Interpreting semantic and pragmatic restrictions on expression usage

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The 'pragmatics problem'

- Lack of a systematic one-to-one correspondence between forms and meanings

i. Any utterance can convey (perhaps) any meaning, under the right conditions

  – "Is John a good lecturer?"   ?p
  – "He has a nice line in jumpers."   ¬p

The 'pragmatics problem'

ii.   Given meanings (intentions) can be expressed with multiple different utterances
   –   e.g. quantity expressions

•   Scenario: 96-98 people present
   –   "96 to 98", "between 96 and 98 (inclusive)"
   –   "fewer than 99, 100, 101,...",
   –   "at most/up to/maximally/no more than 98, ...?"
   –   "more than 95, 94, 93, ...",
   –   "at least/upwards of/minimally/no fewer than 96, ...?"
   –   "100", "about 100", ...

Semantic approach

- Problem of choice illusory (to some extent)
- Ostensibly inter-definable expressions are actually semantically distinctive

- Geurts and Nouwen (2007):
  - "at least n" ≠ "more than n-1"
  - "at most n" ≠ "fewer than n+1"
  - Superlative quantifiers argued to possess modal semantics

Semantic approach

- Problem of choice illusory (to some extent)
- Ostensibly inter-definable expressions are actually semantically distinctive

- Nouwen (2010):
  - Class A quantifiers ("fewer than…") refer to reference values
  - Class B quantifiers ("at most", "maximally", "up to"…) place bounds on degree properties
  - Diagnostic: "A triangle has Q 10 sides"

Pragmatic approach

- Problem of choice one of achieving optimal relevance (broadly construed)
- Ostensibly inter-definable expressions differ in how well they accomplish this

- How is it measured?
  - Relevance Theory (RT): Trading off effort and effect
  - But how are these measured?
  - And how are they balanced?

Constraint-based pragmatic approach

- Idea: treat the contributory factors to "optimal relevance" as violable constraints
- *Preferred* properties relate to:
  - Informativeness
  - Numeral salience
  - Quantifier simplicity
  - Granularity
  - Numeral priming
  - Quantifier priming

Constraint-based pragmatic approach

- Why violable constraints?
  - Generally not possible to satisfy all at once
  - e.g. "fewer than 100" versus "fewer than 99"
  - cf. van der Henst and colleagues on time-reporting

- Can use Optimality Theory to treat these
  - Unidirectional speaker-referring implementation
  - "Situation" as input, "utterance" as output

Applications of pragmatic approach

- Nouwen's class B quantifiers all encode non-strict comparison
  - More costly in processing (Cummins and Katsos 2010)
  - Could violate Quantifier Simplicity constraint
  - Pragmatic effect: sentences with class B quantifiers implicate falsity of corresponding sentences with class A quantifiers (under usual implicature conditions)

  ?"Triangles have at most 10 sides"

  +> **Not true** that "triangles have fewer than 10 sides"

Applications of pragmatic approach

- Nouwen's class B quantifiers all encode non-strict comparison
  - More costly in processing (Cummins and Katsos 2010)
  - Could violate Quantifier Simplicity constraint
  - Pragmatic effect: sentences with class A quantifiers do not implicate falsity of anything

    "Triangles have fewer than 10 sides"

    "...fewer than 9..." involves less round/perhaps less salient number: **no implicature**

Relating semantics and pragmatics

- Pragmatic model acting only on semantically legitimate alternatives (whatever these are)
    - 'Be "truthful"' assumed as an overarching principle
    - Therefore compatible with more complex semantic accounts of specific quantifiers

        e.g. if S knows quantity is 21, but "at most" has uncertainty in its semantics, S cannot use "at most"
        - choice is restricted to other expressions
        - but must still be made!

Priority?

- Pragmatic model should (IMO) have some kind of explanatory priority

  – By capturing patterns otherwise ascribed to semantics, we avoid semantic overspecification

  – Fully-featured pragmatic system seems indispensable complement to semantic accounts in this domain

  – Semantic accounts are vulnerable to over-extension as they rely on intuitions about hypothetical usages

Pilot data: inferences from actual usage

- Investigating inferences between quantifiers using materials drawn from BNC ("does X => Y?")

