background on Scale Structure and Some Initial Hypotheses

3.1   *Scale Structure*

A possible position: EDMs are 'just' a species of endpoint-oriented degree modifier.

Assumptions about scale structure (Kennedy & McNally 2005, Rotstein & Winter 2001):

- adjectives come with scales; scales are made up of degrees
- antonymous adjectives operate on scales that are identical except for the direction of the ordering
- some scales include endpoints (and so are *closed*); others don't and so are *open*
    - closed: *full, closed, opaque* and their antonyms
    - open: *tall, deep, long* and their antonyms
- scales can also be partly closed—closed on one end but not the other
    - closed only on top: *straight, certain, pure*
    - closed only on bottom: *bent, dirty, ugly*

Graphically:

(20)

| tall, deep | short, shallow | dirty, bent | clean, straight | closed, opaque | open, transparent |
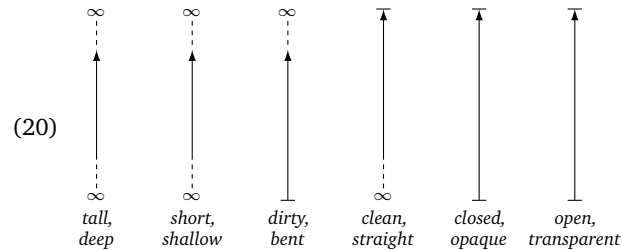
Endpoint-oriented degree modifiers are sensitive to this property of scale structure. *Perfectly* and *fully*, for example, require adjectives whose scales are closed on top:

(21)   a. closed scale:

$$\left\{\begin{array}{l}\text{perfectly}\\\text{fully}\end{array}\right\}\ \left\{\begin{array}{l}\text{full}\\\text{closed}\\\text{opaque}\end{array}\right\}$$

b. scale closed only on top:

$$\left\{\begin{array}{l}\text{perfectly}\\\text{fully}\end{array}\right\}\ \left\{\begin{array}{l}\text{certain}\\\text{safe}\\\text{pure}\end{array}\right\}$$

c. scale closed only on bottom:

$$??\left\{\begin{array}{l}\text{perfectly}\\\text{fully}\end{array}\right\}\ \left\{\begin{array}{l}\text{bent}\\\text{dirty}\\\text{ugly}\end{array}\right\}$$

d. open scale:

$$??\left\{\begin{array}{l}\text{perfectly}\\\text{fully}\end{array}\right\}\ \left\{\begin{array}{l}\text{tall}\\\text{deep}\\\text{long}\end{array}\right\}$$

Slightly requires adjectives whose scales are closed on bottom:

(22)   a. closed scale:

$$\text{slightly}\left\{\begin{array}{l}\text{full}\\\text{closed}\\\text{opaque}\end{array}\right\}$$

b. scale closed only on top:

$$??\text{slightly}\left\{\begin{array}{l}\text{certain}\\\text{safe}\\\text{pure}\end{array}\right\}$$

c. scale closed only on bottom:

$$\text{slightly}\left\{\begin{array}{l}\text{bent}\\\text{dirty}\\\text{ugly}\end{array}\right\}$$

d. open scale:

$$??\text{slightly}\left\{\begin{array}{l}\text{tall}\\\text{deep}\\\text{long}\end{array}\right\}$$

So are EDMs like these? Are they just endpoint-oriented degree modifiers?

No, or at least that's not all that's going on. For EDMs, the variation in judgments doesn't correspond to these distinctions:

(23) a. closed scale:
$$\left\{\begin{array}{l}\text{flat-out}\\\text{downright}\end{array}\right\}\left\{\begin{array}{l}{}^{??}\text{full}\\{}^{??}\text{closed}\\\text{opaque}\end{array}\right\}$$

    b. scale closed only on top:
$$\left\{\begin{array}{l}\text{flat-out}\\\text{downright}\end{array}\right\}\left\{\begin{array}{l}\text{certain}\\{}^{??}\text{safe}\\{}^{??}\text{pure}\end{array}\right\}$$

    c. scale closed only on bottom:
$$\left\{\begin{array}{l}\text{flat-out}\\\text{downright}\end{array}\right\}\left\{\begin{array}{l}{}^{??}\text{bent}\\{}^{??}\text{dirty}\\\text{ugly}\end{array}\right\}$$

    d. open scale:
$$\left\{\begin{array}{l}\text{flat-out}\\\text{downright}\end{array}\right\}\left\{\begin{array}{l}{}^{??}\text{tall}\\{}^{??}\text{deep}\\{}^{??}\text{long}\end{array}\right\}$$

3.2 *What About the Scale Structure of Extreme Adjectives?*

Another way to try to use these ideas—concentrate not on EDMs but on EAs *themselves*. What is their scale structure?

