

Concepts, Ad hoc concepts & conceptual parameters

How is our knowledge organized, stored, and used?

In order to communicate we use a **repository of concepts, categories, and word meanings that are stable across time** and shared across individuals (e.g., Barsalou 1987; Casasanto & Lupyan 2015, Churchland 1986; Clark 1996, 1997; Elman 2004, 2009; Evans 2009; Hampton 2012; Machery 2009; Prinz 2002; Rogers & McClelland 2004; Smith & Samuelson 1997; Spivey 2007; Taylor & Zwaan 2009; Weiskopf 2009; Wittgenstein 1953)

It is well accepted that the sum of our experience is categorically represented via concepts stored in semantic memory.

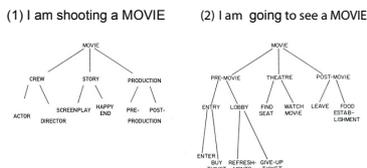
However, the nature of conceptual representations in the human brain still remains to be resolved.

Concepts:

= the most fundamental constructs in theories of the mind, so it is no surprise that they raise so many controversies in linguistics as well as in other disciplines:

- Should concepts be thought of as **bundles of features, or do they embody mental theories?**
- Are concepts **mental representations**, or might they be **abstract entities?**
- Are concepts **objects** or cognitive or behavioral **abilities** of some sort.
(Hampton 2012; Laurence & Margolis 2003, Margolis & Laurence 2008; Machery 2009)

Barsalou (1987: 119): concepts are fully formed entries in a mental encyclopedia, these discrete **even „live“ in our brains, when we are not using them**, given the fact that they are summoned as needed.



What is the conceptual information of „to hang“?

What if there is no „core“? (Wittgenstein 1953)

Our stock of stable (atomic) concepts may well far exceed our stock of simple lexical items (see Sperber and Wilson 1998).

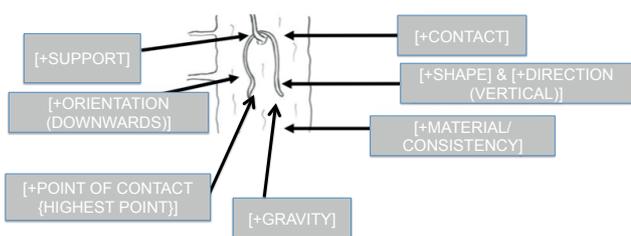
For example, a verb such as **“to hang”** may have very general meanings, but it is difficult to define a core!

Perception is global, but language is linear!

How can we explain, that something is hanging somewhere?

We need **anchorage points** in order to encode our perception linguistically!

These **anchorage points** are **perceptual parameters!**



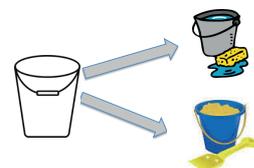
In French the „idea“ of „to hang“ is expressed by at least three verbs, each of them is focusing on a different perceptual parameter:

- (3) fr. Au jardin, les feuilles des arbustes pendent toutes droites et languissent après la pluie. (Gracq, 1974, Lettrines) [+GRAVITY]
'In the garden, the leaves of the bushes are hanging straight down without any power after the rain'.
- (4) fr. La lampe est suspendue au-dessus de la table. [+SHAPE] & [+DIRECTION (VERTICAL)] [+POINT OF CONTACT (HIGHEST POINT)]
'The lamp is hanging over the table'.
- (5) fr. Le téléphone est accroché au mur. [+CONTACT]
'The telephone is hanging on the wall'.

(Dubois, Dubois-Charlier 1999)

Concepts vs. Ad-hoc Concepts

Words have a **finite variety of meanings** and senses, and the context determines which of these gets **“accessed.”** (Casasanto & Lupyan 2015)
Accessing a word's meaning (or sense) means retrieving the appropriate concept (e.g., Jackendoff 2002; Elman 2004; Evans 2009).



Fixed core of a word's meaning that is activated “on all occasions” and is “unaffected by contextual relevance” (Barsalou 1982, 82)

Ad-hoc Concepts

The notion of *ad hoc* concepts was first introduced by Barsalou (1987: “On the Instability of Graded Structure” → Blutner 1998, Carston 2002, Casasanto & Lupyan 2015, Recanati 2004, Sperber & Wilson 2008, Wilson & Carston 2007)

One of the most intriguing claims of recent cognitive science is that **mental representations of objects and properties are very often constructed “on the fly” & can only be accessed in a given context through the process of pragmatic inference = mental constructions.** (Assimakopoulos 2008: 198)

(6) Sam is a **saint**. (Wilson & Carston, 2007)

The lexicalised concept SAINT gives access to a number of saintly properties. Only some of them are important to see how an utterance of “Sam is a saint” can communicate a proposition, knowledge of which will help to decide the issue under consideration. (Who shall I ask for help?)

(7) My job is a **jail**. (Leezenberg 2001: 286)



(Allott & Textor 2011)

- Word forms are cues to activate stored information, as needed and as determined by the specifics of the internal neurocognitive and external physical and social contexts.
- **Words do not have meanings; rather, a word-in-context is a cue to construct what can be called its meaning for a given instantiation** (Elman 2004, Casasanto & Lupyan 2015)

Ad-hoc readings of „to hang“ in French:

Rather than a process of accessing a preformed package of knowledge, instantiating a concept is **always a process of activating an ad hoc network of stored information in response to cues in context!**

- (8) On a **pendu** le nain à la potence.
'They **hung** the garden gnome'
[+GRAVITY] → [+WEIGHT]
- (9) On a **suspendu** la séance.
'The seance has been **canceled**'
[+SHAPE] & [+DIRECTION (VERTICAL)] & [+POINT OF CONTACT (HIGHEST POINT)] → [+HIERARCHY]
- (10) Il a **accroché** sa veste à un clou.
'He **ripped** his jacket on a nail'.
[+CONTACT] → [+CONSEQUENCES]

Traditional view:

„Human concepts are assumed to be situational invariant mental knowledge entities (“conceptual stability”) that constitute an amodal “**language of thought**” distinct from **perception and action** (Tyler & Moss, 2001; Anderson, 1978; Fodor, 1975).“ (Hoenig et al. 2008

Vs.

Conclusion:

- Concepts in themselves are global, yet while transferring these mental images into language, originally stable concepts – due to the linearity of language – need to be broken down into describable entities.
- A synchronic and diachronic analysis of more than 800 words from various Romance Languages revealed that it is exactly the breaking down of a concept into individual (at the same time universal) slices that allows for the diachronic flexibility of the concept, given the fact that whenever the concept is linguistically activated, the speaker has a choice of anchoring points (i.e., parameters). The latter may vary over time.
- In the beginning, prototypical parameters of the concept are favored, but with time the salience of these entities (due to frequency patterns and loss of expressivity) can alter. In sum total, the gap between the assumed stability of concepts on the one hand, and their flexibility in usage on the other, can be bridged by presuming that our knowledge is not organized in stable concepts but rather in flexible parameters which, in mutual interrelation, define and prime said concepts (see Barsalou, Wilson, and Havenkamp 2010; Spivey 2007).
- What we consider as „concepts“ is actually an agglomeration of perceptual parameters. While concepts are more or less stable, conceptual parameters are flexible & fluid entities. The combination patterns of these parameters is language and culture dependent → different anchorage points!
- Ad-hoc concepts neither store information, nor provide a new source domain for an infinite number of contexts as concepts do!



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