COGNITION AND PERCEPTION IN THE LINGUISTIC ENCODING OF SPACE IN CHILD MANDARIN

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ABSTRACT
This study examines the linguistic encoding of space in Mandarin-speaking children based on a corpus study and a series of experimental tasks. It is shown that cognitive development plays a significant role in the development of spatial language. The acquisition of pang ‘side’ before you ‘right’ is accounted for by the cognitive complexity of the localizers. Cognitive egocentricity biased children under 4;0 towards

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the aligned strategy in interpreting qian ‘front’ and hou ‘back’, and caused 6-year-olds to rely on the viewer-centered frame of reference in interpreting zuo ‘left’ and you ‘right’ when the reference entity has inherent orientation. Our findings show that young children are sensitive to the Figure-Ground asymmetry, a cognitive constraint, and perceptual cues influence children’s choice of reference strategies.

KEYWORDS
Child spatial language  Cognition  Perception  Egocentricity
Frame of reference  Reference strategy

1. INTRODUCTION
While some animals can communicate the location of food in an elementary way, human beings are unique in their ability to use spatial language which represents the convergence of linguistic, perceptual, and other cognitive systems. In the present study, three distinct kinds of space are distinguished: space as it is, space as humans perceive it (P-space) and space as encoded by human language (L-space) (Clark 1973; Miller and Johnson-Laird 1976). In this study, phenomena in spatial language such as the choice of frames of reference, and the asymmetry of Figure and Ground will be examined to better understand the relationship between language, perception and cognition in the domain of space. In what follows, the term cognition is used exclusively to refer to non-linguistic and non-perceptual cognition, including memory, attention, reasoning, problem solving, and so on. The fundamental questions to be addressed are how L-space is modulated by the perception and conceptualization of space, and how it is acquired by children.

In contrast to Clark’s (1973) view that various languages share much in common due to human beings’ common perceptual processes, Levinson (1996a, 1996b, 2003) and Levinson and Wilkins (2006) revealed great variation in choosing frames of reference among different cultural groups. English-speaking adults, for instance, tend to use the viewer-centered frame of reference for words such as left and front, while Tzeltal or Arrernte rely heavily on an environment-centered system with cardinal directions exemplified by uphill or north. When the reference entity has no intrinsic orientation, there are also cross-cultural differences in the choice of reference strategies: speakers may establish a larger field of orientation, either aligned with or facing the speaker’s field, to locate the objects. The


认知与知觉在普通话儿童空间编码中的作用

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提要

基于语料库研究和一系列实验, 本文探讨汉语普通话儿童的空间编码情况。我们发现认知发展在空间语言习得中起到重要作用。方位词内在的认知难度可以解释为什么儿童先习得“旁”后习得“右”。因为受认知上的“自我中心”影响，四岁以下的儿童会倾向用顺向策略来解读“前”和“后”；当参照物没有内在方向时，六岁儿童主要依靠以视者为中心的参照系统来理解“左”和“右”。我们还发现儿童对目标物-参照物非对称性很早就非常敏感，证实这是一个认知上的普遍制约。知觉上的线索也会影响儿童对参照策略的选择。

关键词

儿童空间语言 认知 知觉 自我中心 参照系统 参照策略