Today's Talk

- Analysis of facts in (1) and (2) (and some preliminary remarks on (3))
- Argument for connection between them
  - Derive from restrictions on comparison to a standard whose location is arbitrary
  - Implications for scales, standards, vagueness

Slightly/a little/a bit

(4) a. The rug is slightly/a little/a bit dirty
   b. The towel is slightly/a little/a bit wet
   c. That neighborhood is slightly/a little/a bit dangerous

(5) a. John is slightly/a little/a bit tall
   b. The lake is slightly/a little/a bit deep
   c. The rod is slightly/a little/a bit long

(6) a. The rug is slightly/a little/a bit clean
   b. The towel is slightly/a little/a bit dry
   c. That neighborhood is slightly/a little/a bit safe

Very

(7) a. The rug is very dirty
   b. The towel is very wet
   c. That neighborhood is very dangerous

(8) a. John is very tall
   b. The lake is very deep
   c. The rod is very long

(9) a. The rug is very clean
   b. The towel is very dry
   c. That neighborhood is very safe

Three Assymetries

(1) a. The rug is a slightly/a little/a bit dirty
   b. John is a slightly/a little/a bit tall

(2) a. Red wine isn't exactly healthy
   b. Red wine is exactly healthy

(3) a. John doesn't have much money
   b. John has much money

Slightly

(4) a. The rug is slightly/a little/a bit dirty
   b. The towel is slightly/a little/a bit wet
   c. That neighborhood is slightly/a little/a bit dangerous

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   b. The lake is slightly/a little/a bit deep
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   b. The towel is very dry
   c. That neighborhood is very safe
Comparatives

(10) a. The rug is slightly dirtier than the floor
   b. The towel is a slightly wetter than the rag
   c. That neighborhood is slightly more dangerous than this one

(11) a. John is slightly taller than Fred
   b. The lake is slightly deeper than the pond
   c. The rod is slightly longer than the box

(12) a. The rug is slightly cleaner than the floor
   b. The towel is slightly drier than the rag
   c. That neighborhood is slightly safer than this one

Excessives

(13) a. The rug is slightly too dirty
   b. The towel is a slightly too wet
   c. That neighborhood is slightly too dangerous

(14) a. John is slightly too tall
   b. The lake is slightly too deep
   c. The rod is slightly too long
   □ Cf. slightly long ‘slightly too long’

(15) a. The rug is slightly too clean
   b. The towel is slightly too dry
   c. That neighborhood is slightly too safe
   □ Cf. slightly dry ‘slightly too dry’

“Excessive” interpretation

(16) Our rig holds Kriss, P90, and UMP mags perfectly. MP5 mags will sit a little deep, but we can fit pockets with an internal spacer to sit them at the perfect height.
   [http://www.originalsoegear.com/smgrig.html]

(17) However, if you end up with a less-than-perfect joint, you can cope with this situation by recutting the joint (you did cut the board slightly long, right?)
   [http://www.woodbin.com/misc/cope_molding.htm]

(18) You can make these up to 5 days ahead, and they reheat beautifully. If they’re a bit dry, just stir in water. (Prevention, 61(11), p. 134, 2009; sourced from COCA, Davies 2008–)

Russian -ovat

(19) a. grijaznovatyj ‘slightly dirty’
   b. vlažnovatyj ‘slightly wet’

(20) a. vysokovatyj ‘slightly too tall’
   b. dlínovatyj ‘slightly too long’

(21) a. *čistovatyj ‘slightly (too) clean’
   b. suxovatyj ‘slightly too dry’
   (Kagan & Alexeyenko 2010)

Scale Structure

<table>
<thead>
<tr>
<th>Slightly/a bit</th>
<th>Slightly/a little/a bit</th>
<th>per ’000 Adj</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower closed/minimum standard (partial)</td>
<td><em>dirty, wet, dangerous, etc.</em></td>
<td>12.5</td>
</tr>
<tr>
<td>Upper closed/maximum standard (total)</td>
<td>clean, dry, safe, etc.</td>
<td>0.6</td>
</tr>
<tr>
<td>Open/contextual standard (relative)</td>
<td>tall, clean, long, etc.</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Frequencies