- Semantic condition:

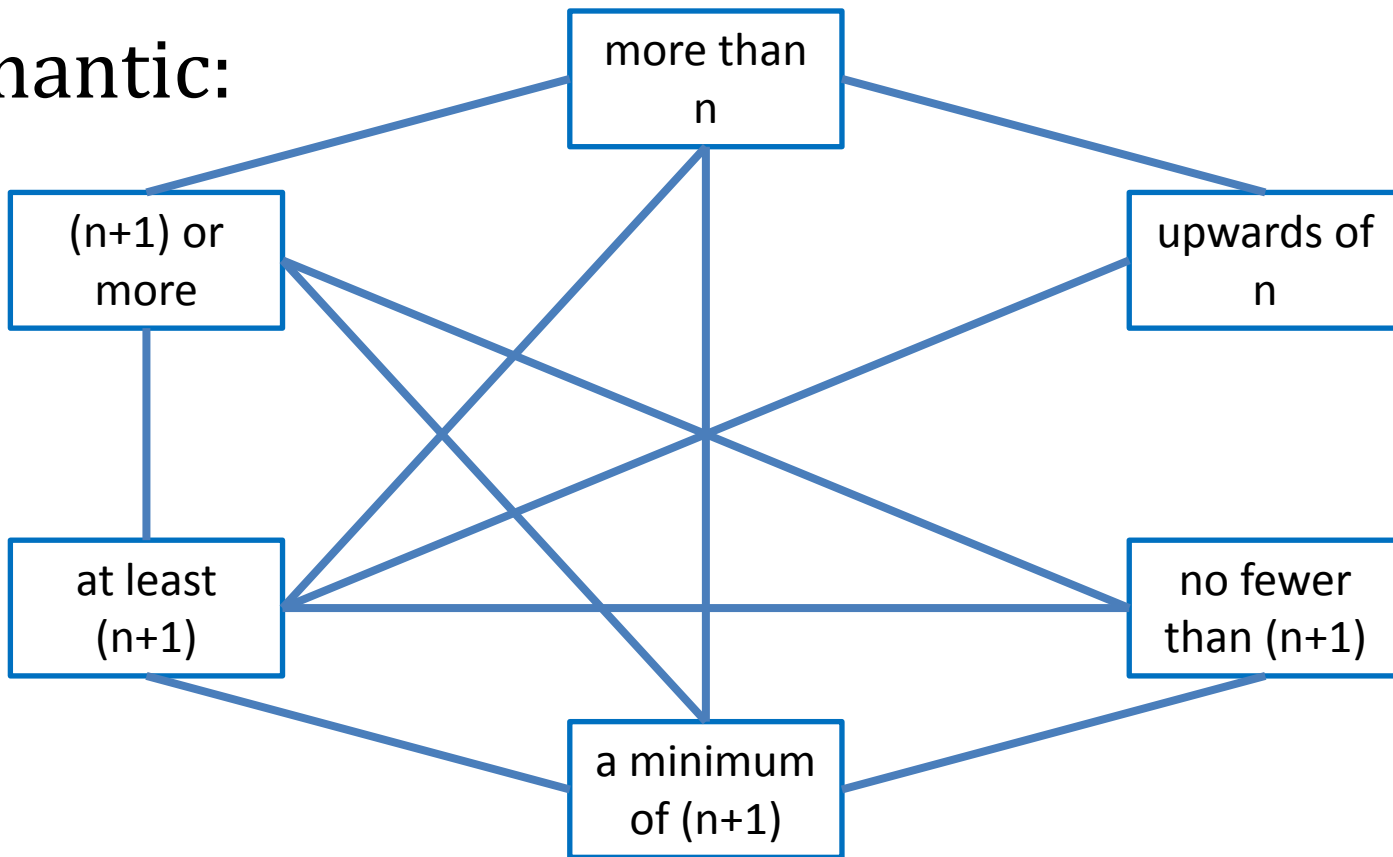If [Q(Y)] then p.
Q[X].
Is it the case that p?

