

A Paul Meehl Reader

Essays on the Practice of Scientific Psychology

Edited by

Niels G. Waller

Vanderbilt University

Leslie J. Yonce

Minneapolis, Minnesota

William M. Grove

University of Minnesota

David Faust

University of Rhode Island

Mark F. Lenzenweger

Binghamton University

©2006, Lawrence Erlbaum Associates, Mahwah, New Jersey

This book may be ordered from [Taylor & Francis](#)

*Dedicated to the University of Minnesota
teachers, colleagues, and students, past and present,
who sustained the high-quality academic milieu
for Paul Meehl and others to learn, teach,
and make scientific and scholarly contributions.*

Contents

Preface	x
Part I Theory Building and Theory Appraisal	1
1 Construct Validity in Psychological Tests	9
2 High School Yearbooks: A Reply to Schwarz.....	31
3 Nuisance Variables and the Ex Post Facto Design	37
4 Theoretical Risks and Tabular Asterisks: Sir Karl, Sir Ronald, and the Slow Progress of Soft Psychology	57
5 Appraising and Amending Theories: The Strategy of Lakatosian Defense and Two Principles That Warrant It	91
Part II Specific Etiology	169
6 Specific Etiology and Other Forms of Strong Influence: Some Quantitative Meanings	175
7 Specific Genetic Etiology, Psychodynamics and Therapeutic Nihilism	193
Part III Diagnosis and Prediction	207
8 Antecedent Probability and the Efficiency of Psychometric Signs, Patterns, or Cutting Scores	213
9 Problem Sets and Solutions for Bayes Theorem, Base Rates and Prediction	237
10 Wanted—A Good Cookbook	249
11 When Shall We Use Our Heads Instead of the Formula?	263
12 Some Ruminations on the Validation of Clinical Procedures	271
13 Comparative Efficiency of Informal (Subjective, Impressionistic) and Formal (Mechanical, Algorithmic) Prediction Procedures: The clinical–Statistical Controversy.....	291
Part IV Taxometrics: Coherent Cut Kinetics	321
14 Factors and Taxa, Traits and Types, Differences of Degree and Differences in Kind.....	331
15 Bootstraps Taxometrics: Solving the Classification Problem in Psychopathology	371
16 Clarifications about Taxometric Method	389
Part V Thinking Clearly About Psychology	405
17 Philosophy of Science: Help or Hindrance?	411
18 The Power of Quantitative Thinking	433
19 Why Summaries of Research on Psychological Theories Are Often Uninterpretable.....	445

Glossary	487
Notes	497
References	503
Author Index	537
Subject Index	545

Preface

In 1973, the University of Minnesota published a collection of Paul Meehl's writings entitled *Psychodiagnosis: Selected Papers*. It became an instant classic (many of the chapters were already citation classics in the literature), and it was later reprinted in paperback by Norton Press. It is still considered essential reading for a well-informed methodologist/clinical psychologist.

To introduce Meehl's most important insights and contributions to a new generation of psychologists, some of the still relevant classics reprinted in *Psychodiagnosis* have been retained here, but readers will also have the benefit of subsequent developments and expansions over more than three decades since that book, with new chapters selected from the more than 200 articles, speeches, technical reports, and memos that make up the corpus of Meehl's work. This volume, which might almost as well be titled *An Introduction to Paul Meehl*, is the tip of an iceberg, and the inquisitive reader will use it as a gateway to more extensive exploration of his writings. Although the primary audience of this book will be psychology graduate students and professional psychologists, those in related fields such as psychiatry, sociology, law, education, human development, and philosophy of science will also find much to like in this collection.

Chapters retained from *Psychodiagnosis* and new ones included here emphasize research in psychodiagnosis, methodology, theory building and appraisal, and clinical psychology. The leitmotif of these works is the practice of scientific psychology. The collection is a tour de force illustrating proper quantitative analysis of problems in the life sciences, clarification about the inadequacy of existing methods of analysis to solve many of those problems, invention of a multivariate statistical method—taxometrics via coherent cut kinetics—to help do the tasks required, and explication of the proper application of that methodology.

Content Highlights

Meehl tackled some of the thorniest issues in psychology, methodology, and philosophy of science. This book is organized by broad content domains:

- *Theory building and theory appraisal*
An important theme throughout Meehl's writings is how we can discover and test the true causal relations and organization of psychological constructs. This section focuses on problems with traditional approaches (most notably, significance testing) and suggests new methodological procedures.

