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Hierarchical Bayesian models for the autonomic-based Concealed Information Test

Running head: Hierarchical Bayesian models for CIT

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Highlights

- Hierarchical Bayesian models for autonomic responses in the CIT is proposed.
- Bayesian estimates of effect sizes are more accurate than conventional effect sizes.
- Heart rate is a very sensitive measure for use in detecting concealed knowledge.
- Inter- and intra-individual variability of autonomic responses are very complex.

Abstract

The concealed information test (CIT) is a psychophysiological memory detection technique for examining whether an examinee recognizes crime-relevant information. In current statistical analysis practice, the autonomic responses are usually transformed into *Z* scores within individuals to remove inter- and intra-individual variability. However, this conventional

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