Research Questions
What notion of degree, if any, underlies the interpretation of (relative) gradable adjectives in their positive form?
- How do speakers’ judgments of gradable adjectives change across contexts (comparison classes C)?
- On the basis of what measures can these judgments be described?
- Rank Order
  Example: [Fred is tall] \( \equiv \) 1 if Fred \( \in \) tallest 1/3 of Cs
- Ordinal Degree (derived from ordering on C)
  Example: [Fred is tall] \( \equiv \) 1 if HEIGHT(Fred) \( > \) top 1/3 of heights of Cs
- Measurement Degree (scale with distance metric)
  Example: [Fred is tall] \( \equiv \) 1 if HEIGHT(Fred) \( > \) mean\(_{x=1}^{100}\)HEIGHT(x)

NB: Truth conditions are for purposes of illustration; no account of vagueness of GAs

Theories of Gradability

**Delineation (Klein 1980)**
Gradable adjectives denote partial functions that induce a three-way partition on a comparison class C

<table>
<thead>
<tr>
<th></th>
<th>not tall</th>
<th>extension gap</th>
<th>tall</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank Order</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Ordinal Degree</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Measurement Degree</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Only adj. w/num. measure</td>
</tr>
</tbody>
</table>

**Experiment 1**

**Methodology:** Adjective/Picture Matching (Barner & Snedeker 2008; Schmitt et al. 2009)
- 4 adjectives evaluated in context of 4 picture arrays (36 pictures/11 degrees)

<table>
<thead>
<tr>
<th>big</th>
<th>tall</th>
<th>dark</th>
<th>pointy</th>
<th>Numerical measure</th>
<th>No numerical measure</th>
</tr>
</thead>
</table>

- \( n = 194 \) (mean age: 35.7, 124 female); 1 adjective/distribution per subject (rotated)
- Online via Amazon Mturk (U.S. IP address; screened for native English)

**Predictions**
- If rank order alone sufficient:
  - # of items checked same across conditions
  - ‘cut-off’ same for baseline/left/right; higher for moved

**Results**

- Linear mixed effects model: Adjective & distribution as fixed factors; subject as random factor
- If of items: left < baseline (p<0.05); point > big (p<0.01); point \& moved, right (p<0.01) – effects more pronounced
- Cut-off: left < baseline (p<0.05); right, moved > baseline (p>0.05); point > big (p<0.05); point \& moved (p>0.001), right (p<0.01) – effects weaker

- Neither rank order nor ordinal degree alone sufficient
- Does not rule out combination of two
- Judgments of non-numerical pointy more absolute/less dependent on C

**Experiment 2**

**Methodology:** As in Experiment 1
- 3 adjectives (big, tall, dark); 3 distributions
  - Designed to distinguish ordinal degree vs. measurement degree

<table>
<thead>
<tr>
<th>baseline</th>
<th>rank equivalent</th>
<th>size equivalent</th>
</tr>
</thead>
</table>

- \( n = 170 \) native English speakers (mean age: 30.4, 111 female)

**Predictions**
- If ordinal degree sufficient: baseline = rank equivalent
- If not, must infer abstract measurement degree
If measurement degree depends on numerical measure: dark \( \equiv \) big/tall

**Results**

- Linear mixed effects model: Adjective & numerical as fixed factors; subject as random factor
- % critical item checked:
  - rank < baseline (p<0.001) non-numerical: x rank, size (p<0.001) – effects less pronounced
  - but rank < baseline also for non-numerical (p<0.001)

- Ordinal degree not sufficient; require abstract notion of degree independent of the structure of C
- Also for adjective without measurement system

**Conclusions**
- Interpretation of gradable adjectives in their positive form involves degrees organized into a scale with a distance metric
- Supports abstract theory of degree over one in which scales are derived from an ordering relation on a comparison class
- Some interadicjuctive differences -- but no evidence that scale structure depends on presence/absence of measurement system
- For the future ...
  - More adjectives (numerical/non-numerical; evaluative)
  - Overt comparison classes (tall for a boy)

stephanie.solt@gmail.com