Language & Cognition – lecture 10

Quantification

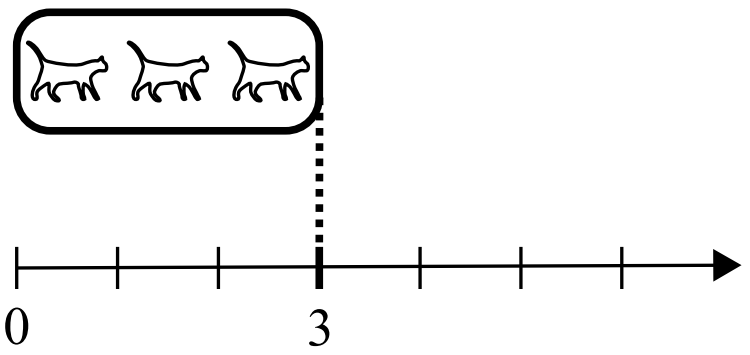
What is quantification?

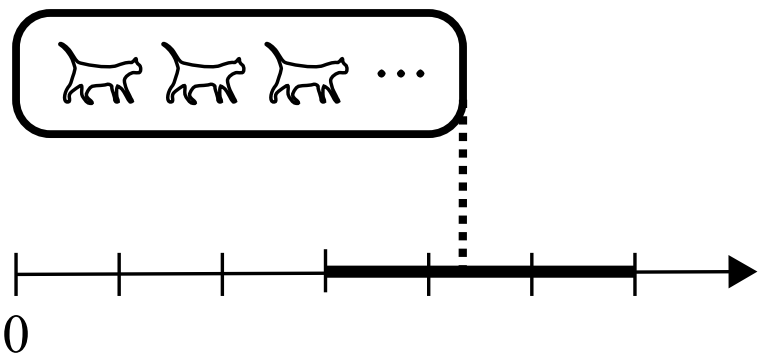
- Quantification involves using a word or a linguistic expression **to specify the amount** of something.
- There are several strategies of quantification depending on
  - the type of mass quantified (plural vs. non-plural),
  - precision (exact vs. approximate),
  - system of reference (relative vs. absolute),
  - scanning (summary vs. sequential),
  - etc.

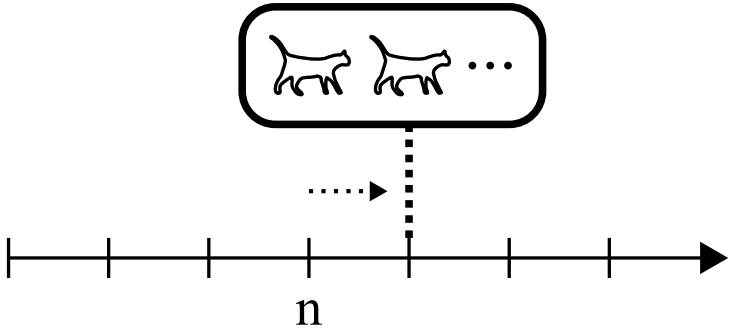
Absolute quantifiers

- Absolute quantifiers specify the amount in relation to some sort of **a reference scale**.
- One example are cardinal numerals (*one*, *two*, *three*, etc.), which relate a plural mass to a counting scale.
- Another example is *several*, which relates a plural mass to a region on a counting scale (rather than to a discrete point).
- Other examples are *much*, *many*, *little*, and *few*, which relate plural and non-plural masses to a "standard" or expected amount on a reference scale.

