

The Development of Chinese Word Reading: Relations of Sub-Character Processing, Phonological Awareness, Morphological Awareness, and Orthographic Knowledge to Chinese-English Bilingual Reading

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Abstract

This study examined the roles of sub-character processing, phonological awareness, morphological awareness, and orthographic knowledge, measured using twelve different tasks hypothesized to indicate these four broad constructs, in Chinese character recognition and English word reading among 536 Hong Kong Chinese kindergartners, second- and fifth-graders. The twelve tasks generally showed an increase in performance with grade level. Confirmatory factor analyses comparing alternative models of these four constituents of Chinese word reading revealed a dynamic pattern of children's latent linguistic or reading processing skills development: The best-fitting model of kindergartners' processing was one that included two broad constructs, broadly termed metalinguistic processing and orthographic processing. In contrast, second-graders showed a fine-grained sensitivity to four distinct skills of sub-character processing, phonological awareness, morphological awareness, and orthographic knowledge. Finally, the latent processing skills of the fifth-graders converged into phonological and orthographic processing. The contributions of each of these initially specified constructs, i.e., sub-character processing, phonological awareness, morphological awareness, and orthographic knowledge, to Chinese word reading varied across each separate grade in regression analyses. The sub-character processing construct was uniquely associated with kindergarten Chinese word reading only. In contrast, the morphological awareness construct was uniquely associated with Chinese word reading in both second- and fifth-graders. The orthographic knowledge construct was uniquely associated with word reading across all three grades. However, the phonological awareness construct was not uniquely associated with Chinese word reading in any of the groups of children, though it was uniquely associated with English word reading, even with Chinese character recognition skill statistically controlled. These findings demonstrate how Chinese word reading might develop across age and highlight the importance of sub-character processing, morphological awareness and orthographic knowledge for Chinese word reading development as well as the importance of phonological awareness for English word reading.

摘要

本研究通過採用十二種不同類型的任務考察兒童的亞辭彙加工，語音意識，語素意識，和正字法加工在中英文閱讀中的作用。被試主要包括 536 名幼稚園，二年級和三年級不同年齡階段的香港漢語兒童。兒童閱讀任務的成績隨著年齡增長而提高。在對亞辭彙加工，語音意識，語素意識，和正字法加工四種成分組成的不同模型的驗證性因素分析結果表明：與閱讀有關的潛在能力因兒童發展階段的不同而變化。具體而言，幼兒閱讀的成分模型概括為元語言加工和正字法加工能力；二年級兒童的閱讀能力進一步分化，主要包括亞辭彙加工，語音意識，語素意識，和正字法加工四種潛在成分；而五年級兒童的閱讀能力的成分則概括為語音加工和正字法加工。多元逐步回歸分析進一步表明，亞辭彙加工，語音意識，語素意識，和正字法加工對兒童中文閱讀的影響隨著年齡而變化。亞辭彙加工只對幼兒的閱讀成績有預測作用，語素意識對二年級和五年級兒童的中文閱讀成績有預測作用，但是正字法加工對三個年級的兒童中文閱讀成績都有顯著預測作用。相對照而言，語音意識與三個年級兒童的中文閱讀成績無顯著相關，但對三個年級兒童的英文閱讀成績有顯著的預測作用。本研究結果揭示了中文閱讀發展的過程，並強調亞辭彙加工，語素意識和正字法加工在中文閱讀中的重要作用，以及中文的語音意識對英文學習的促進作用。