



SFB 991

CRC 991: The Structure of Representations in Language, Cognition and Science.

Subproject C04: Conceptual Shifts – their Role in Historical Semantics.

Gaining Concepts by Productive Action?

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Introduction

Embodiment theories of cognition suggest that **action concepts** such as *grasping* are grounded in sensory-motor representations. We “simulate” actions and perceptions of actions when we think about actions. Since *grasping* is not the only example for basic interactions with our environment, we should also consider other concepts. What is, for instance, about ‘**structuring concepts**’ such as *composing*, *putting together*, *splitting*, *cutting*, *breaking*., i.e. concepts expressing **structural modifications of objects**. What can we say about their (neuronal) constitution? This paper’s hypothesis is that these concepts can be explained by taking **results** of manipulating as to be involved in the **content** of the very concepts.

This idea will be developed within the field of **historical semantics** by considering the semantic development of French structuring verbs to their nominal derivatives and, on the other hand, by tracing verbs to their Latin sensory-motor meanings.

Evolutionary artefact theory will serve as an explanation.

(a) Structuring Concepts develop to ‘Cultural Concepts’

- In modern French nominal derivatives of structuring verbs denote different sorts of **cultural items**, consider for example:

- *combiner* (to build) > *combinaison* (suit)
- *composer* (to compose) > *composition* (piece of music)

- Linguistically, the **meaning change** can be explained by **metonymy**.

For instance, *composition* denoted first the **action** of composing and then shifted to denoting the **result** of composing, i.e. the composed thing (see more on metonymy in Kimm et al. 2012).

- BUT: Since not all compositions, i.e. composed things, are pieces of music, it remains puzzling how the term ‘composition’ got the **domain specific** meaning PIECE OF MUSIC.
- Moreover, it can be supposed that the first objects that our (Romance) ancestors acted on were primarily **environmental** objects. If you trace in historical dictionaries the French verbs back to their Latin origins, you will detect their **sensory-motor** components.
- So, which kind of **mechanism** can serve for explaining the transformation of concrete concepts into different domains?

Conclusion

Linguistic data suggests that many cultural concepts are developed from structuring concepts due to contiguity relations. (EAT) confirms that artefacts can be characterized in terms of the actions by which they are produced. The question whether productive actions, i.e. the products of the actions take conceptually part in the corresponding structuring concepts seems to depend on the question whether we at all represent objects in terms of structures. There are **neurobiological** findings that confirm structural representations of objects (see e.g. Werning 2012). In order to see whether structural representations of objects play a role for (developing) structuring concepts, it could be useful to set up **experiments** for investigating *creations* of objects. Some proponents of embodied cognition (e. g., Barsalou & al., 2003) hold that action-driven conceptual knowledge of artefacts grounds on sensory-motor representations as they are important for **using** manipulable artefacts. But there are evidences against (e.g., see Mahon & Caramazza 2007), so that the views are not prima facie true. Data from historical linguistics and arguments from artefact theory give **new stimuli** for continuing grounded cognition research.

(b) Evolutionary Artefact theory (EAT) meets

Linguistics

- Theories such as Oswald’s (1973) and Beck’s (1980) theories are compatible with the metonymic approach to the shift kinds in (a). (EAT) characterizes artefacts in terms of **productive action**.

Artefacts are characterized in terms of *the* actions by which they are produced. Basic actions are *separating*, *reshaping* and *conjunction*.

- Accordingly, the objects of manipulation are considered to be mainly **natural ones**. (EAT) thus suggests that cultivation has its source in **basic activities**:

Making a walking-stick by breaking a limb from a tree and stripping it of leaves and bark consists of acts of separation (SEP: artifact).

(c) The Usefulness of the (EAT) Approach and the

Basic Idea

- Presupposed that cultural development has its source in sensory-motor manipulations, we can postulate **cognitive mappings** in order to explain the semantic development of structuring concepts.
- Basically, the idea is that our ancestors **observed** and **memorized** which kind of structuring processes led to which kind of structural manipulations.
- With (EAT), we can also postulate the **practice** of structuring, i.e. that our ancestors deployed their sensory-motor concepts in order to create new objects.

(d) The Content of Structural Concepts

- The hypothesis simply is that structural concepts could develop to cultural concepts because structural concepts **entail** object structuring.
- Linguists speak about **arguments** of verbs. The verb *construire* for instance entails that there is something to be constructed.

From that point of view, it seems to be plausible that ‘the object to be manipulated’ takes conceptually part in a structuring concept.

(e) More Data

In **verb-noun-combinations** verbs designating specific manipulations of objects co-occur with **correspondingly** structured objects. Consider for example:

- *construire* + *échafaudage* (falsework)
- *composer* + *pièce de musique*

- Do these nouns co-occur with these verbs because the actions reveal something about the **structural constitution** of the objects in question?

In other words, do these nouns co-occur with the verbs in question because of **contiguity relations** (like in (a))?

References

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