Source: COCA, Davies 2008–
Rotstein & Winter 2004

- Slightly Adj: an interval, open at one end, of some arbitrary length, at the beginning of the denotation of Adj on scale A
  - Minimum standard (partial): felicitous
  - Maximum standard (total): infelicitous when Adj point-denoting (default)
    - Slightly closed = 'closed but not completely closed’
  - Relative: ??

Kennedy 2007

- Slightly as diagnostic for scalar minimum
  - Lower-closed scale (dirty): felicitous
  - Upper-closed scale (clean): infelicitous
  - Open scale (tall): infelicitous
- Explanation for felicity with comparative, too: derived scale
  - Clean
  - Cleaner than the floor

Frequencies

<table>
<thead>
<tr>
<th>Slightly/a little/a bit Adj per ‘000 Adj</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower closed scale</td>
</tr>
<tr>
<td>dirty, wet, bumpy, rough, dangerous,</td>
</tr>
<tr>
<td>bent, crooked, uncertain</td>
</tr>
<tr>
<td>Upper closed scale</td>
</tr>
<tr>
<td>clean, dry, flat, smooth, safe, straight,</td>
</tr>
<tr>
<td>certain</td>
</tr>
<tr>
<td>Open scale</td>
</tr>
<tr>
<td>tall, long, big, expensive, deep, rich,</td>
</tr>
<tr>
<td>wide, strong, thick, short, small,</td>
</tr>
<tr>
<td>inexpensive, cheap, shallow, poor,</td>
</tr>
<tr>
<td>narrow, weak, thin</td>
</tr>
<tr>
<td>Totally closed scale</td>
</tr>
<tr>
<td>full, open, opaque, empty, closed,</td>
</tr>
<tr>
<td>transparent</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Source: COCA, Davies 2008</td>
</tr>
</tbody>
</table>

Kennedy 2007

- Slightly with open scale (relative) adjectives on excessive reading must also involve coercion to interpretation w.r.t. lower closed scale
  - Covert too?
- Slightly with totally closed scales predicted to be felicitous (cf. Sassoon 2011):
  - (22) a. ??The glass is slightly full
  - b. ??The glass is slightly empty

- Unwelcome conclusions about scale structure for relative adjectives:
  - tall: lower open/bounded
  - taller than Fred: lower closed
  - too tall: lower closed
  - In fact, no evidence for lower closed vs. lower bounded distinction beyond occurrence with slightly, type of standard

An alternative characterization

- Slightly sensitive to nature of standard of comparison, not (only) to structure of scales
  - Felicitous with certain types of standards, not others
- Scalar endpoints may — but do not necessarily — provide standard
  - Corollary: No need to posit lower closed/lower bounded distinction → simpler typology of scale structures
Kagan & Alexeyenko 2010

- Distinct types of standard
  - Scalar minimum
  - Scalar maximum
  - Distributional: relative to comparison class
    - (23) John is tall (for an 8-year-old, a jockey, an adult man)
  - Functional: maximum degree compatible with requirements of situation (cf. Bylinina 2011)
    - Also available for bare (unmodified) adjective

Analysis

- Adjectives denote measure functions (Kennedy 2007)
  - [[dirty]] = $\lambda x.\mu_{\text{dirtiness}}(x)$
  - [[clean]] = $\lambda x.\mu_{\text{cleanness}}(k)$
  - [[long]] = $\lambda x.\mu_{\text{length}}(x)$

