Pattern Analysis

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Definition

Pattern analysis is an approach to neuropsychological test interpretation in which relationships among test scores are used to inform differential diagnosis.

Current Knowledge

In this approach, a broad range of neuropsychological tests are administered in order to adequately characterize an individual's cognitive strengths and weaknesses. Performance discrepancies, sometimes characterized as “scatter,” are then identified both within a test and between tests. The pattern of test score variability is often of greater import than any single test score. Comparison of test scores is generally optimized through the use of a common metric or equivalent score, such as a standardized z-score (Russell 1997). The pattern analysis approach requires

extensive knowledge of both psychometrics and the manner in which different neuropsychological tests may interact with one another (Lezak et al. 2012). Of particular importance are the relative reliabilities of the tests and the correlation between them. The clinician frequently assesses whether a particular pattern of performance is typical of a known brain dysfunction. The pattern analysis approach is somewhat limited, however, when an individual's cognitive presentation includes atypical features or complex interactions with cultural, emotional, social, or other moderating factors (Lezak et al. 2012).

Cross-References

► [Subtest Scatter](#)

References and Readings

- Lezak, M. D., Howieson, D. B., Bigler, E. D., & Tranel, D. (2012). *Neuropsychological assessment*. Oxford: Oxford University Press.
- Russell, E. W. (1997). Developments in the psychometric foundations of neuropsychological assessment. In G. Goldstein & T. Incagnoli (Eds.), *Contemporary approaches to neuropsychological assessment* (pp. 15–66). New York: Springer.