

# SOME CASES OF VAGUE QUANTITY

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Vague Quantities and Vague Quantifiers (VQ2)  
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# Linguistic Phenomena

# Vague Quantifiers: *many* class

- (1) a. **Many** people I know like jazz
- b. **Few** students came to the lecture
- c. I don't have **much** money
- d. There is **little** water in the bucket
- Like gradable adjectives...
  - ▣ Context sensitive
  - ▣ Borderline cases
  - ▣ Compositional regulation
- (2) a. Barney has **very few** books
- b. For a professor, Fred has **few** books

# Vague Quantifiers: *most*

- (3) a. **Most** Americans have broadband internet access
- b. **More than half of** Americans have broadband internet access
- *Most* > *more than half*
- (4) Unfortunately, the long term maintenance of the reduced weight is poor, and **more than half, if not most**, of the persons eventually return to their former obese state
- Lacks sharp lower bound
- (5) **Most** of the U.S. population is female ??
- The facts: female 50.7% vs. male 49.3%

# Approximate Interpretation of Number Words

- RNRI Principle (Krifka 2007): Round number words in measuring contexts tend to have round interpretations:
  - (6)
    - a. Forty students came to the party
    - b. Thirty-nine students came to the party
  - (7)
    - a. We bought one hundred kilos of rice
    - b. We bought one hundred and three kilos of rice
  - (8)
    - a. Mary waited for forty-five minutes
    - b. Mary waited for forty minutes
  - (9)
    - a. The wheel turned on hundred and eight degrees
    - b. The wheel turned two hundred degrees

# Modified Numerals



- (10) a. More than 100 people attended the meeting on the new highway-construction project
- b. I have fewer than 60 CDs

□ How many??

- ▣ Some form of pragmatic enrichment available to yield bounded but imprecise ranges (Cummins, Sauerland & Solt 2010)



# Formal Mechanisms

# Comparison Classes

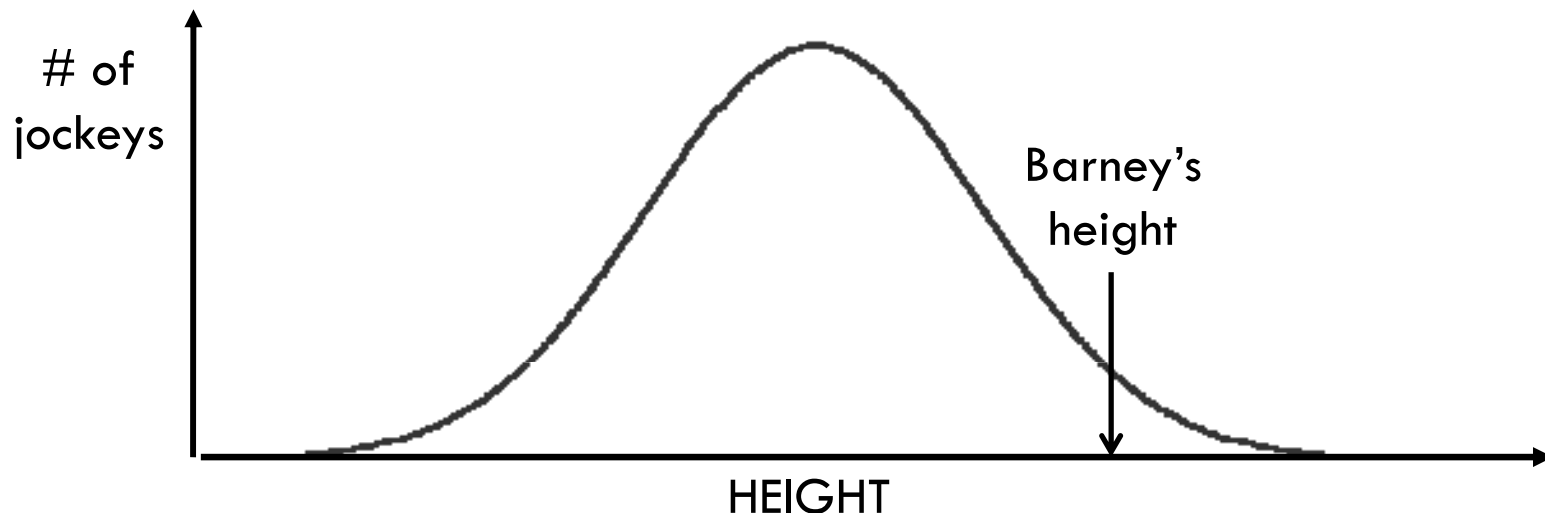
- Vague expressions interpreted with reference to comparison class (Klein 1980)