A natural intuition (Paradis 1997, 2001,Rett 2008b) is that extreme adjectives involve proper sub-scales of larger scales. Useful, but doesn't resolve question of endpoints.

HYPOTHESIS A: EAs have scales that are closed on top. Paradis (2001):[9]

> Extreme adjectives differ from scalar adjectives in that they do not represent a range on a scale. They represent the ultimate point of a scale.

Evidence in favor of this:

- resistance to comparatives (but see below)
- general intuition about meaning

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[9]This section may slightly misrepresent Paradis, since she does not explicitly make the same assumptions about scale structure.

- resistance to modification by *very*

On the other hand: it's not the case that adjectives with upper-closed scales resist comparatives:

(24) a. This glass is fuller than that one.
    b. Skydiving is safer than skiing.

Also, this would suggest (25) should be as odd as (26):

(25) a. Godzilla is gigantic, but he could be bigger.
    b. His fencing is excellent, but it could be better.

(26) a. #My glass is full, but it could be fuller.   (Kennedy 2007)
    b. #This line is straight, but you can make it straighter.

It is true that many EAs occur with modifiers such as *totally*, which typically occur with closed-scale adjectives, but in fact these modifiers also have another reading that means something close to 'very' that confounds the experiment:

(27) This is totally
$$\left\{\begin{array}{l}\text{full}\\\text{safe}\\\text{dirty}\\{}^{\%}\text{deep}\end{array}\right\}.$$

So: it is probably the case that some EAs involve upper-closed scales, but probably not all of them.

HYPOTHESIS B: EAs have scales that are closed on bottom (Rett 2008a,b).[10]

Strongest evidence for this comes from certain entailment patterns. Generally, lower-bound adjectives behave like this:

(28) a. The floor is dirtier than the table.
      entails: The floor is dirty.
    b. The floor is as dirty as the table.
      entails: The floor is dirty.

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[10]This section may also slightly misrepresent Rett, since she makes her proposal about extreme adjectives offhandedly in a single paragraph of her dissertation.

(29)   a. Floyd is uglier than Clyde.
       entails: Floyd is ugly.
       b. Floyd as ugly as Clyde.
       entails: Floyd is ugly.

EAs often behave similarly, to the extent the test can be run:

(30)   a. Godzilla is more gigantic than Mothra.
       entails: Godzilla is gigantic.
       b. Godzilla is as gigantic as Mothra.
       entails: Godzilla is gigantic.

(31)   a. My dog is more gorgeous than your ferret.
       entails: My dog is gorgeous.
       b. My dog is as gorgeous as your ferret.
       entails: My dog is gorgeous.

This also has a certain intuitive appeal, since it makes sense to say that a proper subscale of another scale can be closed on bottom, even if the larger scale is open.

But:

(32)   a. ??Godzilla is slightly gigantic.
       b. ??My dog is slightly gorgeous.
       c. ??Clyde is slightly terrible.
       d. ??San Francisco is slightly magnificent.

So: some EAs may well have scales that are closed on bottom, but it's not obvious they all do.

A CONCLUSION   I think both of these views are essentially right about the intuitions, in different ways. But the essential question of what an EA is—and what is extreme about one—is not purely about open vs. closed scales.

4   The proposal

4.1   *Some Empirical and Analytical Intuitions*

What do we want a theory of EAs to reflect? EAs . . .

- . . . may involve scales closed on bottom, but not on top (in some sense)
- . . . may involve scales closed on top, but not on bottom (in some sense)
- . . . may not necessarily have any particular scale structure
- . . . involve sub-scales
- . . . resist comparatives, except when they don't
- . . . license entailments to their more neutral counterparts, if there are any (*gigantic* entails *big*; *horrible* entails *bad*)
- . . . are useful for objecting to something about the preceding discourse

Two additional, more subtle intuitions which will be useful.