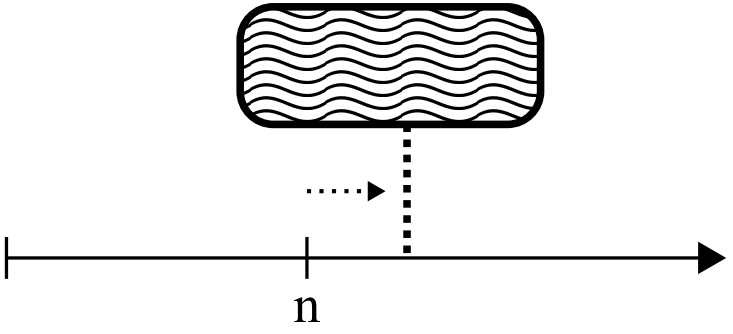
Three vs. *several*



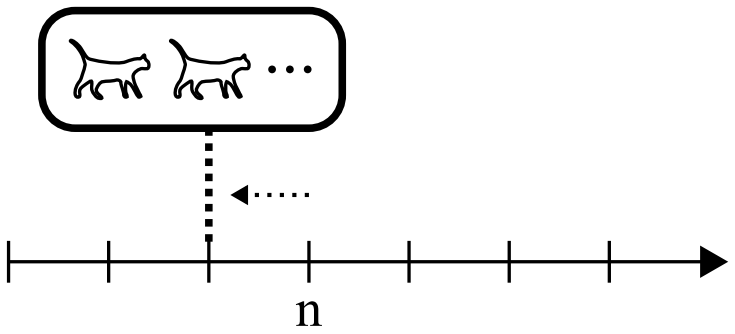




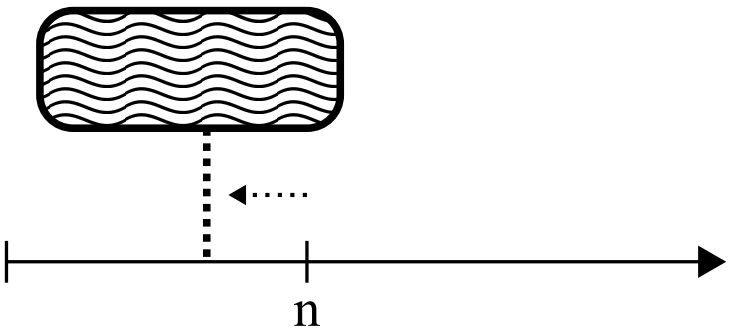
many



much



few



little

Proportional relative quantifiers

- Proportional relative quantifiers – like *all*, *most*, *some*, and *no* – specify the amount in relation to a **reference mass**.
  - ***All*** profiles the entire maximal extensions (ME).
  - ***Most*** profiles a significant portion of ME.
  - ***Some*** profiles an unspecified portion of ME.
  - ***No*** doesn't profile any portion, but still evokes ME as its base.

Proportional relative quantifiers

- Typically, the reference mass is a **maximal extension** (ME) of the mass in question, but it can also be restricted by context.

(1)(a) ***All cats*** *benefit from vaccination.*

- *All* = maximal extension

(b) ***All cats*** *vaccinated yesterday were female.*

- *All* = contextually restricted extension

Representative instance relative quantifiers

- Representative instance relative quantifiers – like *every*, *each*, and *any* – "pick out" a portion of a reference mass and depict it as a representative member.
  - ***Every*** involves summary scanning of ME.
  - ***Each*** involves sequential scanning of ME.
  - ***Any*** "picks" an element at random.

Representative instance relative quantifiers

(2) (a) *{Every/each/any} cat needs to be vaccinated.*

(b) *The vet vaccinated {?every/each/*any} cat one by one.*

- *Each* is most compatible with sequential scanning evoked by *one by one*.

(c) *{*Every/*each/any} milk is unhealthy for cats.*

- *Any* is most compatible with non-plural masses.

(d) *Peter doesn't like {*every/*each/any} cat.*

- *Any* is most compatible with negative meanings.

Quantifying expressions

- Amounts of masses can also be specified by various composite expressions, for example:
  - a container: *bottle of milk*, *jar of marmalade*, *can of oil*
  - a "standard" unit of measurement: *liter of gasoline*, *kilogram of flour*, *meter of copper wire*
  - a "provisional" unit of measurement: *spoonful of sugar*, *bucketful of ice*, *handful of sand*
  - a group of animals: *herd of cattle*, *pack of wolves*, *swarm of bees*
  - a portion of a substance: *slice of bacon*, *lump of wax*, *puff of smoke*
- The **head** of the entire expression is usually the first element, but the construal is quite flexible and context-dependent.

(3)(a) *Jill broke a* ***bottle***$_{\text{head}}$ *of milk.* (b) *Jill drank a bottle of* ***milk***$_{\text{head}}$.

Polish numerals

- Why *dwie* ***butelki***$_{\text{nom}}$ but *pięć* ***butelek***$_{\text{gen}}$?
- In the past numerals for 1-4 were adjectival, so they formed Adj+N constructions, like in (3). Numerals for >5 were nouns, so they formed N+N constructions, like in (4).

