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COGNITIVE SCIENCE SHOWS THAT OUR BODILY EXPERRIENCES PLAY A CRUCIAL ROLE IN SHAPING HOW WE UNDERSTAND AND USE LANGUAGE

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Abstract. This article delves into the emerging area of embodied cognition and its effects on language understanding. It analyzes the foundational theories behind embodied cognition, emphasizing the role of sensorimotor experiences in shaping our comprehension and interpretation of language. We also summarize important empirical research that shows how physical states and movements impact different elements of language processing, including understanding metaphors, spatial language, and action verbs. In conclusion, we address the consequences of embodied cognition for theoretical frameworks of language as well as practical fields like language education and rehabilitation.

Key words: theoretical frameworks, comprehension, consequence, abstract symbol, embodied cognition, emphasizing the role, embodied approaches, spatial language.

Introduction

The traditional view of language processing often depicts it as a purely symbolic and abstract process, largely detached from the physical body. However, the field of embodied cognition challenges this perspective, arguing that our understanding of the world and our language are fundamentally grounded in our bodily experiences and sensorimotor interactions with the environment. This perspective suggests that language comprehension is not merely a matter of manipulating abstract symbols, but involves actively reactivating and simulating the sensory and motor experiences associated with the linguistic input. This article explores the evidence supporting this claim, examining how bodily experience influences different aspects of language comprehension.

Theoretical Underpinnings of Embodied Cognition:

Several theoretical frameworks support the embodied cognition approach. Grounded cognition proposes that meaning arises from sensorimotor experiences, with abstract concepts being grounded in concrete, bodily simulations. Situated cognition emphasizes the role of the environment and context in shaping our cognitive processes, arguing that cognition is not a solitary, internal process but is deeply intertwined with our interactions with the world. These theories suggest that understanding language involves more than just semantic processing; it also engages our sensorimotor systems, reactivating relevant experiences to create a richer, more meaningful understanding.

Empirical Evidence for Embodied Language Processing:

- **Metaphor Comprehension:** Research suggests that understanding metaphors often involves simulating the sensory and motor experiences associated with the metaphorical terms.

For example, understanding "a heavy burden" might involve activating motor schemas related to lifting and carrying weight.

- **Spatial Language:** Our understanding of spatial terms ("above," "below," "left," "right") is influenced by our bodily orientation and spatial experiences. Studies have shown that manipulating body posture can affect the speed and accuracy of spatial language processing.
- **Action Verb Processing:** Processing action verbs (e.g., "kick," "throw") appears to involve activating motor representations related to the described actions. Neuroimaging studies have revealed activation in motor cortex areas during the processing of such verbs.
- **Emotional Language:** The comprehension of emotional language might be influenced by the bodily sensations associated with those emotions. For example, understanding "fear" might involve activating physiological responses associated with fear, such as increased heart rate.

Implications and Future Directions:

- **Language Education:** Embodied approaches to language teaching might enhance comprehension and retention by incorporating activities that engage the learner's sensorimotor systems.
- **Rehabilitation:** Understanding the embodied nature of language can inform the development of therapeutic interventions for language disorders, such as aphasia.
- **Artificial Intelligence:** Embodied AI systems, which integrate physical embodiment and sensorimotor capabilities, could lead to more sophisticated and human-like language understanding.

Future research could further explore the neural mechanisms underlying embodied language processing, investigate the role of embodiment in different linguistic phenomena, and examine the interplay between embodiment and other cognitive processes in language comprehension.

5. Comprehension as a body-bound phenomenon:

Approaches of Embodied Cognition A possible way out of the aporetic circle of representationalism is offered by more recent scientific approaches of various provenances, which operate under the collective term of an Embodied Cognition. Their common basis is arguably the idea that the generation of meaning, and comprehension are contingent on physical experiences. This mindset is fed by older traditions such as American pragmatism or that of a body- related phenomenology in the sense of Merleau-Ponty; it has also received important input from advances in neurophysiological research, in particular the discovery of so- called mirror neurons.

If, as the now canonical experiment by di Pellegrino et al. (1992) was able to show, a certain group of neurons in the pre-motor cortex of a primate fires whenever the test animal executes the movement of grasping; but also whenever it merely observes this movement –carried out by another –then the conclusion is obvious that the observation of a grasping movement implies an understanding of action that is bound to the body[7]. The act of grasping something is understood as grasping holistically, as the observer mentally follows the act of grasping by way of trial. To understand something as something would therefore come down to doing this thing oneself in the mind. This should also apply to language comprehension [8]. To understand a term like ‘grasping’ would then mean to perform a trial action –amentalgrasp.

The driving forces of Embodied Cognition include psycholinguists such as George Lakoff and Mark Johnson, who presented an influential model of metaphor comprehension as early as 1980. Johnson has since systematized this approach and has developed it into a body-bound theory of language and epistemology [8]. The title of his monograph, published in 1987, expresses its core ideas clearly: The Body in the Mind. The Bodily Basis of Meaning, Imagination, and Reason. According to this study, the mind appears to be fundamentally

determined by the body insofar as it always makes use of so-called image schemata when forming concepts. For example, there is a "container schema" [9], which defines and bundles basic ideas of an inside and an outside space, of containment and exclusion. Such morphological schemes of imagination, it is argued, derive from physical experiences in dealing with the environment; which are then also metaphorically transferred to areas which may themselves abstract far from physical interactions –areas of logical thinking and argumentation .

Conclusion

The evidence increasingly supports the idea that language comprehension is not a purely abstract process but is intimately linked to our bodily experiences. Embodied cognition provides a powerful framework for understanding how our sensorimotor systems contribute to creating meaning from language. Further research in this area promises to deepen our understanding of the human mind and to inform the development of innovative applications in various fields.

References:

1. Gallese, V., & Lakoff, G. (2005). The Brain's Concepts: The Role of the Sensory-Motor System in Conceptual Knowledge. Cognitive Neuropsychology, 22(3-4), 455-479.
2. Glenberg, A. M. (2015). Few believe the world is flat: How embodiment is changing the scientific understanding of cognition. Canadian Journal of Experimental Psychology, 69(2), 165-171.
3. Kövecses, Z. (2015). Where Metaphors Come From: Reconsidering Context in Metaphor. Oxford University Press.
4. Sanatovna, Narzullaeva Dilnoza. "English And Uzbek Idioms Describing Human's Emotional State." European Scholar Journal 2.8 (2021): 89-91.