CONVEYING INDIFFERENCE   EAs often signal indifference to the precise degree involved:[11]

(33)   A: I just bought a helper monkey. He is gigantic.
       B: How big precisely?
       A: What?! You're in the market for helper monkeys? What's your deal?

Here, A has clearly indicated that the monkey is (a) extremely large, (b) so large that for the purposes of the conversation, the precise size shouldn't matter. B is acting weird.

Another example:

(34)   A: It would be nice to live in San Francisco. The cost of living there is absolutely absurd, though.
       B: How absurd is it, exactly?
       A: Seriously, what's your deal?

Importantly, none of this is about *genuine* indifference. If A is considering moving to San Francisco, A no doubt cares how expensive it is. But in using an EA, A has indicated an expectation that *for the purposes of the discourse* the exact degree of expensiveness is not important.

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[11]This was pointed out to me in especially clear terms by Anne-Michelle Tessier.

DISCOURAGING HYPERBOLE   EAs can often be used hyperbolically. EDMs can be a means of discouraging addressees from treating a claim as hyperbolic:[12]

(35)   a. My helper monkey is gigantic.

     b. My helper monkey is $\begin{Bmatrix} \text{straight-up} \\ \text{downright} \end{Bmatrix}$ gigantic.

4.2 *Contextual Domain Restrictions*

How to capture these intuitions?

The speedometer again:

- one zone of indifference has to do with precision, the granularity of the scale[13]
- the other zone of indifference has to do with going off the scale entirely—passing a point beyond which further distinctions aren't at issue

One way to represent what interlocutors—and the semantics—are paying attention to is *contextual domain restrictions*.

(36)   Everyone had a good time.

Everyone doesn't quantify over all people everywhere, but only the salient ones.

Can be indicated explicitly with a resource domain variable C, whose value is set by context (Westerståhl 1985, von Fintel 1994):

(37)   a. Everyone$_C$ had a good time.
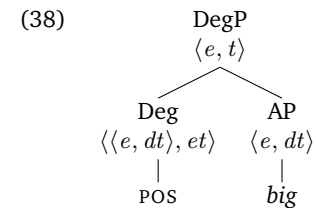   b. $\forall x[[x \in C \wedge x$ is a person$] \rightarrow x$ had a good time$]$

This strategy is useful in quantification over many different sorts of objects: individuals, events, situations, worlds, times...

...degrees? Should quantification over degrees also be made sensitive to a domain variable? What if C can contain degrees?

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[12]This emerged during a conversation with Jan Anderssen.

[13]This way of thinking about imprecision—in terms of scale granularity—has been developed recently by Sauerland & Stateva (2007). The general idea is suggested in Kennedy & McNally (2005).

- in any context, there is a level of precision or granularity that is being assumed (Lasersohn 1999, Sauerland & Stateva 2007)
  - C contains the degrees that count as the 'units'
  - we don't care about degrees between[14] those in C, just as we don't care about speeds between the lines on the speedometer
- in any context, there is a sense of where reasonable boundaries on scales lie
  - C contains the range of degrees the context treats as plausible candidates
  - possible to go 'off the dial'
  - just as we don't care (much) about distinctions in speeds beyond the range of the speedometer, we don't care (much) about degrees beyond those in C

4.3 *Lexical Extreme Adjectives*

Assumptions about extended AP (Kennedy 1997, Abney 1987, Corver 1990, Grimshaw 1991, among others; cf. Bresnan 1973, Bhatt & Pancheva 2004, Heim 2000):[15]

(38)

                DegP
                $\langle e, t \rangle$

       Deg   AP
  $\langle \langle e, dt \rangle, et \rangle$ $\langle e, dt \rangle$
      | |
     POS   *big*

The POS morpheme (Kennedy 1997, Kennedy & McNally 2005, Kennedy 2001, 2007) occurs with positive (morphologically unmarked, non-comparative) adjectives and imposes the requirement of exceeding a contextually provided standard associated with a scale:[16]

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[14]There is an analytical choice to be made here that I'm glossing over about whether the degrees in C are points, with intermediate degrees between them, or intervals, each containing intermediate degrees.

[15]For discussion of various analytical alternatives in this domain, see von Stechow (1984), Rullmann (1995) and Kennedy (1997).

