Aufbauseminar AS English Linguistics II

Class 8: Semantics & Prototype theory

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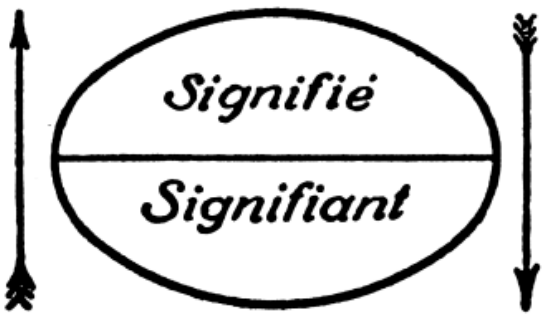
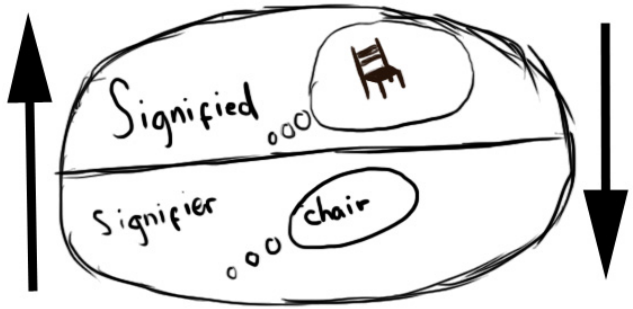
Semantics

❓ What is semantics?

☞ Semantics studies the relation between linguistic forms and meaning.

...(relating to the Saussurian idea of a sign)





But:

- semantics: inherent, context-independent meaning (denotation)
- pragmatics: additional, context-dependent, speaker-dependent meaning (connotation, intension)

Lexical semantics

❓ How do we represent meaning? What do the following concepts mean?

(1) a. woman
b. man
c. girl
d. boy

A traditional approach to lexical semantics is **lexical decomposition**.

☞ The concepts are decomposed into a number of privative features. The meaning can then be understood as the sum of all the distinctive features needed.

	human	female	adult
woman	+	+	+
man	+	-	+
girl	+	+	-
boy	+	-	-

❓ Do you see problems with this approach?

The motivation for Prototype Theory

Lexical decomposition can, in theory, be used for lexical (concrete) meaning and grammatical (abstract) meaning in the same way.

Various semantic theories have developed much more elaborate mechanisms for decompositions and featural structures.

However, the defenders of the prototype approach saw two main problems with featural decomposition:

1. it is categorical
   - **A** either a concept has a property and belongs to a category,
   - **B** or it does not.

2. there is a single set of features that defines a concept
   - **A** a feature either is necessary for the definition of a concept
   - **B** or it is not.

In addition, prototype supporters objected that the cognitive representation of meaning would involve purely linguistic mechanisms and be independent from other cognitive mechanisms.

☞ Prototype Theory thus aimed at providing a mechanism that allows for more flexibility and that integrates with other cognitive domains.

Evidence for a less categorical approach to meaning

Metaphorical extension

(2) a. A bird landed on Vera's **head**.
b. Vera is the **head** of the department.

In order to use *head* in an abstract sense, certainly not all features that contribute to its meaning in the literal sense are relevant. (e.g. [±bodypart], [±on-top-of-neck] [±dominant-part-of-larger-system], ...)

What is a bird?