- Degree modifiers map adjective denotations to properties of individuals
  - [[slightly]] = $\lambda P.\langle P \rangle \lambda x.\mu_{\text{dirtiness}}(x) > \text{Std}_{\text{dirty}} \wedge \text{diff}(\mu_{\text{dirtiness}}(x), \text{Std}_{\text{dirty}}) < d_c$
  - $\text{Std}_{\text{dirty}} = \min(\text{Stddirty})$
  - $\text{Stddirty}$
  - $\text{Stddirty}$
  - $\text{Slightly dirty}$
  - $\text{Stddirty}$

- Degree modifiers map adjective denotations to properties of individuals
  - [[slightly clean]] = $\lambda P.\langle P \rangle \lambda x.\mu_{\text{cleanness}}(x) > \text{Std}_{\text{clean}} \wedge \text{diff}(\mu_{\text{cleanness}}(x), \text{Std}_{\text{clean}}) < d_c$
  - $\text{Stdclean} = \max(\text{Stdclean})$
  - $\text{Stdclean}$

Minimum/maximum standard

- [[slightly dirty]] = [[slightly]] ([[dirty]]) = $\lambda x.\mu_{\text{dirtiness}}(x) > \text{Std}_{\text{dirty}} \wedge \text{diff}(\mu_{\text{dirtiness}}(x), \text{Std}_{\text{dirty}}) < d_c$
  - $\text{Std}_{\text{dirty}} = \min(\text{Stddirty})$
  - $\text{Stddirty}$
  - $\text{slightly dirty}$

Comparative

- Maps measure functions to measure functions
  - [[taller than dCOMP]] = $\lambda x.\mu_{\text{length}}(x) > \text{Std}_{\text{length}} \wedge \text{diff}(\mu_{\text{length}}(x), \text{Std}_{\text{length}}) < d_c$
  - $\text{Std}_{\text{length}} = \max(\text{Stdl})$

Relative adjective

- [[slightly tall]] = [[slightly]] ([[tall]]) = $\lambda x.\mu_{\text{height}}(x) > \text{Std}_{\text{tall}} \wedge \text{diff}(\mu_{\text{height}}(x), \text{Std}_{\text{tall}}) < d_c$
  - $\text{Std}_{\text{tall}} = \min(\text{Stdtall})$
  - $\text{Stdtall}$
  - $\text{slightly tall}$
What is wrong with distributional standards?

- Standards that support slightly can be reduced to single non-arbitrary point:
  - Scalar minimum: Minimum point on scale
  - Functional: Maximum degree compatible with requirements of situation

- What are distributional standards?

  (29) John is tall (for an X)
  - Greater than average height (for an X) – but by how much?
  - Arbitrary – multiple equally acceptable choices
    - Cf. contextualist, supervaluationist theories of vagueness (Raffmann 1996; Kamp 1975); probabilistic view (Laslier 2011)

Small distances cannot be felicitously measured from an origin point whose location is arbitrary

John is slightly tall

Large distances do not present the same problem

John is very tall

Other types of standards

- Deviation-based
  (30) a. John is slightly overweight/underweight
  b. The train arrived slightly early/late

- Norm/expectation-based (=functional?)
  (31) My son is a bit tall for his age
  (32) Did you ever consider maybe you’re a bit fat?
  (33) Costa was in his late forties, and the years showed around his middle but not in the thick dark hair that he left cut just slightly long. (Linda Grant, Love nor Money, 2002)
  (34) …the shelves were looking a bit empty cf. The theater is empty tonight (Kennedy 2007)

Relative adjectives and minimum standards

- If relative adjectives (tall) make use of lower-closed scales, why can’t scalar minimum serve as standard, as it does for absolute adjectives (clean, dirty)?