## (11) Barney is tall for a jockey

‘Barney’s height exceeds the standard for jockeys’

‘Barney is (considerably) taller than the average jockey’

‘Barney is taller than most jockeys’

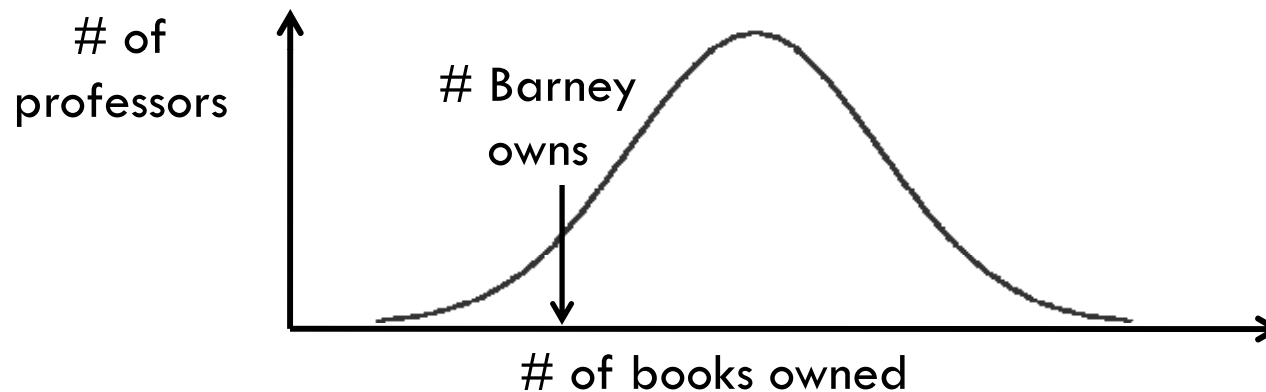




# Comparison Classes

(12) Barney owns few books for a professor

'Barney owns fewer books than most professors'



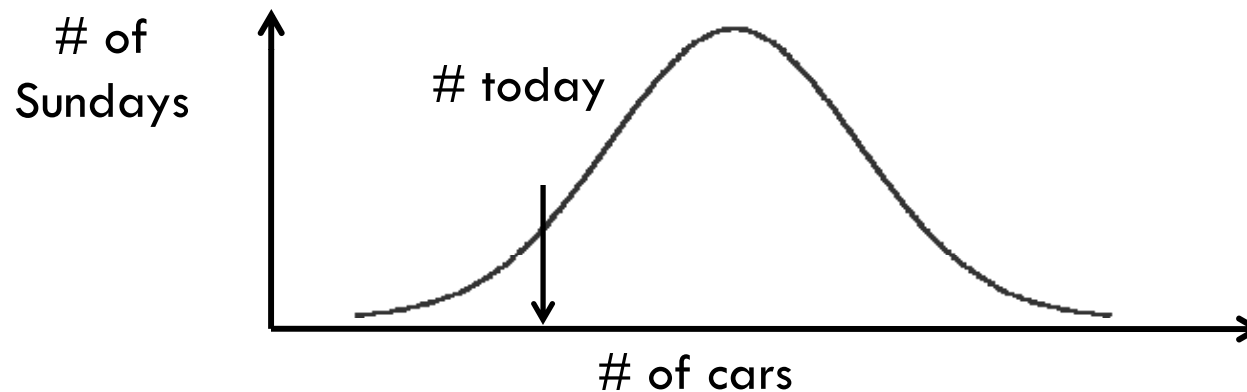
(13)  $\llbracket(12)\rrbracket = 1$  iff # of books owned by Barney  $< N_S$ ,

where  $N_S = \text{median}_{x:\text{professor}(x)}(d:x \text{ owns } d\text{-many books}) \pm n \cdot \text{MAD}_{x:\text{professor}(x)}(d:x \text{ owns } d\text{-many books})$

# Comparison Classes

(14) For a Sunday, there are few cars in the lot

'There are fewer cars in the lot today than most Sundays'