(39)　$[\![\,\mathrm{POS}\,]\!] = \lambda a_{\langle e,\,dt\rangle}\lambda x\,.\,\exists d[a(x)(d)\wedge d\geq standard(scale(d))]$

Denotation of an ordinary adjective:[17]

(40)　$[\![\,big_C\,]\!] = \lambda x\lambda d\,.\,d\in C\wedge x$ is d-big

The adjective bears the domain variable C, and its interpretation is relativized to it. Thus *big* relates an individual and that individual's salient degree of bigness.[18]

Two unusual things:

- the domain restriction
- the fact that it is on the adjective rather than the degree head, where quantification is expressed

So:

(41)　a. My monkey is [$_{\mathrm{DegP}}$ POS [$_{\mathrm{AP}}$ big$_C$]].
　　b. $[\![\,\mathrm{POS}\,]\!]\,([\![\,big_C\,]\!])$

$$= \lambda x\,.\,\exists d\left[\begin{array}{l}[\![\,big_C\,]\!]\,(x)(d)\wedge\\ d\geq standard(scale(d))\end{array}\right]$$

$$= \lambda x\,.\,\exists d\left[\begin{array}{l}d\in C\wedge x\text{ is }d\text{-big}\wedge\\ d\geq standard(scale(d))\end{array}\right]$$

Thus my monkey is big iff my monkey has a degree of bigness that's salient and exceeds the standard.

Lexical EAs involve a requirement that a degree exceed any of the contextually provided relevant degrees:[19]

(42)　$[\![\,gigantic_C\,]\!] = \lambda x\lambda d\,.\,d > max(C)\wedge x$ is d-big

The result:

(43)　a. My monkey is [$_{\mathrm{DegP}}$ POS [$_{\mathrm{AP}}$ gigantic$_C$]].
　　b. $[\![\,\mathrm{POS}\,]\!]\,([\![\,gigantic_C\,]\!])$

$$= \lambda x\,.\,\exists d\left[\begin{array}{l}[\![\,gigantic_C\,]\!]\,(x)(d)\wedge\\ d\geq standard(scale(d))\end{array}\right]$$

$$= \lambda x\,.\,\exists d\left[\begin{array}{l}d > max(C)\wedge x\text{ is }d\text{-big}\wedge\\ d\geq standard(scale(d))\end{array}\right]$$

Thus my monkey is gigantic iff my monkey has a degree of bigness that both exceeds the standard and is larger than any salient bigness degree.

Because *gigantic* is on the same scale as *big*, and requires exceeding the same standard, the inference that anything that is *gigantic* is also *big* will go through.

4.4　*What Does This Accomplish?*

Reflects:

- inference from lexical EA to neutral adjective
- notion of going off the scale
- indifference intuition: different degrees of giganticness are all inherently above any we're bothering to discriminate
- intuition about being bounded on top: every degree of giganticness is an upper bound to the scale of relevant bigness degrees
- intuition about bottom of the scale: all degrees on the giganticness portion of the scale are effectively giganticness degrees[20]
- subscale intuition

This also helps explain the resistance of lexical EAs to comparatives. If both adjectives in the comparative are lexically extreme, they will

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[16]In fact, the representation of the relation between d and the standard is a bit too simple, since in fact for lower-closed-scale adjectives the standard must be exceeded and for upper-closed-scale adjectives it must be matched. See Kennedy (2007) for details and an account.

[17]The requirement $d\in C$, and the corresponding one for EAs below, should probably be a presupposition. I've left this out for simplicity.

[18]I am assuming a 6 foot tall person is also tall to every degree below 6 feet.

[19]In fact, what is necessary here is not the maximal degree in C—it would probably not even be possible to determine one—but rather the maximum degree on the relevant scale in C. One could replace $max(C)$ with $max\{d' : d'\in scale(d)\wedge d'\in C\}$. I will systematically help myself to this sloppy shortcut.

[20]Depending on what one assumes about C, this will likely mean that the subscale associated with an extreme adjective will not be closed on bottom, though.

both want to be outside the domain of relevant degrees—which is contrary to what comparing them requires.