- *Specific etiology*
Two chapters address the clarifying and useful conceptualizations of genetic, behavioral, and environmental etiology in psychopathology. The introduction includes a synopsis of Meehl's theory of schizophrenia, the study of which motivated his development of new taxometric procedures.
- *Diagnosis and prediction*
The focus of this section is the appropriate use of base rates in psychopathology research—a topic with broad relevance, as evidenced by the continued success of actuarial prediction methods. The findings in Meehl's 1954 book *Clinical versus Statistical Prediction* are confirmed by a meta-analysis cited in the chapter by Grove and Meehl that discusses why actuarial procedures are to be preferred in clinical practice and answers objections to their use. Problem sets (with worked solutions) have been provided to guide readers in practical application of principles described in the classic Meehl and Rosen chapter.
- *Taxometrics*
Meehl's first official publication (excluding technical reports) of his taxometric method was the 1973 *Psychodiagnosis* chapter "MAXCOV-HITMAX: A taxometric search method for loose genetic syndromes." Chapters in this section indicate how far he had developed coherent cut kinetics, the taxometric method he developed. The section introduction includes previously unpublished material addressing the crucial role of consistency testing in multivariate analysis in the life sciences.
- *Thinking effectively about psychological questions*
Here the focus broadens to a general critique of traditional correlational research; its weaknesses are explained and cogent suggestions are made for enhanced research and publication practices. One chapter discusses how an understanding of concepts from philosophy of science can improve research in the life sciences. The previously unpublished chapter, "The power of quantitative thinking," illuminates Meehl's passion for and the rational basis for the utility of quantitative methods in psychological science.

Several bonus features contribute to the uniqueness of this volume. First, introductions to the sections orient the reader and describe how the chapters fit into Meehl's over-all work. Second, a glossary has been provided to allow quick access to terms that may be unfamiliar or perhaps imprecisely remembered by some readers. Finally, for the benefit of those who have not experienced Paul Meehl's dynamic speaking style, the accompanying DVD contains more than an hour of Meehl holding forth in his highly popular graduate seminar on philosophical psychology. Professor Meehl had a reputation for being one of the most engaging and brilliant lecturers at the University of Minnesota. In the DVD selection, Meehl delivers an intellectually stimulating lecture on clinical versus statistical prediction.

A Perspective on the Man

The four editors who initiated this volume knew Paul personally and had discussions and correspondence with him over many years. Some were his students and colleagues at the University of Minnesota. He held them all in the highest personal and intellectual esteem. I am most fortunate to have been married to Paul for nearly thirty years and to have become increasingly involved helping with his research and writing. I am deeply grateful to my co-editors for initiating this book and for inviting me to join them in the project.

Paul Meehl's brilliance is evident in his writing, and those who knew him personally were even more impressed with it. I lived with it day and night, in the context of daily life, and still it remained awesome to behold. It was there all the time. He was a relentless cogitator, constantly analyzing and parsing, with a remarkable memory and a great talent for constructive thinking and meta-thinking about problems and concepts. He was also fascinated with behavior and liked to observe people in all situations. When confronted with the small talk that most of us take for granted in daily life, he usually dealt with it by analyzing the behavior and intent of the speaker. Another tendency he had—I think truly unintentional on his part, but charming to others—was to perceive something much more interesting than the speaker consciously intended and to construct a far more intelligent and engaging conversation with the Meehl-altered content. People routinely were left with the impression that they had posed fascinating questions and contributed significant insights that had, in fact, come from Paul. It happened with us all; truly intelligent questions or insights just got more so when Paul was there. He made us all better and smarter than we were.

Paul said:

It seems to me that one characteristic of a first-rate intellect is that it demands a complex, difficult, abstract subject matter to grapple with in order to be fully alive. Natural-born mesomorphic athletes seem to “need” vigorous exercise. Creators in the arts report that they “need” to write music or paint pictures or write sonnets, and would do so even if they knew beforehand that their productions would never be appreciated or never even be seen or heard by anybody else. Analogously, I believe that first-class abstract ideator types “need” something complicated to think about, some conceptual food for thought. (Meehl, 1973, p. *xix*)

Paul was a first-class abstract ideator, and I can attest that he feasted intellectually throughout his life. William Schofield, Paul's colleague and friend for more than half a century, captured his personality well:

