

運用 P300 訊號於大腦印象裡說謊與誠實回應比較分析之研究  
The Study of Using P300 in Brain Image Detecting :  
The Analyses of Deception versus Truth-telling Responses

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**摘要**

本研究運用腦波來分析大腦對於說謊與誠實的回應，透過觀察 P300 振幅大小之差異，來比較受測者說謊與誠實回應的不同。我們以撲克牌來對受測者實驗。透過交叉分析分別來比較受測者有印象&說謊、有印象&誠實、沒有印象&說謊與沒有印象&誠實四種組合下的 P300 振幅有無顯著差異。分析結果，透過統計分析 P300 振幅的最大正波峰—最大負波峰(p-p)值在「印象」類型與「回答」類型兩個因子的單純效果有出現顯著的差異，而在基準線—最大正波峰(b-p)值方面，僅兩個因子的交互作用有顯著效果，透過事後比較，四種組合在最大正波峰—最大負波峰(p-p)值有顯著差異的為：有印象&誠實>無印象&誠實及無印象&說謊；有印象&說謊>無印象&說謊。而基準線—最大正波峰(b-p)值方面，有印象&誠實為最大，另外三種組合之間則沒有顯著差異。

**關鍵字：**腦波、說謊、誠實、P300

**Abstract**

*The purpose of this research analyzes the difference between deception and truth-telling responses of EEG from each subject by comparing the P300 amplitude. The material is poker cards. By using crossing analyses, we compare the difference of the P300 amplitude for four conditions from the subject. They are impressed card & deception, impressed card & truth-telling responses, unimpressed cards & deception and unimpressed cards & truth-telling responses. Experiment results show that there is a significant difference between the peak – peak (p-p) values of P300 amplitude of “impression” and “response” in the simple main effects of two-way ANOVA. In base – peak (b-p) values, only the interaction of effects is significant. By posteriori, four groups are significant in peak – peak (p-p) values: impressed & truth > unimpressed & truth and unimpressed & deception; impressed & deception > unimpressed & deception. In base – peak (b-p) values impressed & truth is the largest, and there is no significant difference between other three groups.*

**Keywords :** EEG、deception、truth、P300