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Citation

Tavassoli, Nader T. and Han, Jin K.. On the Interaction of Alphabetic and Logographic Words with Sounds and Images. (2001). *Advances in Consumer Research*. 29, 186-187. Research Collection Lee Kong Chian School Of Business.

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"ON THE INTERACTION OF ALPHABETIC AND LOGOGRAPHIC WORDS WITH SOUNDS AND IMAGES"

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Advances in Consumer Research, 2002, Volume 29, Pages: 185-187
eds. Susan M. Broniarczyk and Kent Nakamoto, Valdosta, GA: Association for Consumer Research

It is well established that reading alphabetic words is dominated by phonological (sound-based) processes, whereas phonological processes do not appear to dominate the processing of Chinese logographs, where visual processes are more pronounced (for reviews, see Tavassoli, in press; Zhou & Marslen-Wilson, 1999). Most previous demonstrations of these linguistic differences have relied on low-level processes that potentially do not involve short-term memory. For example, they have attempted to assess differences in the speed (measured in milliseconds) by which phonological and semantic information get activated in the brain. Our research adds to a growing stream of consumer behavior research that has shown these low-level processing differences to have profound implications for higher-order processes such as recall and attitude formation (Pan & Schmitt 1996; Schmitt, Pan & Tavassoli 1994; Tavassoli 1999, 2001). Specifically, we examine the interactive processing of words with sounds and images, and the flexibility bilingual and biscriptal consumers show in their processing styles (Tavassoli & Han, 2001; Tavassoli & Han, 2002).

In experiment 1, we examine interference from nonverbal information. We propose that auditory distractors should interfere more with the processing of an alphabetic script because this relies primarily on phonological processes, whereas visual distractors should interfere more with the processing of a logographic script because this relies more on visual mental processes. We presented the same words written either in the alphabetic Hangul or the logographic Hancha, two scripts that can be used interchangeably for a large subset of Korean words. Each word was preceded and followed by sounds or simple graphics. Participants were asked to remember the words and the distractors. We found that auditory distractors impaired memory performance for Hangul more than for Hancha, whereas visual distractors showed the reverse pattern. This suggests that consumers' processing differs based on the writing system used and that, for example, irrelevant background music would be relatively more distracting in Hangul (English) ads, whereas irrelevant graphics would be more distracting in Hancha (Chinese) ads.

In the next 3 experiments, we examined the integration in memory of words with nonverbal information which is the reciprocal effect of interference (Tavassoli, 1998). In contrast to interference, integration should be stronger the greater the processing overlap. We tested this prediction by presenting alphabetic Hangul or logographic Hancha words paired either with brand logos or with auditory icons, similar to the *MGM* lion's roar. We found that memory for pairings with auditory icons was better when these were paired with brand names written in Hangul. In contrast, we found that memory for pairings with visual logos was better when these were paired with brand names written in Hancha. We replicated this interaction effect with native speakers of English and Mandarin, and bilingual speakers of English and Cantonese. In other words, the integration of verbal with non-verbal information differs based on the writing system used to present the same information by the same consumer.

In summary, this paper extends previous research on the processing of words to the interactive processing of words with nonverbal sounds and images. Moreover, it demonstrates that differences in processing language are flexible and a single bilingual or biscriptal consumer can exhibit contrasting processing styles in ways similar to native speakers of different languages.

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