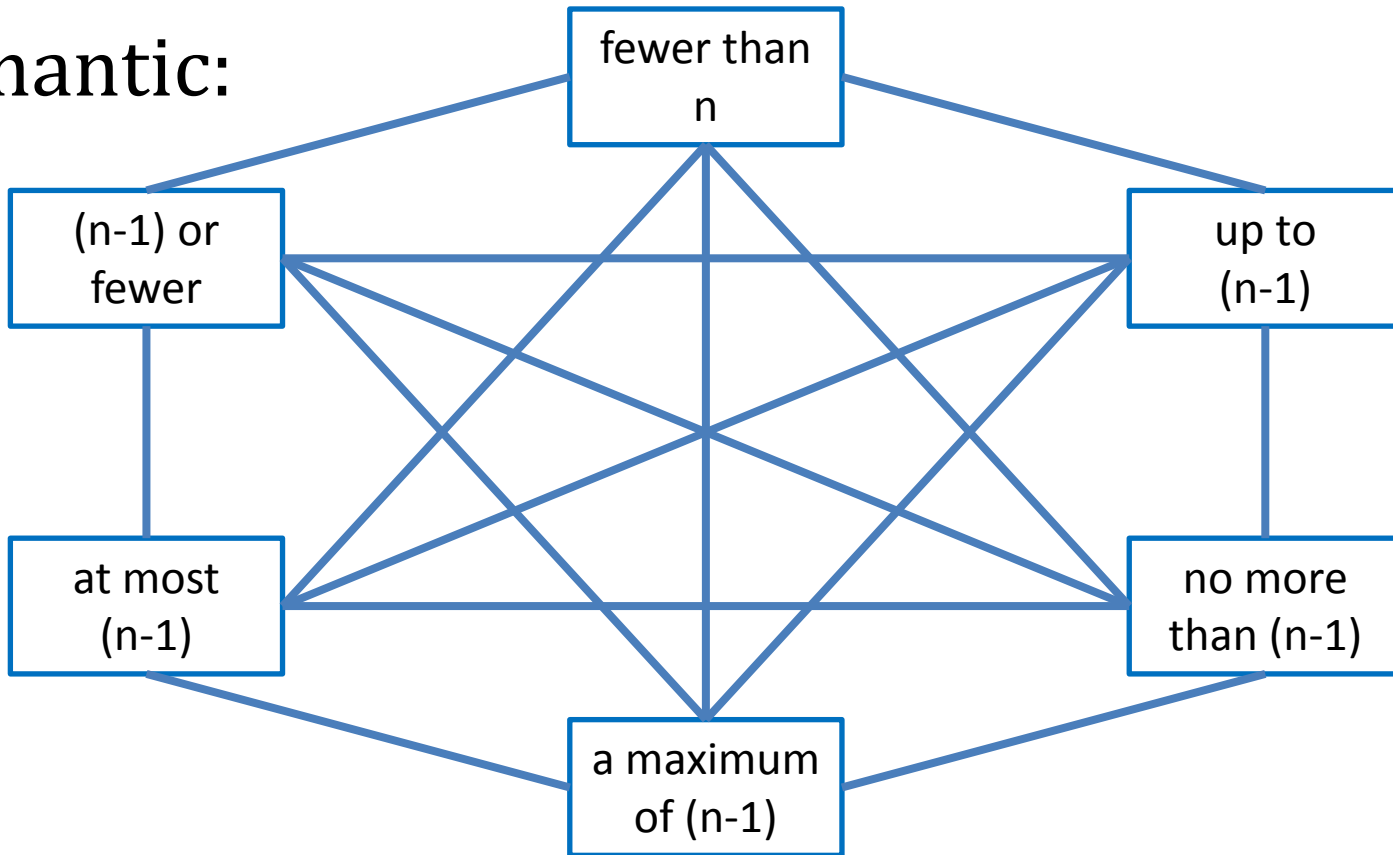- Pragmatic condition:

