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Conducting a Meta-Analysis of Neurocognitive Research on Psychopathy

Keywords

Psychopathy; neurocognitive function; meta-analysis

Helpful Terms

Event-related potential (ERP) techniques: Techniques to measure naturally occurring electrical activity of the brain that reflect ongoing sensory, cognitive and behavioural processes (how people sense, think and act in the world).

P300 (P3): A specific measure of neurocognitive functioning associated with attention and memory.

Project Title: *Disentangling the relationship between psychopathy and the P300: A meta-analysis*

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Key Questions

- What is the relationship between psychopathy and the P300, a measure of neurocognitive functioning?
- How might factors such as personality trait severity and sample population impact the results of research on psychopathy and the P300?

Project Aims

Psychopathy is characterized by traits such as callous affect, lack of empathy, and poor behavioural control. One area of research that has contributed substantially to how we understand psychopathy-related differences in neural function is the use of event-related potential (ERP) techniques. In particular, research has long associated psychopathic traits with abnormal P300 (P3) ERP responses. Research into the neurological basis of psychopathy has focused on the P3 ERP as a marker of abnormal neurocognitive functioning.

However, the results have not always been consistent. Previous attempts to resolve these inconsistencies have made some progress. But the relationship between P3 ERP responses and psychopathic traits is complex, and we need more research to clarify why studies have variable results. This study proposes that the inconsistencies may result from generalization across factors of psychopathy and study population. Our study conducts a meta-analysis of existing research to extend and update the results. We explore the potential moderating role of factor-level trait severity and sample population on the relationship between psychopathy and the P3 ERP response.

Activities

- Conducting a systematic review of existing research with both a valid and reliable measure of psychopathy, and a task designed to elicit P3 ERP response, from 2007 on.
- Coding studies for sample characteristics of interest, including population (for example, clinical/forensic versus non-clinical/community), factor-level psychopathic traits, and demographic (age, gender).

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