Importantly, this does not hard-wire into the semantics that EAs can't be compared. A sketch:

(44) $\llbracket \textit{more} \rrbracket = \lambda a_{\langle e,\, dt \rangle} \lambda b_{\langle dt \rangle} \lambda x\ .\ max\{d : a(x)(d)\} >$
$$max\{d' : b(d')\}$$

(45) $[_{DegP}\ \text{more}\ [_{AP}\ \text{gigantic}_C]]\ [\lambda d'\ \text{than Mothra}\ \text{is } d'\text{ gigantic}_C]$

    a. $\llbracket \lambda d'\ \textit{than Mothra}\ \textit{is } d'\textit{ gigantic}_C \rrbracket$
        $= \lambda d'\ .\ d' > max(C) \wedge \text{Mothra is } d'\text{-big}$

    b. $\llbracket \textit{more} \rrbracket (\llbracket \textit{gigantic}_C \rrbracket)(\llbracket \textit{than Mothra} \rrbracket)$

        $= \lambda x\ .\ max\{d : \llbracket \textit{gigantic}_C \rrbracket (x)(d)\} >$
$$max\{d' : \llbracket \textit{than Mothra} \rrbracket (d')\}$$

        $= \lambda x\ .\ max\{d : d > max(C) \wedge x \text{ is } d\text{-big}\} >$
$$max\{d' : d' > max(C) \wedge \text{Mothra is } d'\text{-big}\}$$

There is, however, be a deeper problem with sentences like (46):

(46) a. #The Empire State Building is bigger than Godzilla is gigantic.
    b. #The Empire State Building is more gigantic than Godzilla is big.

(47) a. $\llbracket \lambda d'\ \textit{than Godzilla is } d'\textit{-big}_C \rrbracket$
        $= \lambda d'\ .\ d' \in C \wedge \text{Godzilla is } d'\text{-big}$

    b. $\llbracket \textit{more} \rrbracket (\llbracket \textit{gigantic}_C \rrbracket)(\llbracket \lambda d'\ \textit{than Godzilla is } d'\textit{-big}_C \rrbracket)$
        $= \lambda x\ .\ max\{d : d > max(C) \wedge x \text{ is } d\text{-big}\} >$
$$max\{d' : d' \in C \wedge \text{Godzilla is } d'\text{-big}\}$$

The problem is that the first maximal degree is above any in C, and the second is in it—so such a sentence could never be true (irrespective of how big anyone is.)

This set-up also predicts a metalinguistic use (Barker 2002)—can be used to manipulate the contents of C itself.

4.5 Contextual EAs and EDMs

Starting point: *absolutely*. It is cross-categorial, including an adnominal use (Horn 1972):

(48) Absolutely everyone had a good time.

One way of understanding the difference between (48) and (49) is in how wide the domain of quantification should be:

(49) Everyone had a good time.

In this use, *absolutely* might indicate that we should expand C to include more people than it otherwise would. Maybe it has a similar domain-expanding use for degrees?[21]

With lexical EAs:

(50) a. Godzilla is absolutely gigantic.
    b. Your monkey is absolutely gorgeous.

Contextual EAs:

(51) a. Clyde is absolutely dead.
    b. Floyd is absolutely drunk.

With non-EAs:

(52) a. The bus is absolutely full.
    b. The door is absolutely closed.

What to make of this?

- with lexical EAs, hard to tell, but probably a strengthening use, like *very*
- with contextual EAs, the effect seems to be to mark them as extreme
- elsewhere the effect seems to be to boost precision (Pinkal 1995, Lasersohn 1999, Kennedy 2007, Sauerland & Stateva 2007)
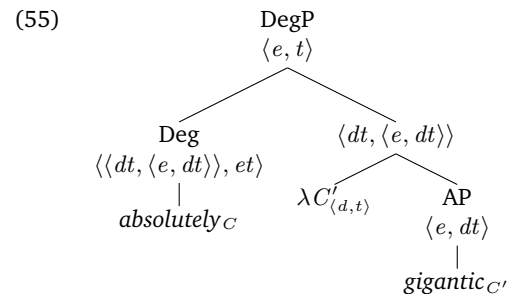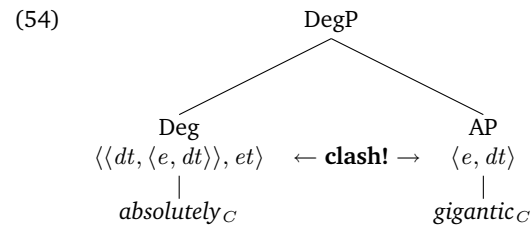
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[21]Using the Kadmon & Landman (1993) term 'domain-widening' may be slightly misleading in this context, given how it will be implemented.