  Toledo & Sassoon (2011): Two classes denote different types of properties

  - Relative (tall): Individual level - comparison class over individuals
  - Absolute (clean, dirty): Stage level – comparison classes over stages of the same individual

  For relative class, scalar minimum as standard would be completely uninformative – everything in comparison class would have property

Summary

- Slightly sensitive to nature of standard of comparison, not (only) to structure of scale
- Distributional standards are different – arbitrary
  - Comparison to arbitrary standards restricted – large differences can be measured, but not small differences
- Scale structure does not fully determine standard
  - Allows simpler typology of scale structures
- More types of standards than ‘endpoint’ and ‘contextual’

(Not) Exactly
(Not) exactly

- Scalar exactly
  (35) a. John is exactly 30 years old
     b. It’s exactly noon
     c. The circle is exactly in the center of the square
     d. Your answer is exactly right

- NPI exactly
  (36) a. Red wine is *(not) exactly healthy
     b. John is *(not) exactly tall
     c. That is *(not) exactly a mountain

A broader pattern

- Sauerland & Stateva (2007): English exactly ambiguous between scalar modifier and NPI
  (37) *Der Rotwein ist (nicht) genau gesund German
  But... (38) Delivery pizza is *(not) precisely healthy English
  (39) Der Rotwein ist *(nicht) gerade gesund German

NPI exactly

- If exactly has a secondary use as an NPI, something about its semantics must predispose this to develop
  Cf. cross-linguistic tendency of minimizers (lift a finger, drink a drop, etc.) to become NPIs (Horn 1989)

- Claim: NPI exactly derives from scalar exactly, and has the same basic meaning
  Restriction to negative contexts relates to how alternate predicate interpretations may be ordered in strictness – maximum element arbitrary

Distribution

- Sentential negation
  (42) Red wine isn’t exactly healthy

- Quantifiers
  (43) a. None of the dishes on the menu was exactly healthy
      b. Few of the dishes on the menu were exactly healthy
      c. Everything that was exactly healthy was expensive

- Interrogatives
  (44) Is that sauce exactly healthy?

- Antecedent of conditional
  (45) If John brings something exactly healthy, I’ll be amazed

Two types of readings

- “Literal”
  (46) Sure, they’re not exactly healthy, but they’re much healthier than your typical cookie, have a soft but slightly chewy texture that I adore, and are vegan

- Strengthened
  (47) Being comfort food, grilled cheese burgers are not exactly healthy. And that’s okay, you’re not eating them everyday. So you’ll want a side dish that’s equally comforting... and unhealthy. (http://catesworldkitchen.com/2010/09/maple-almond-butter-cookies/)

  Parallels strengthening of Neg+Intensifier+Adj (Horn 1989); but these not all NPIs
  (48) Not exceedingly/very/too/overly bright “fairly stupid”

Emphatic vs. Understating NPIs

- Israel (1996): Polarity items characterized in terms of quantitative value and informative value
  Low scalar value / emphatic
    (drink) a drop, lift a finger, (budge) an inch, sleep a wink, at all, in the slightest
  (49) Sue didn’t drink a drop → Sue didn’t drink a glass/a bottle/a lot/etc.

  High scalar value / understating
    much, all that, long (it didn’t last long)
  (50) Sue didn’t drink much → Sue didn’t drink a glass/a bottle/a lot/anything/etc.
Emphatic vs. Understating NPIs

- Exactly patterns with high scalar/understating group
  
  (51) Red wine isn’t exactly healthy
  
  Red wine isn’t healthy at all, in the slightest, etc.

- Analyses developed for the ‘drink a drop’ class [e.g. Kriïka 1995] do not transfer directly

-Israel 1996: high-scalar/understating forms conventionally encode understating informative value, and therefore can only be used in propositions that express understatement, specifically negation

- But scalar exactly (e.g. exactly 20 people) not understating

Scalar exactly

- Sauerland & Stavova 2007: exactly sets granularity parameter to finest level under consideration

\[ 4 \text{o’clock} \]

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Sauerland & Stavova 2007: exactly sets granularity parameter to finest level under consideration

\[ 4 \text{o’clock} \]

\[ \llbracket \text{exactly} \rrbracket (4 \text{o’clock}) = \text{granoarse}(4 \text{o’clock}) = [4 \text{o’clock} \pm 30 \text{sec}] \]

