具身语言学

人工智能时代的语言科学

Embodied Linguistics

Language Science in the Era of Artificial Intelligence

官 群 著

科学出版社

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——人工智能时代的语言科学

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序 一

In this book, Dr. Guan introduces the Chinese reader to the systematic theoretical framework of language embodiment. This framework covers five specific linguistic elements: lexicon, semantic, phonology, syntax and discourse and pinpoints practical implications for language education from the perspective of language embodiment.

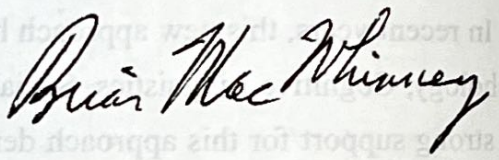
In recent years, this new approach has gained increasing traction within Cognitive Psychology, Cognitive Linguistics, Social Psychology, Education, and Neurolinguistics. One strong support for this approach derives from the fact that the human mind exists within the human body. However, during the early periods of Cognitive Science the tendency to view the brain in terms of the architecture of the digital computer obscured many of these relations. More recently, as neuroscience has begun to identify specific perception-action pathways, mirror neurons, and topological mapping patterns in the brain, as psychologists have identified specific behavioral effects of embodiment, and as cognitive linguists have presented evidence for the embodied grounding of language, the picture has changed radically. Currently, all of the relevant branches of Cognitive Science have come to recognize some role for embodiment in mental processing. In effect, the theory of embodied cognition has produced a major revolution in our understanding of the development, processing, and evolution of cognition and language. The question that remains is exactly when and how embodiment shapes cognition and language.

Dr. Guan shows how powerful neuroimaging methods such as fMRI, NIRS, and ERP can help us to trace the encoding of words and concepts in the brain. Based on both imaging and experimental data, newer psycholinguistic models emphasize the role of perspective shifting and maintenance during online sentence comprehension and production. Together, these processes help the language user build up mental models for effective dialog, narrative, and problem-solving.

Within Education, the idea that learning is based on actions of the body has its roots in the early 20th century, when Montessori and Dewey emphasized the importance of "learning by doing" through direct physical contact with objects. This

emphasis also shows up in Chinese education in terms of the reliance for character learning on repeated drawing of characters through strokes. In Social Psychology, we see an increasing emphasis on the role of physical imitation, contact, and social metaphor in forming groups and social concepts.

This book provides the Chinese reader with a solid introduction to all of these new ideas. By covering each of the relevant sources of new ideas and research, Dr. Guan helps the reader to understand the true scope and breadth of this revolution in Cognitive Science.



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