Expanding the domain can accomplish all of these things, depending on how it is expanded:

- expanded to include higher degrees:
    - triggers extreme interpretation of contextual EAs
    - strengthens lexical EAs
- expanded to include 'smaller' degrees (more degrees between existing degrees): increases precision

To affect the contextual domain restriction the adjective uses, will bind it:

(53) $[\![\,absolutely_C\,]\!]$

$$= \lambda f_{\langle dt,\,\langle e,\,dt\rangle\rangle}\lambda x\;.\;\exists C' \exists d \left[\begin{array}{l} C' \supset C \wedge f(C')(x)(d) \wedge \\ d \geq standard(scale(d)) \end{array} \right]$$

(54)
$$\text{DegP}$$
$$\begin{array}{cc} \text{Deg} & \text{AP} \\ \langle\langle dt,\langle e,dt\rangle\rangle, et\rangle \;\;\leftarrow \textbf{clash!} \rightarrow\;\; \langle e, dt\rangle \\ | & | \\ absolutely_C & gigantic_C \end{array}$$

(55)
$$\text{DegP}$$
$$\langle e, t\rangle$$
$$\begin{array}{cc} \text{Deg} & \langle dt, \langle e, dt\rangle\rangle \\ \langle\langle dt,\langle e,dt\rangle\rangle, et\rangle & \\ | & \lambda C'_{\langle d,t\rangle} \qquad \text{AP} \\ absolutely_C & \langle e, dt\rangle \\ & | \\ & gigantic_{C'} \end{array}$$

What *absolutely* does, then, is render the domain of the adjective either more fine-grained or wider.

A lexical EA:

(56) $[\![\,absolutely_C\,]\!]\,([\![\,\lambda C'\;gigantic_{C'}\,]\!])$

$$= \lambda x\;.\;\exists C'\exists d \left[\begin{array}{l} C' \supset C \wedge \\ [\lambda C'\;.\;[\![\,gigantic_{C'}\,]\!]](C')(x)(d) \wedge \\ d \geq standard(scale(d)) \end{array} \right]$$

$$= \lambda x\;.\;\exists C'\exists d \left[\begin{array}{l} C' \supset C \wedge \\ d > max(C) \wedge x \text{ is } d\text{-big} \wedge \\ d \geq standard(scale(d)) \end{array} \right]$$

No pragmatic reason for using a more fine-grained C rather than one with a higher maximum.

Contextual EA (for *dead*, strengthening upward is limited because the adjective is closed on top):

(57) $[\![\,absolutely_C\,]\!]\,([\![\,\lambda C'\;dead_{C'}\,]\!])$

$$= \lambda x\;.\;\exists C'\exists d \left[\begin{array}{l} C' \supset C \wedge d \in C \wedge \\ x \text{ is } d\text{-dead} \wedge \\ d \geq standard(scale(d)) \end{array} \right]$$

Because there is a limit to how dead a person can be, this is most naturally taken to use a more fine-grained C and yields a precision reading.

This predicts that adjectives that are not easily taken to be extreme or imprecise would be odd with *absolutely*:

(58) a. ??absolutely informed
     b. ??absolutely present

What blocks (59)?:

(59) a. ??absolutely big
     b. ??absolutely pretty

Usual answer: these involve open scales, and *absolutely* wants ones with a maximum. Alternative, given denotation above: These are blocked pragmatically by the availability of lexical EAs (e.g. *huge*, *gorgeous*) that do the same work more conventionally, simply, and unambiguously.[22]

---

[22]Kennedy (2007) actually proposes an interpretation economy principle to which this fact might be assimilated—but standard Gricean assumptions should suffice here.

Prediction is that open scale adjectives with no lexical EA counterparts should be good with *absolutely*. They are—they get contextual EA readings.

4.6 Other EDMs

Many EDMs may be simpler than *absolutely*, and more specialized for extending the contextual degree domain upward.

(60) $[\![\,downright_C\,]\!]$

$$= \lambda f_{\langle dt,\,\langle e,\,dt\rangle\rangle}\lambda x\,.\,\exists C'\exists d \begin{bmatrix} max(C') > max(C)\ \wedge \\ f(C')(x)(d)\ \wedge \\ d \geq standard(scale(d)) \end{bmatrix}$$

This specifically requires expanding the contextual domain upward.