Q[X].
Would it be correct to say "Q[Y]"?
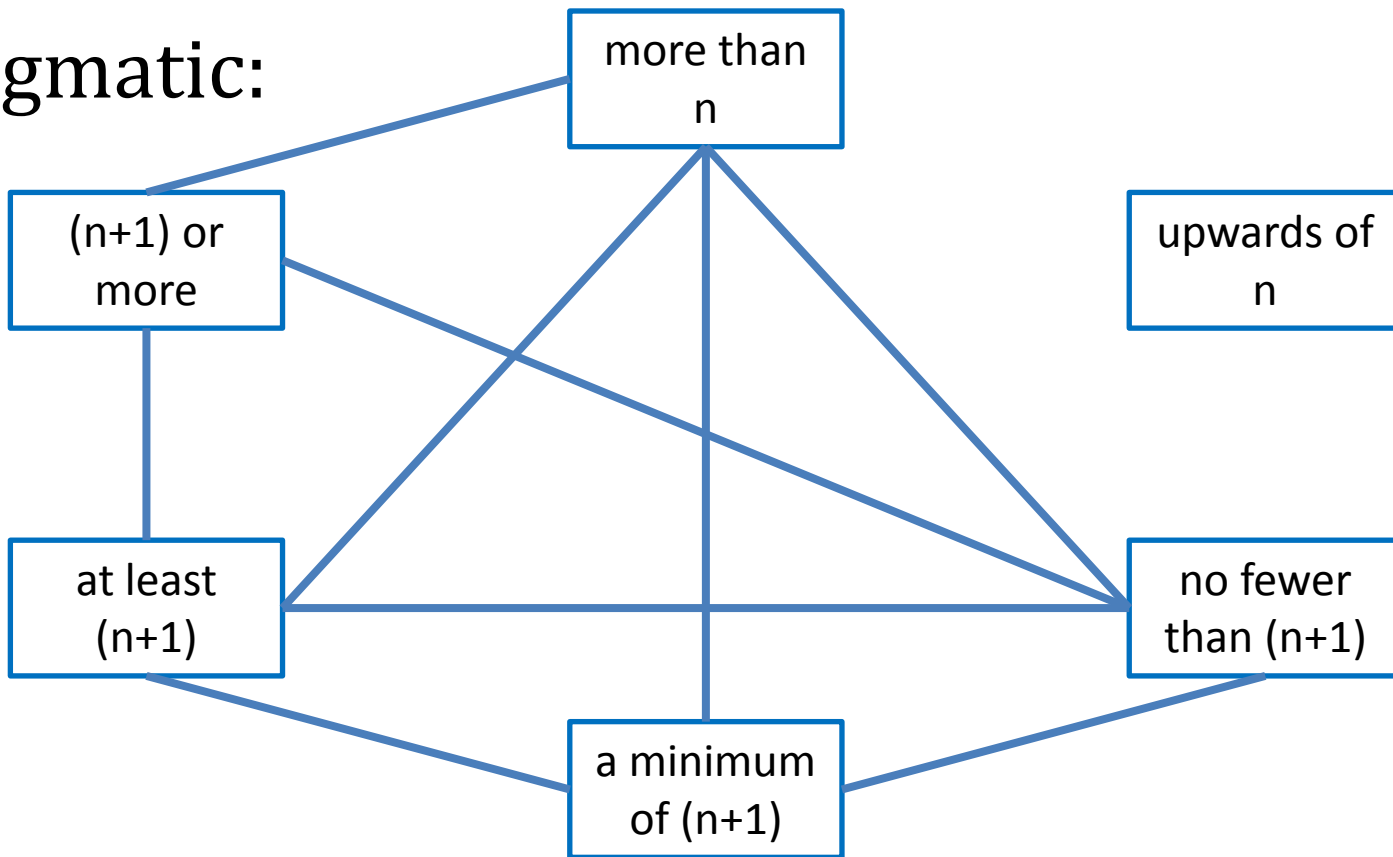
Pilot data:
inferences from actual usage

Semantic:


```
                    more than
                        n

(n+1) or                                    upwards of
  more                                           n



at least                                    no fewer
 (n+1)                                      than (n+1)


                   a minimum
                    of (n+1)
```

Pilot data: inferences from actual usage

Semantic:

fewer than n

(n-1) or fewer

up to (n-1)

at most (n-1)

no more than (n-1)

a maximum of (n-1)

