# A Great Pioneer of Clinical Science Remembered: Introduction to the Special Issue in Honor of Paul E. Meehl

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In this special issue, the seminal contributions to clinical psychology of Paul E. Meehl, who passed away in 2003, are commemorated. The nine articles comprising this special issue chronicle Meehl's remarkable intellectual biography and examine his influence on diverse domains of psychology, including the clinical versus actuarial prediction debate, the cognitive activity of the clinician, personality assessment and trait theory, the etiology of schizophrenia, the shortcomings of statistical significance testing, and the use of metascientific methods to evaluate competing models of human nature. These articles illustrate not only Meehl's legendary brilliance but also his pivotal role in forcing clinical psychologists to think more clearly and incisively about their subject matter. © 2005 Wiley Periodicals, Inc. J Clin Psychol 61: 1201–1207, 2005.

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Paul Everett Meehl, Regents Professor at the University of Minnesota and former President of the American Psychological Association (1962), passed away on February 14, 2003, from complications arising from chronic myelomonocytic leukemia. He was 83 years old.

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Paul Meehl's obituary in the *Minneapolis Star–Tribune* captured some of the personal and intellectual qualities that set him apart from most mere mortals:

> "He was famous for the power of his intellect . . . and for his very broad interests. He was terribly brilliant," [his former Ph.D. student Will] Grove said. "I don't know that you can say this in a family newspaper, but talking to him was as much fun as you could have with your clothes on."
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> Though Meehl was willing to wage hot scholarly battles with his peers in print, as a teacher he was unfailingly kind, his former student said. When Meehl was asked a silly or obvious question, he usually turned the query into something smart and then attributed that to the questioner. Colleagues took to calling those questions "Meehl errors."
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> "Most of us were painfully aware that we were not in his intellectual league," Grove said. "Those of us who knew him from his writing first . . . thought this would be a rugged guy to have a discussion with. But, Grove said, "Paul was not about scoring points . . . he was not interested in whether he was a big shot. There was no personal animus whatsoever." (Smetanka, 2003, p. 1)

## Meehl's Contributions

Paul Meehl was almost certainly the most influential clinical psychologist of his generation, if not of the latter half of the 20th century. His contributions to such diverse fields as clinical versus actuarial prediction, the etiology of schizophrenia, psychiatric classification, taxometric methods, construct validity, personality assessment, and meta-theory have shaped the thinking of tens of thousands of scientifically minded clinical researchers and practitioners. Probably more than anyone else over the past 50 years, Meehl placed the field of clinical psychology on sturdier scientific footing.

Among numerous other accomplishments, Meehl alerted us to the potential impact of response styles on self-report measures, helped clinicians to understand both what they can and can't do well, established (along with Lee J. Cronbach) an overarching framework for evaluating the scientific status of psychological tests, introduced perhaps the first sophisticated diathesis-stressor model of schizophrenia, and developed (along with Robert Golden, William Grove, Leslie Yonce, and Niels Waller) a set of quantitative procedures for distinguishing categories that exist in nature from those that exist merely in the minds of psychologists. Moreover, he warned us of the dangers of our field's excessive reliance on statistical significance testing, incessantly urging us to submit our cherished notions to more stringent theoretical risks. For Meehl, the painfully slow progress of "soft" psychology was attributable only partly to the intrinsic difficulty of our subject matter. It was also attributable to our field's collective failure to embrace mathematics and to subject our theories to tests that are as rigorous as those of more advanced sciences (Meehl, 1978).

Meehl's breadth of knowledge was breathtaking. In addition to authoring manuscripts on topics for which he is well known (e.g., construct validity, schizophrenia, theory-testing, taxometrics), he published articles and chapters on psychoanalytic theory, rational emotive behavior therapy, the insanity defense, civil commitment, organic brain damage, the prediction of dangerousness, projective techniques, the free-will–determinism debate, the mind-body problem, the meaning of "causation," the efficacy of psychotherapy, the credentialing of mental health professionals, creativity, latent learning, expectancy theory, radical behaviorism, factor analysis, path analysis, voting behavior, ethics, paleontology, Christian theology, and even extrasensory perception. In addition, Meehl held faculty appointments not only in psychology but in psychiatry, neurology, philosophy, and law, and he wrote and lectured widely in all of these disciplines.

As we observe in the first article in this special issue, unifying all of these remarkably diverse domains of inquiry was one overarching theme: Meehl's dedication to, and tireless insistence on, clear and incisive thinking (see Cicchetti & Grove, 1991). As his obituary in the *New York Times* noted, Meehl's "insistence on precise thinking and scientific tough-mindedness made him a scourge to some and a role model to many others" (Goode, 2003, p. 23).

