

Methods and pitfalls in the study of unconscious mental process

Many studies of unconscious processing involve comparing a performance measure (e.g., some assessment of perception, memory, etc.) with an awareness measure (such as a verbal report or a forced-choice response) taken either concurrently or separately. Unconscious processing is inferred when above-chance performance is combined with null awareness. Often, however, aggregate awareness is better than chance, and data analysis therefore employs a form of extreme group analysis focusing post hoc on participants, trials, or items where awareness is absent or at chance. The pitfalls of this analytic approach are described with particular reference to recent research on implicit learning and subliminal perception. Because of regression to the mean, the approach can mislead researchers into erroneous conclusions concerning unconscious influences on behaviour.