

哲学与认知科学文丛

Series in Philosophy
and
Cognitive Science

认知视野中 的哲学探究



PHILOSOPHICAL INVESTIGATIONS FROM A PERSPECTIVE OF COGNITION

[意]洛伦佐·玛格纳尼 李 平 主编

Edited by Lorenzo Magnani and Li Ping

广东人民出版社

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序

洛伦佐·玛格纳尼

认知科学是研究心灵和智能的跨学科领域，包括哲学、心理学、人工智能、神经科学、语言学和人类学。它发源于20世纪50年代中期，当时有多个领域的研究者在复杂表达和计算程序的研究基础上提出心智理论。而这个学科的组织建制则始于20世纪70年代中叶，期间认知科学学会和《认知科学》杂志先后创办。此后，北美和欧洲有超过60所大学设置了认知科学专业，有更多的大学开设了各类认知科学课程。近些年来，东方国家对认知科学的兴趣也每日俱增，中国就是其中的重要国家。

本卷文集收编的论文，展现了认知科学研究在中国的活跃氛围及其与哲学传统的有机统一关系。这些论文恰如其分地向多学科读者介绍了认知科学。文集第一编集中关注不同领域中科学和日常推理的问题求解，触及逻辑和认识论的多个主题，如溯因推理与科学发现（L·玛格纳尼）、基于模型推理（李平、李大超，魏屹东）、观察的作用（周燕）、理论的不可通约性（林涤凡）、还原（沈健）、直觉（黄敏）和语用学（闫坤如）。第二编按照涉及心智不同功能的研究来编排论文，这部分论文对若干重要问题进行了分析，例如，感知控制论（张华夏、颜泽贤、范冬萍），涉身认知（刘晓力），指称（任远），问题求解、记忆、学习、禅和宗教传统（周昌乐，张宪），以及文化（洪定国、容青艳）。此外，第二编还有部分西方著名研究者的论文，主要讨论认知和心智的基础，提供了这个领域的经典观点，如福多的心智表达论及其批

评 (S·霍斯特), 联结主义 (T·霍根), 意识 (P·卡鲁瑟斯)。

读者可以发现, 这些论文 (即使是批判性的) 系统地评述了认知科学家所主张的种种重要的心理表达理论, 包括关于逻辑、规则、概念、类比、意象和联结 (人工神经网络) 等方面的作用的想法。通过讨论这些基础理论研究方法和进路, 本书提供了一条有益的途径, 将不同领域的认知科学家对于理解各种重要心理活动所做的贡献呈现给读者。

本书的主要对象是研究人员, 但对于想要了解自己的学科在认知科学中的合适位置的研究生和教师来说, 也是有帮助的。它将认知科学当作交叉学科而非多领域的统一学科来看待, 因此, 每篇论文只论述某个特殊问题的新近看法, 同时给读者建议进一步阅读的其他文献。

最近, 我还同李平 (本卷主编之一) 一道筹备组织 “科学和医学中基于模型的推理国际研讨会” (简称 MBR06 _ CHINA, 2006 年 7 月在广州举行)。我们相信, 东、西方之间分享和融合各种不同思想观点, 对于促进学术研究本身, 改善相互关系, 以及加强富有成效的合作都十分重要。我们曾经激情般地工作, 在提出和利用心理表达和计算的理论来理解心智方面有所贡献; 我们也认识到认知科学还有很长的路途, 其中需要中国思想家们的独创工作和新的贡献, 这也是我要支持和促进的事情。从这个角度看, 本书的许多论文讨论了认知科学基础假设遇到的挑战, 提出了未来跨学科研究的方向。

这里我向意大利帕维亚大学, 美国佐治亚理工学院, 美国纽约城市大学, 以及中国中山大学在过去的 8 年中参与我的教学和研究活动的学生和同事们表示感谢。MBR06 _ CHINA 会议的举行以及本书的出版, 得到中山大学、意大利大学部 (MIUR)、帕维亚大学和米兰 CARIPLO 基金会 (Cassa di Risparmio delle Provincie Lombarde) 的慷慨资助, 值此一并致谢。最后, 感谢

李平为我们双方共同的合作研究计划以及在认知科学和哲学领域中的交流所提出的宝贵建议和所做的工作。

2006 年 4 月于意大利帕维亚

Preface

Cognitive science is the interdisciplinary study of mind and intelligence, embracing philosophy, psychology, artificial intelligence, neuroscience, linguistics, and anthropology. Its intellectual origins are in the mid-1950s when researchers in several fields began to develop theories of mind based on complex representations and computational procedures. Its organizational origins are in the mid-1970s when Cognitive Science Society was formed and the journal *Cognitive Science* began. Since then, more than sixty universities in North America and Europe have established cognitive science programs and many universities have instituted courses in cognitive science. In the last years the interest in cognitive science also increased in Eastern countries. China is an important example.

The papers that are collected in this book demonstrate how cognitive science research is alive in China and how it is strongly integrated with philosophical tradition. The papers are very appropriate to introduce cognitive science to a multidisciplinary reader. The first part concentrates on the different fields of problem-solving in science and ordinary reasoning, touching themes that concern logical and epistemological topics like abduction and scientific discovery (L. Magnani), model-based reasoning (P. Li, D. Li, Y. Wei), the role of observation (Y. Zhou), the incommensurability of theories (D. Lin), re-

duction (J. Shen) intuition (M. Huang), pragmatism (K. Yan). The second organizes the discussion in the light of research related to the different functions of mind, analyzing important issues such as perception and cybernetics (H. Zhang, Z. Yan, and D. Fan), embodiment (X. Liu), reference (Y. Ren), problem solving, memory, learning, Zen and religious tradition (C. Zhou, X. Zhang), culture (D. Hong and Q. Rong), and also host papers of prominent western researchers that offer classical perspectives like the one of Fodor -the representational theory of the mind - and its critique (S. Horst), connectionism (T. Horgan), and consciousness (P. Carruthers)

The reader can also take a further learning advantage because the various papers - even if critique in nature -systematically describe and evaluate the main theories of mental representation that have been advocated by cognitive scientists, including the role of logic, rules, concepts, analogies, images, and connections (artificial neural networks). Discussing these fundamental theoretical approaches the book provides a useful way of presenting the contributions of the different fields of cognitive science to understanding various important mental functions.

Although this book is intended for researchers, it should also be useful for graduate students and faculty who want to see how their own fields fit into the general enterprise of cognitive science. The book depicts cognitive science as the intersection rather than as the union of many relevant fields, and each paper furnishes an updated perspective of a particular issue also

providing bibliographies that are suggestions for further reading.

In the last years I worked with Li Ping (co-author of this book) also to organize the Conference MBR06 _ CHINA (Model-Based Reasoning in Science and Medicine) in Guangzhou (July 2006), convinced that sharing and mixing intellectual perspectives in the Eastern and Western parts of the world is fundamental for the improvement of research itself but also for the mutual relationships and fecund cooperation. We worked with great enthusiasm for what theories of mental representation and computation have contributed to the understanding of mind, but also with awareness that cognitive science has a long way to go and that it will take advantage of the original and new contributions of the Chinese thinkers that I strongly encourage to follow this path. In this perspective many papers discuss challenges to the basic assumptions of cognitive science and suggests directions for future interdisciplinary work.

I am grateful to the students and colleagues at the University of Pavia (Pavia, Italy), Georgia Institute of Technology (Atlanta, US) The City University of New York (New York, US), Sun Yat-Sen University (Guangzhou, China) who participated in the last eight years in my didactic and research activities. The conference MBR06 _ CHINA, and this book, was made possible also through the generous financial support of Sun Yat-Sen University, of the MIUR (Italian Ministry of the University), of the University of Pavia, and of Fondazione CARIPLO of Milan (Cassa di Risparmio delle Provincie Lombarde). Their support is gratefully acknowledged. Special

thanks to Ping Li for his valuable suggestions and strong commitment to cognitive science and philosophy and to our shared various research projects.