As clinical PhD students at the University of Minnesota during the 1980s, the authors of this article were fortunate enough to know Meehl well, have taken courses from him, and been influenced by him in myriad ways. We are honored that Larry Beutler, Editor of the *Journal of Clinical Psychology*, has invited us to edit this special issue in honor of Paul Meehl's contributions to clinical science.

## Meehl's First Article

It is apropos that we honor Meehl in this special issue of the *Journal of Clinical Psychology*, because Meehl published his first article in this journal exactly 60 years ago (Meehl, 1945). In this still-classic article, Meehl presented an impassioned case for a strictly empirical approach to test construction, as exemplified by the psychological test with which Meehl is most closely associated in psychologists' minds, the Minnesota Multiphasic Personality Inventory (MMPI). Meehl developed the MMPI K scale for his doctoral dissertation (Meehl & Hathaway, 1946), and he was fond of pointing out that although he played no role in the construction of the primary MMPI scales, he helped to "sell" what became the world's most widely used measure of psychopathology.

Meehl's (1945) first article illustrates three key attributes that marked his thinking and writing for the forthcoming 58 years. First, this article underscores Meehl's belief that well-collected data should always be the final arbiter of psychological questions. In the case of a self-report item designed to aid in psychiatric diagnosis, psychologists often engage in prolonged armchair discussions concerning whether this item appears to be related to the psychological condition of interest. But unless the item distinguishes individuals with, versus without, the condition, it is psychometrically worthless until proven otherwise. Test developers must be guided by data, even if these data do not accord with their clinical intuitions:

> . . . it puzzles us but does not disconcert us when this relation [between an item response and a disorder] cannot be elucidated, the science of behavior being in the stage that it is. That "I sometimes tease animals" (answered false) should occur in scale measuring symptomatic depression [MMPI Scale 2] is theoretically mysterious, just as the tendency of certain schizophrenic patients to accept "position" as a determinant in responding to the Rorschach may be theoretically mysterious. Whether such a relation obtains can be very readily discovered empirically, and the wherefore of it may be left aside for the moment as a theoretical question. (Meehl, 1945, p. 300)

Second, this article exemplifies Meehl's extraordinary open-mindedness and intellectual flexibility. Many psychologists might view a profound commitment to "dust-bowl empiricism" as incompatible with a willingness to entertain psychodynamic propositions. Not Meehl. For example, he suspected that many MMPI items "worked" because they tapped test respondents' often unverbalized perceptions of themselves and the world:

> Whether "depth" is plumbed by a structured personality test to a lesser extent than by one which is unstructured [e.g., the Rorschach Inkblot Test] is difficult to determine, once the

> present view of the nature of structured tests is understood. That the "deepest" layers of personality are not verbal might be admitted without any implication that they cannot therefore make themselves known to us via verbal behavior. Psychoanalysis, usually considered the "deepest" kind of psychotherapy, makes use of the dependency of verbal behavior upon underlying variables which are not themselves verbalized. (Meehl, 1945, pp. 300–301)

Third, this article demonstrates Meehl's amenability to changing his mind in the face of contradictory data. In the political arena, such willingness is often regarded as proof positive of "flip-flopping." Yet, as the late Carl Sagan (1995) observed, the capacity to admit when one is mistaken is the hallmark of a genuine scientist. For example, in his 1945 manifesto, Meehl argued forcefully for a criterion-keyed approach to test construction, and dismissed the then-popular notion that valid questionnaires could be constructed on a rational–theoretical basis:

> Associated with this [rational–theoretical] approach to structured personality tests is the construction of items and their assembling into scales upon an *a priori* basis, requiring the assumption that a psychologist building the test has sufficient dynamics of verbal behavior and its relation to the inner core of personality that he is able to predict beforehand what certain sorts of people will say about themselves when asked certain sorts of questions. The fallacious character of this procedure has been sufficiently shown by the empirical results of the Minnesota Multiphasic Personality Inventory . . . It is suggested tentatively that the relative uselessness of most structured personality tests is due more to *a priori* item construction than to the fact of their being structured. (Meehl, 1945, p. 297)

Yet, 27 years later, persuaded largely by Jackson's (1971) critique of his strong 1945 position and by a substantial body of evidence showing that a purely deductive approach to test construction could yield valid measures, Meehl qualified his views considerably, even parting ways on this issue with his Minnesota mentor (and MMPI codeveloper) Starke Hathaway:

> One of the first questions that arises in adopting a psychometric strategy involves the dependence of a rational–empirical method upon theory, which I am now inclined to line up with [Jane] Loevinger against Hathaway. I believe that psychology can no longer afford to adopt psychometric procedures whose methodology proceeds with almost zero reference to what bets it is reasonable to lay upon substantive personological horses. The "theory" may be a relatively impoverished one, and may be only weakly corroborated . . . but I think we have to make do with it anyway. (Meehl, 1972, p. 151)

And later, in the same publication, Meehl listed the following characteristic as one of seven desiderata for the construction of an ideal questionnaire item: "The item makes content-theoretical sense to a sophisticated theorist, at least *ad hoc* and preferably more than *ad hoc*. In this respect I not only have ceased to push my 1945 position but view it, insofar as it was consistent, as undesirable" (Meehl, 1972, p. 160). He nonetheless referred to his 1945 position as "half-right" (p. 134) in that it correctly looked to data (in this case, criterion group differences in item endorsement) as the ultimate arbiter of item validity.

