

## Categorization

Classical view vs.  
Prototype Theory

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**Denotation:** Point to particular things or individuals

- **Proper names:** *Obama, Washington, Prospect Street, Peerless*
- **Pronouns:** *I, you, she, it*
- **definite article, demonstrative article, possessive article + noun:**  
*the sun, this student, those books, my computer, our class*

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**Connotations:** have meanings  
Common nouns

- **typically designate categories of things or beings**  
*books, students, chairs*
- **can even designate activities and abstract things:**  
*running, reading, freedom, ideas*

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## Classical Categorization

1. **Categories** are defined by the **properties** that all its members share (e.g. fish {**scales, fins, gills**})
2. The properties are **sufficient** [for defining a category] and **necessary** [for including any entity within the category]

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## Consequence of the classical view:

All members of a category, because they share the identical set of properties, are equal—i.e. *no member is more significant than any other.*

Example: **mammals**: {**tigers, kangaroos, platypuses**}

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## Prototype Theory

- Some entities are better exemplars of a category than other members of that category.
- Example: **mammals**: a tiger is a more **typical** mammal than a kangaroo or a platypus

Because of these asymmetries, all members of a category are not equal.

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### Evidence for “prototype effects”

- **Direct rating:** Subjects are asked to rate (from 1 to 10) how good is an example of a category.  
**bird:** {a robin, a chicken, a vulture}  
**chair:** {a desk chair, a barber chair, a beanbag chair, an electric chair}
- **Reaction times:** Subjects press a button to indicate “true” or “false”.  
Is a chicken a bird?  
Is a coyote a bird?  
Is a sparrow a bird?
- **Production of examples:** When asked to list or draw category members, subjects are more likely to produce the more representative examples.

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### In or out of a category?

Category “bird”:

**In:** {sparrows, robins, ducks, penguins, ostriches}

**Out:** {bat, butterfly}

Note: {penguins} are in the category “bird” but are **not** prototypical

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### ICC Case

Is a dressed eviscerated chicken a “manufactured product”?

- Question: Does ‘a dressed eviscerated chicken’ belong to the **category** of “manufactured product”?
- Agriculture says ‘no’—**not** in the category
- ICC says ‘yes’— **in** the category but **not necessarily prototypical**

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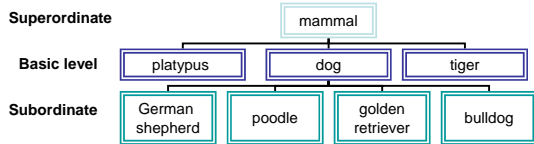
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## Basic-Level Effects



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## Primacy of the Basic Level

- The highest level where members have similarly perceived shapes
- The highest level where one can have a single mental image
- The level with the most commonly used labels for the category members
- The first level named and understood by children
- The level most accessible to second-language learners.

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