For lexical EAs, the effect is to boost the degree even higher:

(61) $[\![\,downright_C\,\lambda C'\,gigantic_{C'}\,]\!]$

$$= \lambda x\,.\,\exists C'\exists d \begin{bmatrix} max(C') > max(C)\ \wedge \\ [\![\,\lambda C'\,gigantic_{C'}\,]\!]\,(C')(x)(d)\ \wedge \\ d \geq standard(scale(d)) \end{bmatrix}$$

$$= \lambda x\,.\,\exists C'\exists d \begin{bmatrix} max(C') > max(C)\ \wedge \\ d > max(C')\ \wedge\ x\text{ is }d\text{-tall}\ \wedge \\ d \geq standard(scale(d)) \end{bmatrix}$$

For non-lexical EAs, the effect is to mark them as extreme—to overtly indicate that they count as EAs in this discourse:

(62) $[\![\,downright_C\,\lambda C'\,dangerous_{C'}\,]\!]$

$$= \lambda x\,.\,\exists C'\exists d \begin{bmatrix} max(C') > max(C)\ \wedge \\ d \in C'\ \wedge\ x\text{ is }d\text{-dangerous}\ \wedge \\ d \geq standard(scale(d)) \end{bmatrix}$$

No need to independently stipulate that d must be in $C' - C$, because such a reading would be identical to the interpretation of the adjective alone and therefore is pragmatically blocked.

So, two key ideas:

- EDMs manipulate domain scales

- some regular As have scales that often have their top parts excluded from the contextually provided degree domain— these are contextual EAs

4.7 How Might a Discourse Unfold?

In most contexts, we don't seriously entertain the possibility of dangerousness. This (63) might seem a bit out of the blue:

(63) Clyde is dangerous.

Two ways for a listener to react:

- play along and simply introduce non-zero dangerous degrees into C
- assume the speaker is exaggerating, being hyperbolic in some way: 'surely you don't mean he's *dangerous* dangerous... maybe he's just unnervingly eccentric'

How might a speaker discourage the exaggeration interpretation?:

(64) Clyde is downright dangerous.

Explicitly indicates that contextual degree domain should be expanded. This is the anti-hyperbolic intuition from section 4.1.

What if there *were* dangerous degrees already in the discourse? Then (64) would widen the domain to include even higher dangerous degrees.

Upper-closed-scale adjectives:

(65) a. The solution is obvious.
b. The solution is downright obvious.

Discourse may or may not have had obviousness degrees in it. If standard degree is not already present in C, asserting (65a) would again leave the listener with the option of assuming hyperbole. Again, (65b) cuts off that option.

What about an open-scale adjective like *tall*?

(66) a. Clyde is tall.
b. ??Clyde is downright tall.

Any discourse has degrees of tallness in it, including the standard for tallness, so (66b) is odd—there is no reason to widen C.

(67) $^{??}$The door is downright closed.

Weird because it's very rarely the case that we fail to entertain the complete scale of opening and closing.

4.8 *A Few Observations About* Very

One fact about *very* in need of explanation (already discussed):

(68) a. $^{??}$very gigantic
      b. $^{??}$very excellent
      c. $^{??}$very phenomenal

Another is the contrast in (69):

(69) a. Floyd got downright drunk—very drunk.
      b. $^{\#}$Floyd got very drunk—downright drunk.

One might take (69) to indicate that *very drunk* is stronger than *downright drunk*. But it seems to be weaker than *gigantic*, which should work like *very drunk*:

(70) a. That building is very big—gigantic, in fact.
      b. $^{\#}$That building is gigantic—very big, in fact.

How to deal with this?

The fact in (69) just shows that *downright* modifies C and *very* does not—modifying C first is the more sensible thing to do. So, as (70) reflects, *very* is not actually stronger than EDMs or lexical EAs. It seems to operate *within* the contextually supplied domain:

(71) a. $[\![very_C]\!] = \lambda a_{\langle e, dt \rangle} \lambda x$.
          $most \Big(\lambda d' \Big[\begin{matrix} d' \in C \wedge \\ d' \geq standard(scale(d)) \end{matrix} \Big] \Big) \Big(\lambda d' \Big[a(x)(d') \Big] \Big)$
      b. $[\![very_C \ tall_C]\!] = \lambda x$.
          $most \Big(\lambda d' \Big[\begin{matrix} d' \in C \wedge \\ d' \geq standard(scale(d)) \end{matrix} \Big] \Big) \Big(\lambda d' \Big[\begin{matrix} d' \in C \wedge \\ x \text{ is } d'\text{-big} \end{matrix} \Big] \Big)$

This requires that to be *very tall*, one must be tall to most of the salient degrees above the standard.