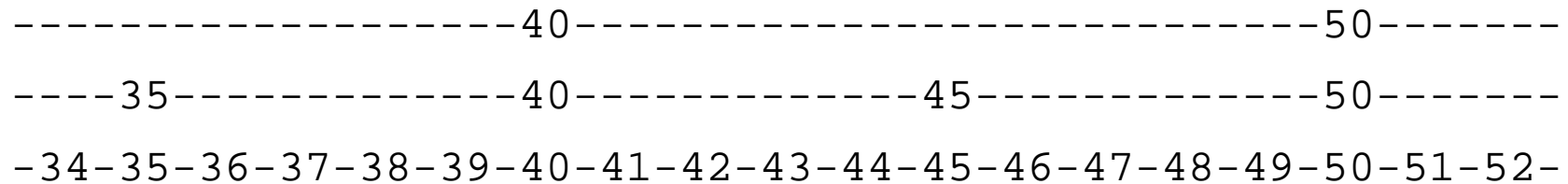
(15)  $\llbracket(14)\rrbracket = 1$  iff # of cars in the lot today  $< N_S$ ,

where  $N_S = \text{median}_{t:\text{sunday}(t)}(d: \text{there are } d \text{ cars in the lot at } t) \pm n \cdot \text{MAD}_{t:\text{sunday}(t)}(d: \text{there are } d \text{ cars in the lot at } t)$

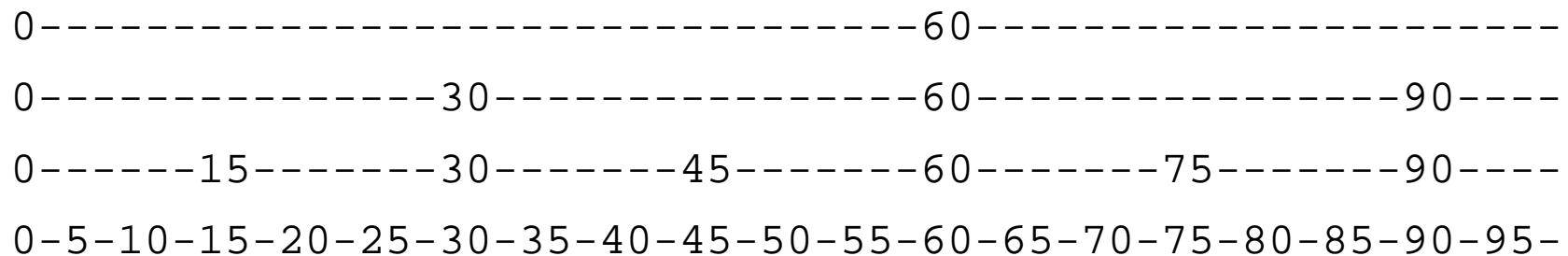
# Scale Granularity

- Krifka (2007): The result of measuring can be reported with respect to scales that differ in density of representation points

## Number:



## Time (minutes):



# Scale Granularity



- Approximate interpretation of round numbers:
  - ▣ Interpretation of numeral relative to coarse-grained scale (Krifka 2007)
  
- Approximators such as *roughly*, *exactly*:
  - ▣ Regulate granularity level (Sauerland & Stateva 2007)
  
- Pragmatic enrichment of modified numerals:
  - ▣ Scalar implicature via competition between options of same granularity level (Cummins, Sauerland & Solt 2010)

# Measurement Level/Scale Structure

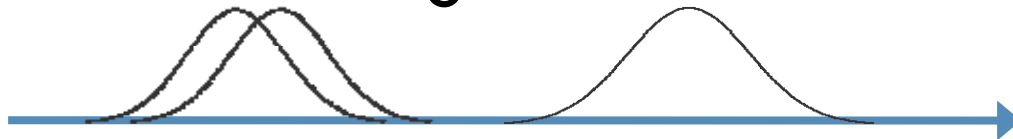
- Ratio level measurement:



- Ordinal level measurement

...7, 8, 9, 10, 11, ...

- Tolerant orderings



- Semi-order (van Rooij 2010)
- Parallels to ANS (Dehaene 1997)



# The Preference for Approximation

**EURO-XPRAAG Project:**

**Stephanie Solt, Chris Cummins, Marijan Palmović**

# Puzzle 1

- From Krifka (2007):



- Why is it so strange to be overly precise in this context?

# Puzzle 2



- Rounding in telling the time (van der Henst et al. 2002)

Watch:                3 : 08

Speaker:            *It's ten after three*

- Even by digital watch wearers (more effort for speaker)
- Less rounding when precise answer relevant to hearer
- Van der Henst et al.: Speaker's choice selected for optimal relevance to hearer (rounded answer easier to process while having same true consequences)
- Justification for 'easier to process' claim?



# Puzzle 3



A third of voters (34%) supported the proposition.

According to a new survey, six in ten Americans (59%) read the bible at least occasionally.

- What different purposes served by approximate quantifier and precise %?

# Research Questions



- What is the reason for the apparent speaker / hearer preference for approximate rather than precise communication of numerical information?
  - Is information communicated at a more approximate or coarse-grained level in fact easier to process? In what respect?
- Is the advantage for ‚approximation‘ driven by:
  - Simplicity of form
  - Roundness
  - Granularity of representation
  - Linguistic vs. numerical form



Thank you!