Birds and birdiness

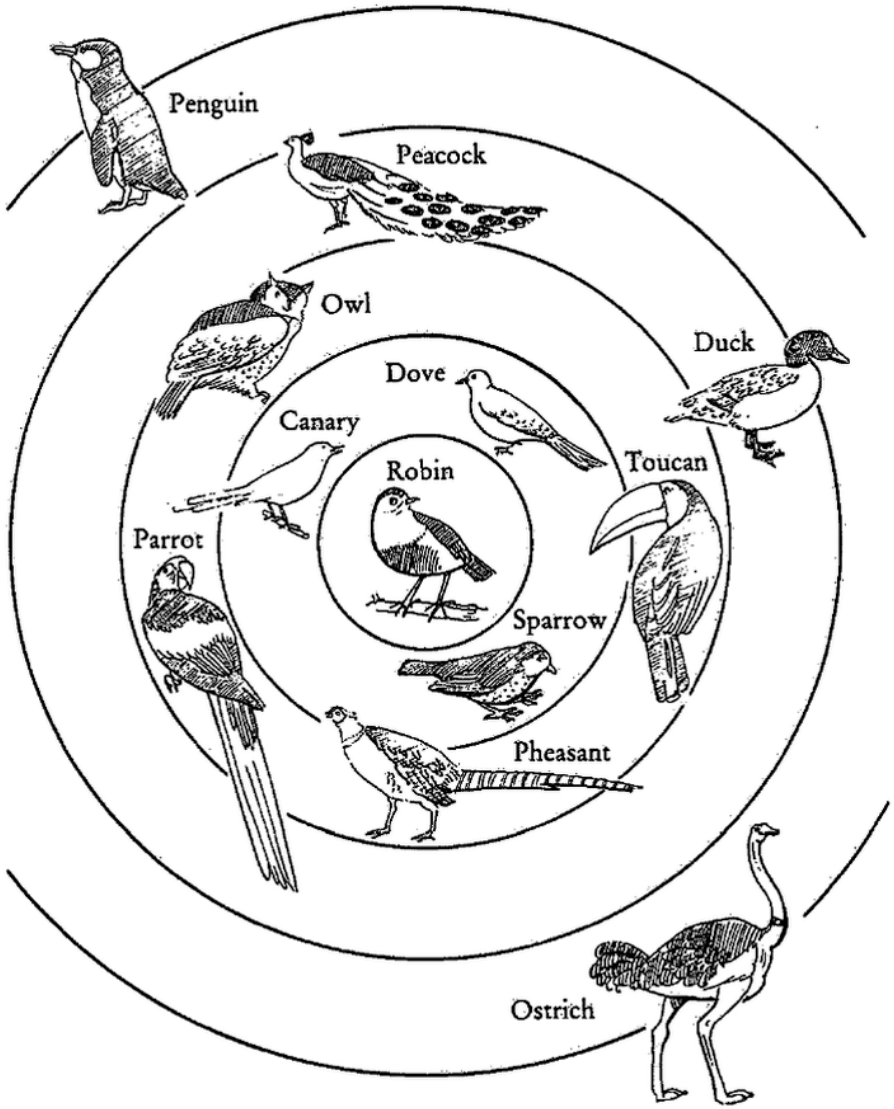