Pilot data: inferences from actual usage

Pragmatic:

more than n

(n+1) or more

upwards of n

at least (n+1)

no fewer than (n+1)

a minimum of (n+1)
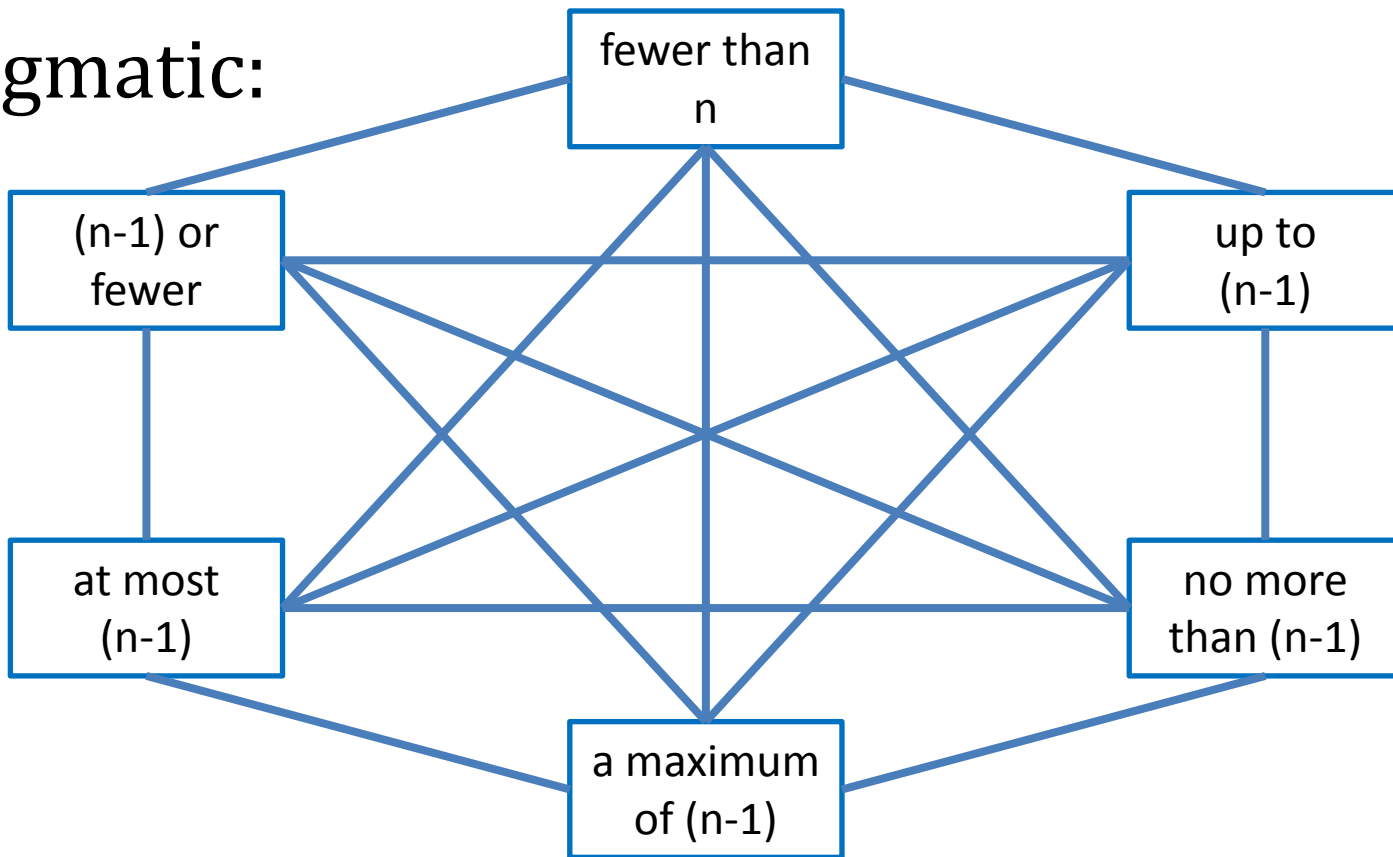
Pragmatic:

Generalising pragmatic approach

- By analogy with RT, model should be applicable to other domains

- However, numerical quantification good testbed:
  - synthesises cross-disciplinary factors
  - metrics for violations can easily be proposed
  - alternatives can be systematised

- Obvious extension: numerical vs. non-numerical quantification
  - e.g "most" vs. "more than half"

Alignment constraints?

cf. Pickering and Garrod (2004), Branigan et al. (2000)

- Preferential re-use of low-level linguistic material (words, syntactic structures, etc.)

- Does not pre-empt communicative intention

- Idea: constraints favour use of activated material

- Thus bear upon *process* of encoding current speaker's intention

Thank you!

References

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