

Semantic Plausibility is a Determinant Element of the Semantic P600: An ERP Evidence from the Inverted Resultative Construction in Chinese

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Language processing is inseparable from two significant language-sensitive components—the N400 and P600. Traditionally, P600 is excited when the syntax of the sentence is violated and N400 is excited when the semantics of the sentence is violated. Strikingly, it has been found that some syntactically correct but semantically anomaly sentences also elicited P600 rather than N400. This peculiar P600 which caused by semantic anomalies is normally called "Semantic P600". Thematic role and plausibility are considered to be two of the main influences on the production of semantic P600. However, the stimuli used in previous studies often both reverse thematic role and make sentences semantically anomalous (‘The cat that from the mice fled, ran through the room.’), making it impossible to distinguish which of the two factors contributes more to the production of semantic P600. This paper uses a particular Chinese structure, the inverted resultative construction, which reverses thematic roles but is semantically plausible (‘青草吃肥了羊儿-The grass was eaten by the sheep, so the sheep became fat.’), to test whether thematic roles or plausibility contribute more to the emergence of semantic P600. The results show that the latter contributes more to the semantic P600 in comparison.

Keywords: language comprehension, N400, semantic illusion, semantic P600, inverted resultative construction, Chinese

Condition1 : TN SN				
羊 儿	吃	光	了	* <u>青 草</u>
The sheep	Eat	Nothing left	past tense marker	The grass
The sheep ate all <i>*the grass</i> .				
Condition2 : TN SA				
羊 儿	吃	肥	了	* <u>青 草</u>
The sheep	Eat	Fat	past tense marker	The grass
The sheep ate the grass, so <i>*the grass</i> became fat.				
Condition3 : TR SN				
青 草	吃	肥	了	* <u>羊 儿</u>
The grass	Eat	Fat	past tense marker	The sheep
The grass was eaten by the sheep, so <i>*the sheep</i> became fat.				
Condition4 : TR SA				
青 草	吃	光	了	* <u>羊 儿</u>
The grass	Eat	Nothing left	past tense marker	The sheep
The grass ate all <i>*the sheep</i> .				