EFL Learners' Mental Processing of Multi-word Units

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The purpose of this study was to use sophisticated eye-tracking techniques to investigate how multi-word units (MWUs) were processed by learners who learned English as a foreign language. During the recent two decades, there has been a growing interest in exploring MWUs in language use. Research conducted to study MWUs includes, for example, descriptions of MWUs in large-scale corpora (e.g. Erman & Warren, 2000), discussions pointing out significance of MWUs for L2 teaching (e.g. Nattinger & DeCarrico, 1992), analyses of discourse functions of MWUs in either L1 or L2 productions (e.g. Biber, Conrad & Cortes, 2004), etc. One research issue which also has attracted considerable attention concerns how MWUs are processed in real time. Specifically, it has been suggested that working memory is restricted in its capacity, and, to ease the problem of the capacity limitation and to receive/produce language fluently, human beings appear to develop a processing advantage for multi-word sequences (Pawley & Syder, 1983). This advantage has been evidenced by some recent psycholinguistic experiments (e.g. Conklin & Schmitt, 2008; Jiang & Nekrasova, 2007), which found that this advantage was enjoyed not only by L1 speakers, but by high-level L2 learners as well.

In this study, we would like to contribute to the literature on L2 learners' MWU processing while our experiment differed from the previous research in two important respects. First, unlike the previous studies which were conducted in ESL contexts, this study tested EFL learners. Given that the L2 input of second language and foreign language learners is largely different, it is necessary to find out whether foreign language learners who rely mainly on written input also show the processing advantage for MWUs. Second, rather than use high achievers as subjects, we focused on intermediate-level L2 learners in an attempt to see if there was a need to reach high L2 levels to develop the processing advantage. The subjects of this study were thirty college students in Taiwan who had learned English as a foreign language for around six years. We employed eye-tracking techniques to observe the subjects' reading of thirty MWUs, including both recurrent multi-word strings derived from British National Corpus (e.g. *as a matter of fact*) and some common idioms (e.g. *over the hill*) put in sentences. The last words of those MWUs were embedded in non-MWU contexts for comparison (e.g. …*whether this is a fact or*…). Our assumption was, if the subjects showed the processing advantage for the MWUs, they would process the final words of the MWUs more quickly than the same words in non-MWU contexts.

The data collected were somewhat surprising. In the three eye movement measures that we observed (fixation probability, first-fixation duration, and gaze duration), none of them revealed that the subjects processed the target words differently in the two contexts. It appeared that our subjects did not show any advantage when they processed the thirty MWUs. However, to see if there were certain MWUs that the subjects processed more efficiently, we took a closer look at our eye movement data and found that the MWUs for which our subjects did not show the advantage were mostly idioms. As for the corpus-derived multi-word sequences, the L2 learners did process their final words more quickly than the same words in non-MWU contexts. Taking all the results together, we found: (1) EFL learners, like ESL learners, tend to enjoy a processing advantage when they perceive MWUs during silent reading, and (2) the processing advantage develops rather early in L2 acquisition, as it is shown by L2 learners at intermediate proficiency levels. Furthermore, our experiment indicates that L2 learners generally have difficulty in processing idioms, thus confirming many previous researchers' claim that idiomatic expressions pose a serious problem for L2 learning (Cooper, 1999; Laufer, 2000). Based on these findings, we provide suggestions for future research and offer some pedagogical insights for English L2 instruction.

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