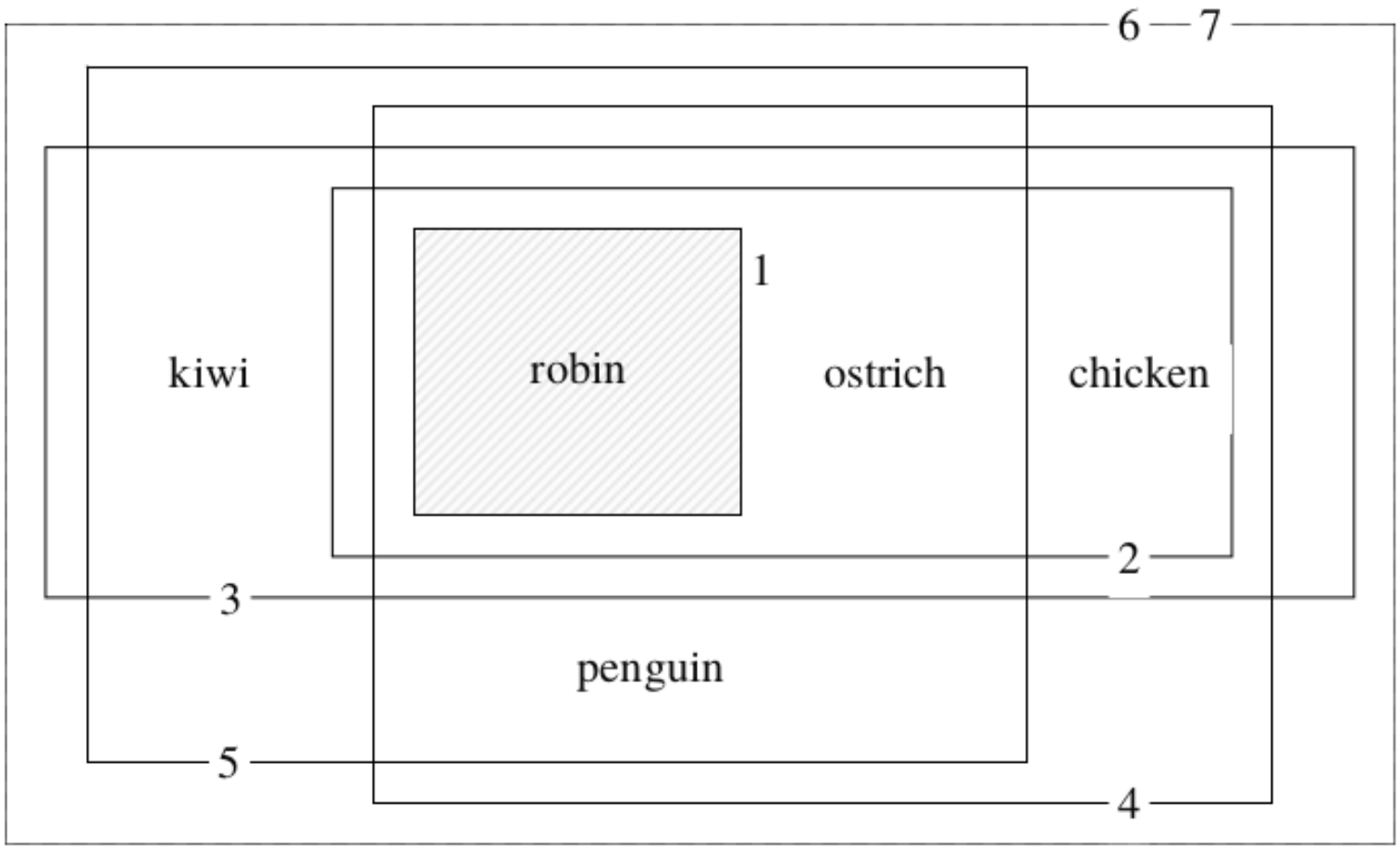