Lorenzo Magnani

**University of Pavia, Italy, and
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Guangzhou, P. R. China
Pavia, Italy, April 2006**

目 录

序	洛伦佐·玛格纳尼 (1)
---------	--------------

第一编 溯因推理、科学与日常推理

人类主体和逻辑主体的溯因与认知

..... 洛伦佐·玛格纳尼/任 远 刘玉宇译 (3)	
科学推理的认知分析: MBR 论题	李 平 李大超 (47)
科学中的预设、证据和基于模型的推理	魏屹东 (81)
观察与理论关系	
——基于表达的认知分析	周 燕 (100)
库恩不可公度性学说的发展和认知转向	林涤凡 (120)
问题还原	
——被遗忘的研究视角	沈 健 (141)
认知推理的直觉相关性	黄 敏 (155)
认知语境与语用推理	闫坤如 (176)

第二编 认知、心智及其基础

认知控制论

——对鲍威斯的感知控制论的拓展研究	
..... 张华夏 颜泽贤 范冬萍 (193)	
交互隐喻与涉身认知	刘晓力 (234)
指称性交流中的认知意义	任 远 (247)

禅宗的超元思维方式及其现代意义	周昌乐 (268)
宗教信仰的认知分析	张 宪 (284)
戴维·玻姆的对话观是对人类传统思想文化的超越	洪定国 容青艳 (303)
心的表达理论	杰里·A·福多/任 远 李 静译 (315)
符号与计算 ——心智计算理论的批评	史蒂文·霍斯特/李太超 张 莉译 (334)
联结主义与认知科学的哲学基础	特伦斯·霍根/李大超 周朝霞译 (380)
意识的自然理论	彼得·卡鲁瑟斯/陈玉云 林 影译 (416)

Contents

Preface

..... *Lorenzo Magnani* (1)

Part I Abduction, Science and Ordinary Reasoning

Abduction and Cognition in Human and Logical Agents

..... *Lorenzo Magnani* / *trans. by Ren Yuan*

..... *and Liu Yuyu* (3)

A Cognitive Approach to Scientific Reasoning: MBR Thesis

..... *Li Ping and Li Dachao* (47)

Presupposition, Evidence, and Model-Based

Reasoning in Science

..... *Wei Yi-dong* (81)

The Observation-Theory Relationship: A Representation-

Based Cognitive Analysis *Zhou Yan* (100)

The Cognitive Turn of Kuhn's Incommensurability Thesis

..... *Lin Difan* (120)

The Reduction of Problems: A Forgotten Eyeshot

of Studying Reduction

..... *Shen Jian* (141)

The Intuitive Relevance of Cognitive Reasoning

..... *Huang Min* (155)

Cognitive Context and Pragmatic Inference

..... *Yan Kunru* (176)

Part II Cognition and Mind

Cognitive Cybernetics: An Extended Study of Powers'

Perceptual Cybernetics

..... *Zhang Huaxia, Yan Zexian,*
..... *and Fan Dongping* (193)

Interaction Metaphor and Embodied Cognition.

..... *Liu Xiaoli* (234)

Cognitive Significance in Referential Communication

..... *Ren Yuan* (247)

Transcendental Thinking of Zen and Its Modern Significance

..... *Zhou Changle* (268)

A Cognitive Analysis of Religious Beliefs

..... *Zhang Xian* (284)

David Bohm's View of Dialogue Is Beyond the Traditional

Thought and Culture of Mankind

..... *Hong Dingguo and Rong Qingyan* (303)

The Representational Theory of Mind

..... *Jerry. A. Fodor / trans.*

..... *by Ren Yuan and Li Jing* (315)

Symbols and Computation; A Critique of the Computational

Theory of Mind

..... *Steven Horst / trans.*

..... *by Li Dachao and Zhang Li* (334)

Connectionism and the Philosophical Foundations of

Cognitive Science

..... *Terence Horgan / trans. by*

..... *Li Dachao and Zhou Zhaoxia* (380)

Natural Theories of Consciousness

..... *Peter Carruthers / trans. by*

..... *Chen Yuyun and Lin Ying* (416)

第一编

溯因推理、 科学与日常推理