Proposal

- Scalar exactly operates on alternative interpretations of scalar expressions ordered in terms of their granularity, i.e. interval width

\[ \text{gran}_{\text{finest}}(4 \text{o’clock}) \subseteq \text{granmedium}(4 \text{o’clock}) \subseteq \text{granoarse}(4 \text{o’clock}) \]

- NPI exactly operates on alternative interpretations of predicates ordered in terms of strictness

\[ \text{gran}_{\text{finest}}(\text{healthy}) \subset \text{gramedium}(\text{healthy}) \subset \text{granoarse}(\text{healthy}) \]

- Vague predicate (e.g. healthy) interpreted relative to contextual parameter that specifies one way of making predicate precise

  \[ [\text{healthy}]^{c1} = \{\text{tofu, salmon, spinach}\} \]
  \[ [\text{healthy}]^{c2} = \{\text{tofu, salmon, spinach, brown rice}\} \]
  \[ [\text{healthy}]^{c3} = \{\text{tofu, spinach, nuts}\} \]
  \[ [\text{healthy}]^{c4} = \{\text{tofu, salmon, spinach, nuts, brown rice}\} \]

- Alternative interpretations ordered in strictness

  \[ [\text{healthy}]^{c} \preceq [\text{healthy}]^{c'} \iff [\text{healthy}]^{c} \subseteq [\text{healthy}]^{c'} \]

- Partial order

Support

- Not exactly infelicitous with predicates which do not allow stricter/less strict interpretations

  (52) ??Sue isn’t exactly pregnant

  (53) a. My laptop isn’t exactly dead (but it will cost so much to fix that I might as well buy a new one)

  b. ??Mr. Jones isn’t exactly dead

- Similar pattern with strictly speaking:

  (54) Red wine *is/isn’t strictly speaking healthy

- Metalinguistic feel

Analysis

- Exactly would pick out strictest interpretation

  \[ [\text{exactly healthy}]^{c} = [\text{healthy}]^{c(\text{strictest})} \]

  \[ = \mathcal{P} \subseteq \{[\text{healthy}]^{c} \mid c \in C \} \wedge \forall Q \in \{[\text{healthy}]^{c} \mid c \in C \} [P \leq_{\text{strict}} Q] \]

- But what is strictest interpretation?

  - Partially ordered set

  - Maximum element arbitrary

  - Exactly Adj undefined - but not exactly Adj nonetheless assertable

  - Not exactly healthy \equiv ‘not within the strictest definition of healthy (whatever that is)’
Summary

- NPI exactly conventionalized, but based on semantics of scalar exactly
  - Ranking of alternatives based on inclusion relationship
    - Scalar: coarser/finer interpretations of scalar term
    - NPI: predicate interpretations
  - Restriction to negative contexts because selection of strictest interpretation arbitrary
  - We may not be able to say what is in the strictest extension of healthy — but we can say of something that it isn’t in that extension
  - A related case: not even approximately healthy
  - Potential problem: not exactly dry
- Scalar standard vs. (metalinguistic) choice of extension

And possible parallel

- Much — like exactly — has NPI and non-NPI uses
  - (55) John is much taller than Fred
  - (56) a. PE John has much money
    b. John doesn’t have much money
- Felicity in positive contexts correlated with flexibility of interpretation
  - (57) a. ??Sue lost much money in the stock market crash
    b. Sue lost much of her money in the stock market crash
    c. Stock lost much more than $1 million in the stock market crash
- Potential explanation: standard for much in (57a) too arbitrary — can specify what doesn’t exceed the standard, but not what does exceed it

Final Remarks

- Vagueness (of different sorts) associated with arbitrariness of extension
  - One way of drawing boundary as good as another
- Statements made relative to arbitrary boundaries restricted
  - Large distances not small distances (slightly)
  - Outside of the strictest interpretation, but not within it (exactly)
- Still work to do on nature of standards and how speakers apply them

References


Thank you!

stephanie.solt@gmail.com