Figure 1 Birdiness rankings

Birds and birdiness



1 being able to fly
2 having feathers
3 being S-shaped
4 having wings
5 not domesticated
6 being born from eggs
7 having a beak or bill

Birdiness and prototypicality

Features are still important for the meaning and the classification of concepts, but in a slightly different way:

- A category consisting of various members has some members that are more prototypical representatives than other members.
- ☞ Some birds are birdier than others, e.g. a robin is more birdier than a penguin, but both belong to the category.

- The meaning of a concept corresponds to the prototypical representative of a category.

- There is no single set of features that are necessary to categorize a concept:
  - a penguin is a bird even though it does not fly
  - a butterfly is not a bird even though it flies

Prototype theory

No single set of features for defining categories

- Categories cannot be defined by means of a single set of (necessary and sufficient) features.
- [±can-fly] is neither always necessary nor always sufficient to classify a concept as a bird.
- "We have argued that many words [...] have as their meanings not a list of necessary and sufficient conditions that a thing or event must satisfy to count as a member of the category denoted by the word, but rather a psychological object or process which we have called a prototype." (Coleman and Kay 1981: 43)

Prototype theory

Family resemblance

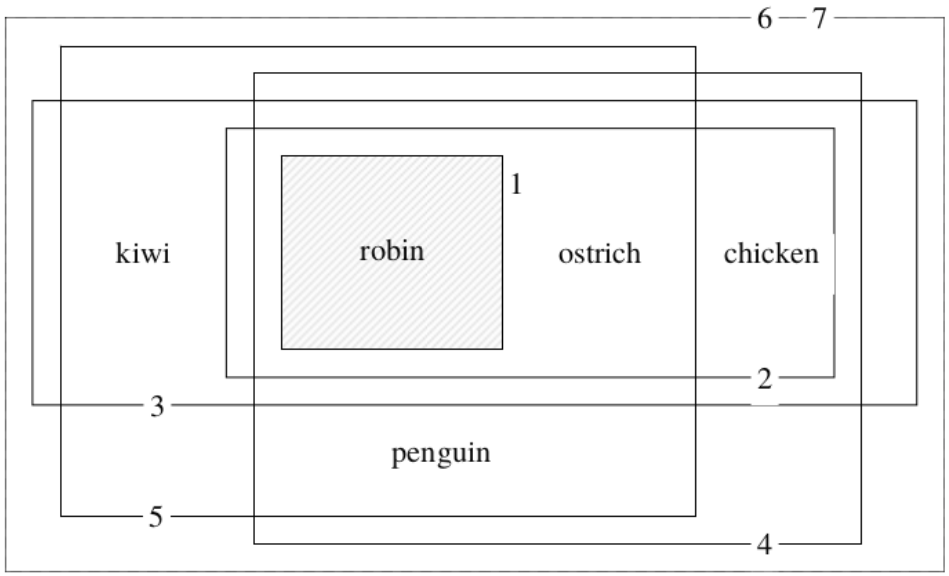
- Categories are thought to exhibit a family resemblance structure.
- Their semantic structure takes the form of a radial set of clustered and overlapping meanings.

item	feature	overlapping similarities				
1	AB	A	B			
2	BC		B	C		
3	CD			C	D	
4	DE				D	E

Prototype theory

Prototypes have the most overlap of features from all members of the category

- The prototypical member of a category is the member with most overlap of the features of all members



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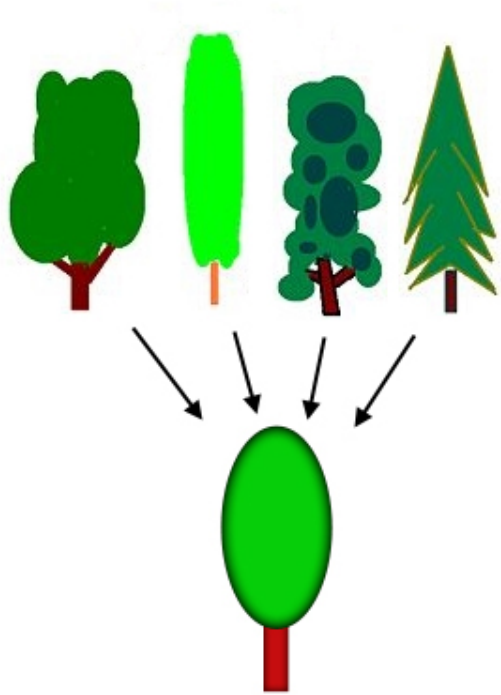


Prototype theory

Membership in a category is a matter of degree

- Prototypical categories exhibit degrees of category membership; not every member is equally representative for a category:

"By prototypes of categories we have generally meant the clearest cases of category membership defined operationally by people's judgments of goodness of membership in the category ... we can judge how clear a case something is and deal with categories on the basis of clear cases in the total absence of information about boundaries." (Rosch 1978: 36).

Prototype theory

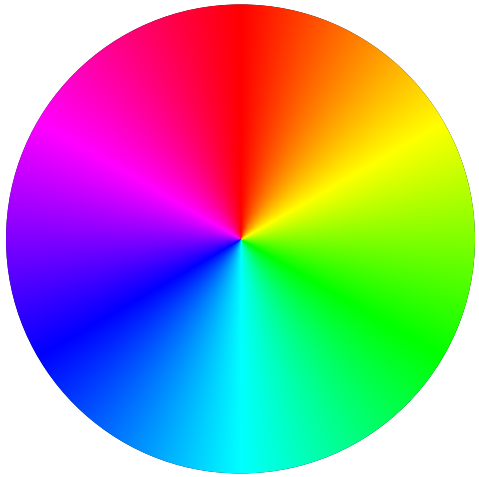
Prototypical categories are blurred at the edges

