Gaining Concepts by Productive Action?

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Introduction

Embodiment theories of cognition suggest that action concepts such as grasping are grounded in sensorimotor 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 “evidences against (e.g., see Mahon & Caramazza 2007), so that the views are not prima facie true. Data from historical linguistics suggests that many cultural concepts are developed from structuring concepts due to contiguity relations. (EA)

(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?

(b) Evolutionary Artefact theory (EAT) meets Linguistics

• Theories such as Oswalt’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.

  Artfacts 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 + échaffaudage (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))?}

Conclusion

Linguistic data suggests that many cultural concepts are developed from structuring concepts due to contiguity relations. (EAT) confirms that artefacts can be evidenced in terms of 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 even 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.

References


