E I N L A D U N G

t zum Gastvortrag im Rahmen des Forschungskolloquiums
des Lehrstuhls für Kognitive Psychologie und Differentielle Psychologie an der
Universität Mannheim:

“The 'paradox' of converging evidence”

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Raum: O 131

Abstract

We explore the implication of viewing a psychological theory as the logical conjunction of all its
predictions. Even if several predictions derived from a theory are descriptive of behavior in separate
studies, the theory as a whole may fail to be descriptive of any single individual. We discuss what
proportion of a population satisfies a theory’s joint predictions as a function of the true effect sizes
and the proportion of variance attributable to individual differences. Unless there are no individual
differences, even very well replicated effects may fail to establish that the combination of predictions
that have been tested accurately describes even one person. Every additional study that contributes
another effect, rather than strengthening support for the theory, may further limit its scope. Using
four illustrative examples from cognitive and social psychology, we show how, in particular, small
effect sizes dramatically limit the scope of psychological theories unless every small effect coincides
with little to no individual differences. In some cases, this ‘paradox’ can be overcome by casting
theories in such a way that they apply to everyone in a target population, without exception. Rather
than relegating heterogeneity to a nuisance component of statistical models and data analysis,
explicitly keeping track of heterogeneity in hypothetical constructs makes it possible to understand
and quantify theoretical scope.