"New trends in categorization research have brought into investigation and debate some of the major issues in conception and learning whose solution had been unquestioned in earlier approaches. Empirical findings have established that [...] category boundaries are not necessarily definite." (Mervis and Rosch 1981: 109)

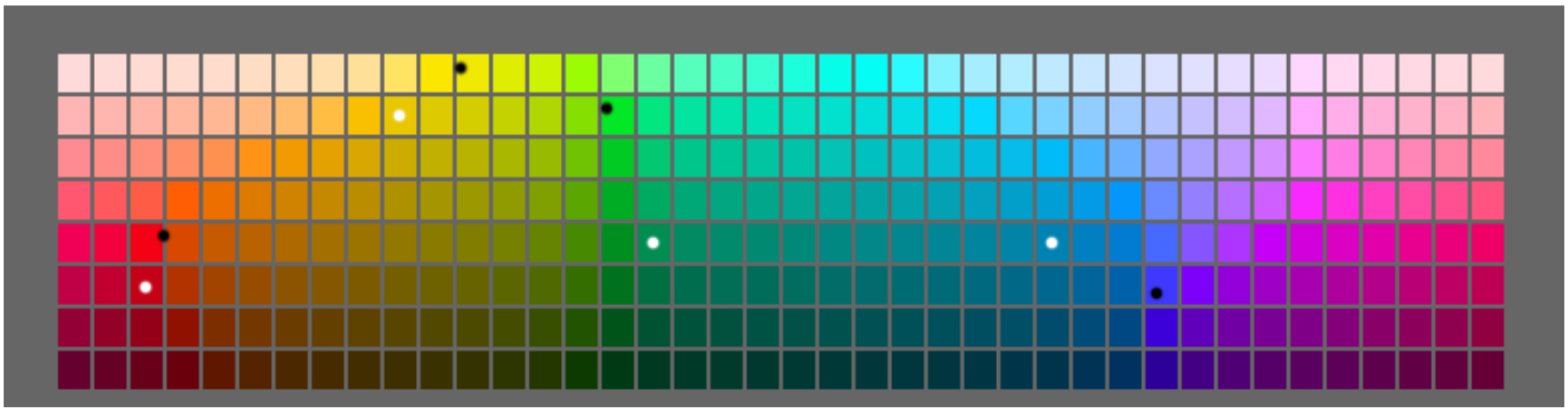
(Labov 1973)

Fuzzy borderlines and colors

- The colors we see are not discrete but part of a continuous spectrum



- Berlin and Kay (1967) showed participants discrete color shades and the participants had to decide which shades were still included in a color concept such as *red*:



Fuzzy borderlines and colors

- First of all, there is a great amount of individual variation.
- What the work of Berlin & Kay is more famous for, however is that they found that languages cover the color spectrum in very different ways.