Intensity has been an enduring characteristic. Meehl has never settled for a superficial study of any subject that has caught his attention or that he has viewed as substantively related to his enduring focal interest—human behavior. (1991, p. *xiii*) . . . A great and restless mind—a polymath whose catholicity of interests, fired by a passion for understanding, has meant always a study in depth. A restless mind, endowed by a talent for analysis and explication that has led to a sweeping away of webs of abstruseness and a replacement with clearly articulated conceptual structures. A restless mind passionately committed to the search for truth and constrained by the ineffableness of

some philosophical questions and the essential open-endedness of science to suspend judgment. (p. *xvii*)

For those who knew him, it is difficult not to dwell on the sensation created by his engaging and compelling intellect. However, far more important is what he accomplished with his brilliance, for that is what remains. Paul himself was not as concerned with his personal impact as he was in leaving a record of the clarifications and insights he achieved so that, he hoped, all could benefit from them and make use of them to gain firmer scientific footing for all aspects of psychology. His goal was to clarify—for himself and for the rest of us—how one should and should not think about the problems of psychology. In the process, he used tools from different fields as they were applicable, and he contributed sharper distinctions (e.g., between hypothetical constructs and intervening variables), crucial new concepts (e.g., construct validity), and a conceptually new method of classification with his taxometric approach, coherent cut kinetics (see Section IV), relying on coherency (and the implausibility of occurrence of multiple, remote coincidences) assessed via consistency tests rather than some variant of significance testing. An important aspect of this volume is its showing, with a selection of his writings, how some of these crucial concepts developed and how they fit into the over-all edifice of psychology (cf. Meehl, 1986, “Psychology: Does our heterogeneous subject matter have any unity?”). His writings illustrate both how to think and, whenever possible, what to think about the issues and challenges psychology faces as a practice and as a science.

Paul was keenly aware that it is easier to criticize than to offer positive solutions. He worked hard to suggest constructive alternatives. His proposal for a corroboration index is an attempt to overcome the shortcomings of significance testing (often used inappropriately in psychology) by replacing it with measures of “theory-supportingness” better suited than *p*-values to capturing what the working scientist typically wants in an inferential statistic. His description of how to use a variety of soft neurology measures and family pedigrees to determine the base rate of schizotypy and the mode of transmission of schizotaxia interwove insights from clinical practice, research laboratory findings, and quantitative behavior genetics. His list of how publications in psychology might contribute more both to practice and science is given in Chapter 19. His conception of the coherent cut kinetics method of taxometrics was an invention mothered by the need of schizophrenia research for a different analytical methodology. His description of how to implement cliometric metatheory (a topic covered in the introduction to Section V) provides a detailed methodology for philosophers of science to determine what contributes to successful theories and to suggest how scientists might better concoct good ones.

A final caution and reassurance to readers: almost nothing Paul Meehl wrote should be read only once. While his writing can be fun to read, seeming to flow as easily as a conversation, it is frequently difficult to grasp fully on a first reading. He did not write casually. He thought long and hard, sometimes for years, before he began to dictate initial drafts, and those drafts underwent

repeated subsequent editing in an effort to make each sentence say exactly what he intended. However, what he intended to say was often inherently complex. Hence, the reader should never feel discouraged about not comprehending something initially. Even those very familiar with Paul's work continue to learn by re-reading it. In this sense, the present book is an investment in entertaining education for years to come, a resource that you can return to repeatedly to hone your skills in understanding psychology's fundamental concepts and in thinking effectively about psychology's problems.

So much has been lost with Paul Meehl's death. But so much has been gained for us by his life and career. This volume is an introduction to his legacy; take it and build on it.

—Leslie J. Yonce

References for Preface

- Meehl, P. E. (1954/1996). *Clinical versus statistical prediction: A theoretical analysis and a review of the evidence*. Minneapolis, MN: University of Minnesota Press. Reprinted with new Preface, 1996, by Jason Aronson, Northvale, NJ. [Available at <http://www.tc.umn.edu/~pemeehl/>]
- Meehl, P. E. (1986) Psychology: Does our heterogeneous subject matter have any unity? *Minnesota Psychologist*, 35(Summer), 3-9.
- Meehl, P. E. (1973). *Psychodiagnosis: Selected papers*. Minneapolis, MN: University of Minnesota Press.
- Meehl, P. E. (1991). *Selected philosophical and methodological papers* (C. A. Anderson and K. Gunderson, Eds.). Minneapolis, MN: University of Minnesota Press.
- Schofield, W. (1991). An appreciation [of Paul Meehl]. In D. Cicchetti and W. M. Grove (Eds.), *Thinking clearly about psychology: Vol. 1: Matters of public interest* (pp. xii-xvii). Minneapolis, MN: University of Minnesota Press.