

Processing East Asian Languages: An Introduction

Hsuan-Chih Chen

The Chinese University of Hong Kong

Xiaolin Zhou

Cambridge University and Peking University

INTRODUCTION

There has been substantial progress over the past decades in understanding the processes underpinning various language activities. However, most research in this field has been carried out using materials in English or other European languages, and only a small amount has been addressed to non-European languages. This bias presents a serious obstacle to the development of a general theory of language processing for at least two reasons (for relevant discussions see Chen, 1992, 1996).

First, because there are striking differences between European and non-European languages, it is by no means self-evident that the same processes are used in the different languages. For instance, contemporary theories of language processing unexceptionally consider words as the basis of complex comprehension processes (Marslen-Wilson & Tyler, 1980; Rayner & Pollatsek, 1989). This is not surprising, because, after all, words are transparent units for speakers of European languages. However, it is not obvious whether the same arguments and conclusions relating to word processing that have been reached through psycholinguistic studies with European languages can be generalised to other languages, such as

Requests for reprints should be addressed to H.-C. Chen, Department of Psychology, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong. Email: hcchen@psy-cuhk.edu.hk

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Chinese, in which words are not transparent units (Chen, 1999; Hoosain, 1992).

Second, a psycholinguistic theory developed from a limited set of languages may not account for the roles in processing played by the orthographic and linguistic properties not existing in that specific set of languages. Take lexical tone as an example. In order to understand how tone is used in word recognition and language processing (Cutler & Chen, 1997; Ye & Connine, this issue; Zhou & Marslen-Wilson, 1997), one has no choice but to study non-European languages, such as Chinese and many African languages, because tone is not used in major European languages to distinguish lexical items.

Fortunately, there has recently been acceleration in both the recognition and correction of this bias for solely using European languages to study language processing. In fact, there has been in recent years an upsurge of interest in the processing of major East Asian languages such as Chinese, Japanese, and Korean. These languages, due to their salient differences in structure from European languages, provide challenging opportunities to explore both language-specific processes involved in comprehension and communication, and the universality of theories developed from the study of European languages.

CONTENTS OF THIS SPECIAL ISSUE

The 11 papers in this special issue on processing East Asian languages deal with a range of topics in psycholinguistics, and all of them report new, empirical research. These papers can be grouped into two parts. Part one includes seven papers on lexical and sub-lexical processing.

The first three papers focus on the possible role of phonology in processing a visually presented lexical item. This issue has been the focus of a great deal of research in the literature, but no consensus has been reached to date. In the first of these, Shen and Forster, by using a masked priming paradigm with naming and lexical decision tasks, demonstrate that phonological priming effects in Chinese character recognition are task-dependent. Wong and Chen (the second paper) investigate the time course of orthographic and phonological activation in reading Chinese text by analysing different types of eye movement data. Cho and Chen (the third paper) examine the activation of graphemic and phonological information in the semantic processing of Korean Hanja (a logographic script originally borrowed from the Chinese) and Hangul (a phonetic script). They also explore whether proficiency in Hanja affects the use of phonology in comprehending Hanja characters. The results from all three studies converge to show that phonology is not likely to play a significant role in processing logographic characters for skilled adult readers.

As mentioned above, words are not transparent units in Chinese where they can be made up of one or more characters. Chinese characters, however, are distinct orthographic units of the language and are typically morphemes. Different characters are made up of strokes and radical components. The following two articles are concerned with the sub-morphemic and supra-morphemic levels of processing in Chinese. Wu, Zhou, and Shu (the fourth paper) look at the development of sublexical processing in naming Chinese characters. They suggest that character components are processed and used in character recognition from the very beginning of learning to read. In the following paper (the fifth), Zhou, Marslen-Wilson, Taft, and Shu examine the activation and use of different types of lexical information in processing two-character compound words in Chinese.

An interesting property of written Japanese is that it simultaneously uses several different scripts, including logographic Chinese (Kanji), two forms of a phonetic script called Kana (Hiragana and Katakana), Roman letters, and Arabic numerals. The next paper in the special issue addresses the processing of mixed-script materials in Japanese. Shafiullah and Monsell (the sixth paper) demonstrate that there is a cost in switching from logographic Kanji to syllabic Kana in naming and semantic categorisation and discuss the possible source of the cost.

Whereas the first six papers are concerned with the processing of visually presented materials, Ye and Connine (the seventh paper) turn their attention to an important issue in processing spoken Chinese, namely the use of tonal information. They argue that the processing of tone draws on both perceptual and lexical processes in spoken word recognition.

Part two comprises four papers on parsing and discourse comprehension. The first two papers are concerned with parsing in Japanese, a head-final language. Kamide and Mitchell (the eighth paper) demonstrate that the attachment decision of a verb-argument can be made before the head verb of the relevant phrase is encountered and argue that head-driven parsing is not universal. Miyamoto, Gibson, Pearlmutter, Aikawa, and Miyagawa (the ninth paper) investigate the attachment preferences of head-final relative clauses and find a non-monotonic preference to attach according to locality. They interpret their results within a framework in which both locality and another factor (predicate proximity or anaphor resolution) constrain the attachment of relative clauses in Japanese. Whereas a considerable amount of parsing work has been done in Japanese, Kim (the tenth paper) extends the work to Korean, which is also a head-final language where the positions of clause boundaries cannot be predicted easily. He demonstrates that case marking information is used to reduce syntactic ambiguity in processing Korean sentences. In the final paper of this special issue, Yang, Gordon, Hendrick, and Wu explore how

different types of pronouns in Chinese are processed and argue that anaphora resolution in Chinese can be understood using a model previously developed in English.

This special issue attempts to provide a representative sample of the most recent research on the processing of major East Asian languages and to communicate the current thinking in the field. The papers in this issue reveal both the potential of this relatively new research area and also many intriguing questions that studying Chinese, Japanese, and Korean has raised, thus pointing out a number of possible directions for future research. It will, we hope, provide stimulating and enjoyable reading to anyone interested in the psychology of language in general and cognitive processing in the three target languages in particular.

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