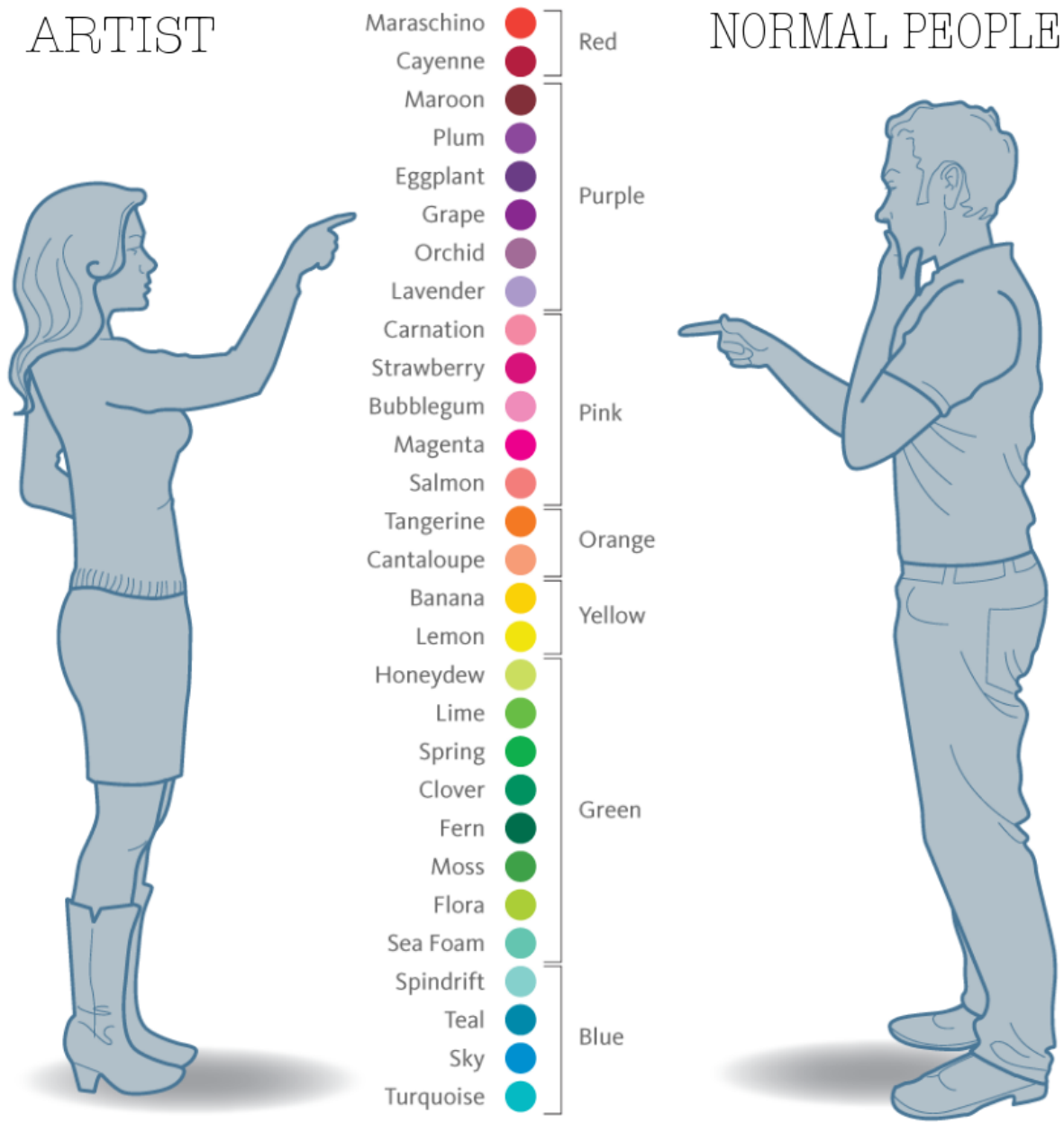
☞ Crosslinguistically, color concepts (or categories) in terms of basic color words differ:

For instance, a number of languages only uses a single word for both *blue* and *green*.

Berlin & Kay propose the following crosslinguistic hierarchy:

❓ Does that mean that speakers of different languages perceive colors in a very different way?

Individual differences in linguistic categories



Individual differences in linguistic categories

https://www.youtube.com/watch?v=tC5EulXKLPk
https://www.youtube.com/watch?v=ph7Tqnl_wA0

Prototype theory and odd numbers

- Even for concepts such as odd numbers, we find effects of prototypicality.

☞ Armstrong, Gleitman and Gleitman (1983) showed that speakers view some odd numbers are more prototypical than others.

❓ How can a category that can be defined in a clear and formal way show effects of prototypicality?

☞ Prototypicality is a cognitive concept and is of experiential nature. Even if being an odd number is not a matter of degree with fuzzy edges, we have more experience with *3,5,7* than with *4001*, and the former are more central for our conceptualization of the category of odd numbers.