Class A/B distinction (Nouwen, 2010) classification of modifiers into two categories: those that give to the obligatory ignorance inferences (Class B) and those that do not (Class A).

(1) Class A
   I know exactly how many books I have, and it's (more than / fewer than / under / over / m) 200.

(2) Class B
   I know exactly how many books I have, and it's (at most / at least / maximally / maximally / up to / m) 200.

Upper-bounded numeral modifiers

- Our focus: the bounds of numerical modifiers
- Up to behaves differently from other upper-bounded numerical modifiers
  1. NPI licensing (Schweitzer et al., 2012)
     a. [At most / Fewer than / Up to 5] five students have ever been in this case.
     b. [At most / Fewer than / Up to 5] three students give a damn about Panarity.
  2. Cancorlable upper bound (Blok, 2015)
     a. [At most / Fewer than / Up to 5] more than five students died in the crash, perhaps even more.
     b. [Fewer than / Up to 5] ten students died in the crash, perhaps even more.
     c. [Up to / At most / Fewer than / Under / Over / m] ten students will show up to the lecture, if any.
  3. Non-cancellable lower bound (Blok, 2015)
     a. At most three students will show up to the lecture, if any.
     b. [Fewer than / At most / Under / Over / m] three students will show up to the lecture, if any.

Entailed and implicated upper bounds (Blok, 2015)

- Up to asserts a lower bound, at most and fewer than do not
- Up to implicates an upper bound, at most and fewer than assert an upper bound
- At most is pragmatically derived

Table 1: The bounds of at most, fewer than, and up to

<table>
<thead>
<tr>
<th>Semantic</th>
<th>Procrustean</th>
<th>Pragmatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>at most 50</td>
<td>at most 50</td>
<td>at most 50</td>
</tr>
<tr>
<td>fewer than 50</td>
<td>fewer than 50</td>
<td>fewer than 50</td>
</tr>
<tr>
<td>at most 10</td>
<td>at most 10</td>
<td>at most 10</td>
</tr>
<tr>
<td>fewer than 10</td>
<td>fewer than 10</td>
<td>fewer than 10</td>
</tr>
</tbody>
</table>

Methods (b)

- Numerical modifier's Discrepancy
  1. Control: fewer than / at most
  2. 12 items, related through (6) lists
  3. 14 filters (7 contentive discourse & 7 controversial discourse)
  4. 143 native speakers of Greek (68 female participants, 2 non-gender info, age range: 22-60, age range: 10-7)
  5. Filled in on-line (www. uworessaypsy.com)

Results

- ‘Under’ condition: Conclusion
  1. In a natural discourse setting (Exp. 1)
  2. Lower rates in the ‘under’ condition for at most
  3. Possibly associated with directivity: quantity with positive directivity like up to trigger the expectation that higher numbers should be used in subsequent discourse

Discussion

- Effect of distance
  1. Distance in rates may be mapped onto actual numeric distance → Effect for all numeral modifiers
  2. Extreme values taken out by Reference → Effect for all numeral modifiers
  3. Likert scale (vs. binary judgment task): Good metric for semantic if pragmatic inferences (Cummins & Katouzian, 2010; Harrahn & Chen, 2013)

Research questions

- Is it the case that the upper bound of up to is cancellable (which would support an implicature-based account)?
- If so, to what extent? (experiment 1 & 2)
- Does distance play a role? (experiment 2)