This is weaker than *gigantic* alone or a contextual EA with an EDMs because these require actually *exceeding* the domain, not being near the top of it.

Probably less deep reason—any claim like this would come out false:

(72) $[\![very_C \ gigantic_C]\!] = \lambda x$.
      $most \Big(\lambda d' \Big[\begin{matrix} d' \in C \wedge \\ d' \geq standard(scale(d)) \end{matrix} \Big] \Big) \Big(\lambda d' \Big[\begin{matrix} d' > max(C) \wedge \\ x \text{ is } d'\text{-big} \end{matrix} \Big] \Big)$

Hence the oddness of (68).

4.9 *What Else Might Be Going On?*

Are all EDMs simply about domain modifying? Maybe. But in some cases it feels like something more might be going on as well...

- *straight-up* has a flavor of asserting honesty
- some seem to suggest obviousness, or perhaps clarity (Barker & Taranto 2003, Taranto 2003): *out-and-out, outright*
- *balls-out*?? seriously weird... 'brazenness', maybe?

5   Nominal Gradability

Many EDMs are cross-categorial, and occur adnominally. All of those derived from prepositions do:
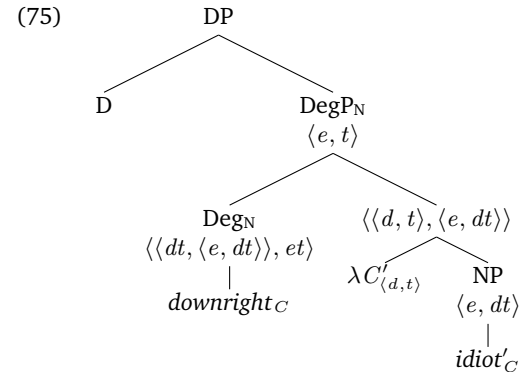
(73) a(n) $\begin{cases} \text{flat-out} \\ \text{full-on} \\ \text{out-and-out} \\ \text{downright} \\ \text{outright} \\ \text{straight-up} \\ \text{balls-out} \end{cases}$ idiot

This form of *downright* may have been the earlier one (Méndez-Naya 2008).

At least two other EDMs have adnominal counterparts:

(74) a(n) $\left\{\begin{array}{l} \text{absolute} \\ \text{positive} \end{array}\right\}$ idiot

It may be the case that there is in fact a direct analogue to the adjectival Deg position in DP, with similar semantics (Morzycki 2005, to appear). These may occupy it, along with e.g. *complete, real, true*:

(75)

```
                    DP
                  /    \
                 D    DegP_N
                      ⟨e, t⟩
                     /      \
                Deg_N      ⟨⟨d, t⟩, ⟨e, dt⟩⟩
          ⟨⟨dt, ⟨e, dt⟩⟩, et⟩      /        \
                 |          λC'_⟨d,t⟩        NP
            downright_C                    ⟨e, dt⟩
                                              |
                                          idiot'_C
```

If scalar nouns are semantically more or less adjectives, all this would work:

(76) a. $⟦\,idiot\,⟧ = \lambda x \lambda d\ .\ x$ is d-idiotic

b. $⟦\,downright_C\ \lambda C'\ idiot_{C'}\,⟧$

$= \lambda x \begin{bmatrix} max(C') > max(C)\ \wedge \\ d \in C' \wedge x \text{ is } d\text{-idiotic} \wedge \\ d \geq standard(scale(d)) \end{bmatrix}$

But 'scalar noun' isn't such a clear notion, and lots of nouns seem to need to be 'scalar' in this way. This worrying. Has this shed light on this issue?

6 Final Remarks

Summary:

- EDMs are a distinct natural class, and an open one

- EAs come in two flavors, and are worth recognizing as a class of their own
- a theory is needed of 'extremeness' itself
- contextual domain restrictions for degrees as an explanation
- EAs involve going 'off the scale', and EDMs acknowledge having done so

Some larger issues/questions:

- cross-linguistic variation
- expressive meaning
- domain restrictions
- degree modification across categories

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