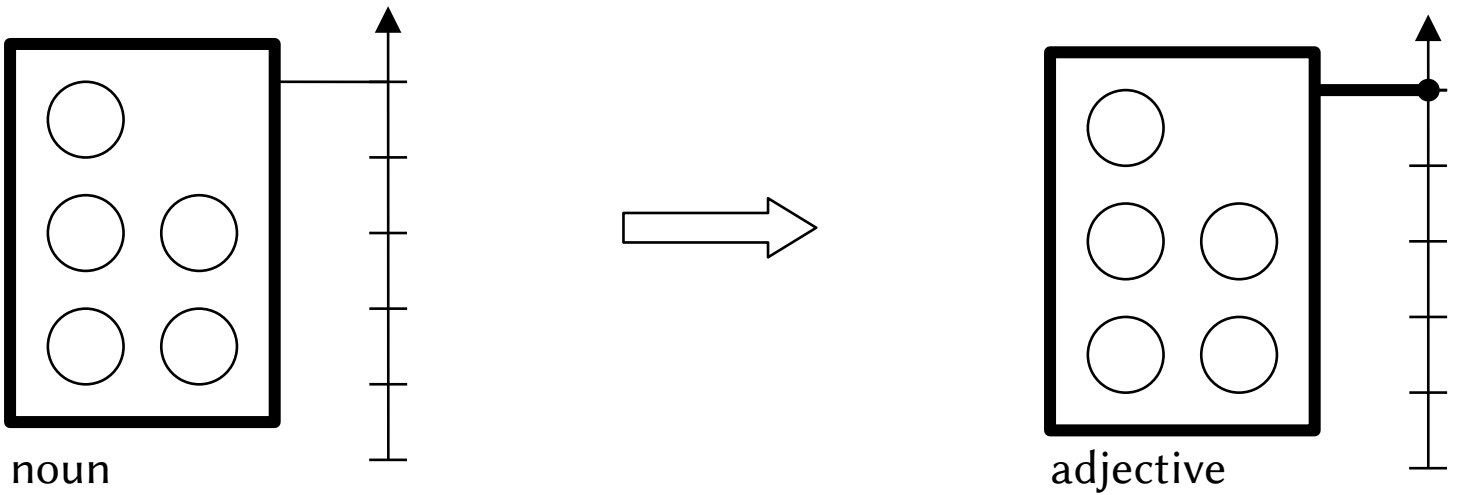
(3) (a) *dwie* ***butelki***

(b) *zielone* ***butelki***

(4) (a) *pięć* ***butelek***

(b) *tuzin* ***butelek***

Construal in *pięć*



Adjective or noun? Grammar test

(5)(a) *Jedna* ***osoba***$_{\text{sg}}$ ***przyszła***$_{\text{sg}}$ *na zajęcia.*

(b) *Dwie* ***osoby***$_{\text{pl}}$ ***przyszły***$_{\text{pl}}$ *na zajęcia.*

(c) ***Pięć***$_{\text{sg}}$ *osób* ***przyszło***$_{\text{sg}}$ *na zajęcia.*

(6)(a) ***Tysiąc***$_{\text{sg}}$ *osób* ***przyszło***$_{\text{sg}}$ *na wykład.*

(b) ***Tysiące***$_{\text{pl}}$ *osób* ***przyszły***$_{\text{pl}}$ *na wykład.*

Lexical gaps test

Number	**“Adjectival” numeral**	**Noun (sg / pl)**
0	–	*zero* / *zera*
1	*jeden*	*jedynka* / *jedynki*
2	*dwa*	*dwójka* / *dwójki*
5	*pięć*	*piątka* / *piątki*
100	*sto*	*setka* / *setki*
1000	–	*tysiąc* / *tysiące*

Summary of tests

Test	0	1	2	5	1000
Subject-verb agreement like in a...	noun	adjective or noun	adjective	noun	noun
Grammatical case of the plural mass like in a...	noun	adjective	adjective	noun	noun
Lexical gap, plural form like in a...	noun	adjective	adjective	adjective	noun

References

- Langacker, Ronald W. 2008. *Cognitive Grammar. A Basic Introduction*. New York: Oxford University Press.
- Langacker, Ronald W. 2016. *Nominal Structure in Cognitive Grammar: The Lublin Lectures.* Edited by Adam Głaz, Hubert Kowalewski, and Przemysław Łozowski. Lublin: Maria Curie-Skłodowska University Press.
- Radden, Günter, and René Dirven. 2007. *Cognitive English Grammar*. Amsterdam-Philadelphia: John Benjamins Pub.