Thierry and Wu (2004; 2007) asked Chinese-English bilinguals to judge whether English word pairs were related in meaning or not. Participants were not aware that half of the English word pairs had Chinese translations with repeated characters (e.g., post - mail, 邮政 - 邮件, repeated character: 邮). This hidden character repetition lead to slower responses (Thierry & Wu, 2004). In contrast, Zhang, van Heuven and Conklin (in press) had Chinese-English bilinguals making lexical decisions to target words preceded by masked unrelated word primes presented for 59 ms (e.g., thing preceded by east, and vice versa) and found that hidden character repetition (east – thing, 东 - 东西, repeated character 东) lead to faster responses.

The current study examine whether cross-language influences are modulated by task demands by using both Thierry and Wu’s semantic relatedness judgement task and Zhang et al.’s primed lexical decision task with the same set of stimuli. Chinese-English bilinguals were presented with English word pairs whose Chinese translations repeated orthography (card - stuck, 卡 - 卡, /ka3/ - /qia3/, i.e., homographs), phonology (throw - head, 投 - 头, /tou2/ - /tou2/, i.e., homophones), or both (face - noodle, 面 - 面, /mian4/ - /mian4/, i.e., homonyms). Responses to targets preceded by critical primes were compared with matched unrelated primes.

The results of the semantic relatedness task (Experiment 1) showed that for Chinese-English bilinguals, word pairs that were translations of Chinese homographs were responded to slower (i.e., hidden homograph interference effect). The masked priming data of the Chinese-English bilinguals (Experiment 2) revealed slower lexical decisions to target words when preceded by primes that are homophonic with the targets (i.e., hidden homophone interference effect). Responses of English monolinguals in both experiments were not affected by the Chinese word information, indicating that the observed effects are unique to Chinese-English bilinguals and are not due to characteristics of the English primes and targets.

It is proposed that the hidden homograph interference effect observed in the English semantic relatedness judgment task is caused by inconsistent feedback from semantic to phonological units (i.e., phonological ambiguity) in Chinese homographs. On the other hand, the hidden homophone interference effect found in the English lexical decision task is the result of inconsistent feedback from phonological to orthographic units (i.e., orthographic ambiguity) in Chinese homophones. Overall, these phonological and orthographic ambiguity effects indicate that when Chinese-English bilinguals read English, Chinese phonology and orthography is activated through automatic translation.
References: