

# Correlation Analysis between Intelligence and the Processing of Chinese Relative Clauses<sup>1</sup>

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The processing of relative clauses is influenced by many factors such as the complexity of syntax, and one's working memory load and so on. This research makes a correlation analysis with an aim to discover the correlation between intelligence and processing of Chinese relative clauses and the specific factors of intelligence that influence the processing of Chinese relative clauses. The Wechsler Adult Intelligence Scale is used to conduct the intelligence test. 96 stimuli sentences are used in the behavioral experiment of processing Chinese relative clauses.

The experiment results showed a strong correlation between intelligence and processing of Chinese relative clauses that reaction time of processing Chinese relative clauses is closely related to intelligence, especially the full-scale intelligence quotient (FISQ) and verbal intelligence quotient (VIQ). No obvious correlation exists between reaction time and the performance intelligence quotient (PIQ). Accuracy of processing Chinese relative clauses is closely related to VIQ, not FISQ and PIQ. In a word, processing of Chinese Relative clauses is mostly correlated to VIQ.

For the correlation between intelligence and processing of subject Chinese relative clauses, both reaction time and accuracy are correlated with VIQ. For the correlation between intelligence and processing of object Chinese relative clauses, reaction time and accuracy are also correlated with VIQ. What is different from subject relative clauses is that the reaction time of object relative clauses is correlated with FISQ. Based on the correlation coefficients, the reaction time of object relative clauses is more correlated with VIQ than that of the subject relative clauses ( $|-0.349| > |-0.290|$ ). The accuracies of the two kinds of relative clauses are nearly of the same correlation level with VIQ.

For the specific intelligence factors, reaction time is correlated to information, digit symbol coding and is highly correlated to digit span. Accuracy only has correlation with comprehension. The four correlated subtests can reflect different intelligence factors that are involved in processing of Chinese relative clauses, including one's verbal comprehension ability, one's working memory ability and the ability of processing speed. The experiment results show that processing of Chinese relative clause is mostly correlated with the intelligence factor and working memory ability.

The findings of the experiment confirm the significant role of intelligence levels that play in Chinese relative clause processing and the strong correlation between them.

**Key Words:** intelligence; Chinese; subject relative clause; object relative clause

## Our preference is for oral presentation.

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