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The Structural Pattern: An Event-Related Potential Study on Tang Poetry

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Abstract : Measuring event-related potentials (ERPs) has been fundamental to our understanding of how people process language. One specific ERP component, a P600, has been hypothesized to be associated with syntactic reanalysis processes. We, however, propose that the P600 is not restricted to reanalysis processes, but is the index of the structural pattern processing. To investigate the structural pattern processing, we utilized the effects of stimulus degradation in structural priming. To put it another way, there was no P600 effect if the structure of the prime was the same with the structure of the target. Otherwise, there would be a P600 effect if the structure were different between the prime and the target. In the experiment, twenty-two participants were presented with four sentences of Tang poetry. All of the first two sentences, being prime, were conducted with SVO+VP. The last two sentences, being the target, were divided into three types. Type one of the targets was SVO+VP. Type two of the targets was SVO+VPVP. Type three of the targets was VP+VP. The result showed that both of the targets, SVO+VPVP and VP+VP, elicited positive-going brainwave, a P600 effect, at 600~900ms time window. Furthermore, the P600 component was lager for the target' VP+VP' than the target' SVO+VPVP'. That meant the more dissimilar the structure was, the lager the P600 effect we got. These results indicate that P600 was the index of the structure processing, and it would affect the P600 effect intensity with the degrees of structural heterogeneity.

Keywords : ERPs, P600, structural pattern, structural priming, Tang poetry
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