Meehl's willingness to (a) be guided by high-quality data even when it conflicted with his clinical hunches, (b) entertain theoretical ideas that many of his colleagues dismissed, and (c) change his mind when confronted with new data is readily apparent in most or all of the articles in this special issue. These three attributes, along with Meehl's raw intellectual brilliance, combined to create a consummate scientist, one who exemplifies an uncommon mix of openness to novel ideas in the phase of hypothesis generation but a ruthless skepticism in the phase of hypothesis testing (Sagan, 1995).

## This Special Issue

We begin this special issue with an intellectual biography of Paul Meehl, which we hope will not only persuade readers of Meehl's immense contributions to clinical psychology but raise troubling questions concerning many of the prevailing reinforcement contingencies in research-oriented psychology departments. We also hope that this intellectual biography will help readers understand why virtually all people who knew Meehl arrived at the same conclusion: He was the smartest person they had ever met (see also Lykken, 2004). We follow this biography with a brief eulogy by Albert Ellis, who commemorates Meehl's contributions to the development of rational–emotive therapy (later called rational–emotive behavior therapy), of which Meehl was long an enthusiastic proponent (Meehl, 1992, described his therapeutic orientation as about one-third Ellis, one-third Skinner, and one-third Freud).

Next, we showcase three articles dealing with Meehl's seminal contributions to the science of clinical judgment and prediction. First, Will Grove, one of Meehl's last PhD students, describes Meehl's still highly influential writings on the clinical versus actuarial prediction debate. He notes that Meehl's original conclusion—now over half a century old (Meehl, 1954/1996)—that actuarial aggregation of data almost always exceeds or at worst equals clinical aggregation has withstood the test of time. Yet remarkably, survey data indicate that even today many doctoral-level clinical psychologists are unfamiliar with the overwhelmingly consistent outcome of the clinical versus actuarial debate (Grove & Lloyd, 2005). Second, Robyn Dawes, a friend and former co-author of Meehl's, explores the ethical implications of Meehl's conclusions regarding the relative superiority of actuarial over clinical judgment. Dawes maintains that when cross-validated statistical prediction rules (actuarially derived formulas) are available for clinical judgments and predictions, it is unethical to rely on one's intuitions when rendering decisions. Dawes' admonitions are likely to be a bitter pill for many readers, but they are worth considering seriously. Third, Drew Westen, whose *Psychological Bulletin* article on the scientific status of Freudian theory Meehl admired greatly (Westen, 1998), addresses a related but different issue that long-fascinated Meehl, namely, "What can the clinician do well?" (Meehl, 1967). Although accepting the fundamental lessons of the clinical–actuarial debate, Westen argues that, widespread misunderstandings of this debate aside, clinical judgment is by no means useless. He attempts to identify the parameters under which clinical judgment can be informative and provides examples from the domains of hypothesis generation, identification of Popperian falsifiers, and item generation, among others, to buttress his conclusions. We suspect that Meehl would have been pleased.

The next two articles examine Meehl's contributions to the etiology and assessment of personality and psychopathology, and their implications for clinical practice. Allan Harkness, who like the authors of this article came to know Meehl well as a clinical PhD student at Minnesota, outlines four central lessons that Paul Meehl imparted to personality psychology and personality assessment. In capsule form, they are: (a) integrate science with clinical practice, but in doing so be certain to combine an openness to subjective clinical insights with a skeptical rigor dictated by empirical findings; (b) recognize the implications of individual differences in personality traits for treatment; (c) appreciate the relevance of psychological theory to test construction, construct validation, and interpretation; and (d) make your theories "work harder" by squeezing out of them testable predictions. Then, Mark Lenzenweger, Brendan Maher, and Theo Manschrek review Meehl's pioneering contributions to the understanding of schizophrenia and schizotypy. They note that Meehl's diathesis–stressor model of schizophrenia, which posited that a specific genetic predisposition to schizophrenia interacts with a host of

nonspecific polygenetic potentiators (e.g., low intelligence) and environmental triggers (e.g., psychosocial stressors), continues to influence schizophrenia researchers in exciting ways. For example, Meehl's writings (e.g., Meehl, 1962) helped to inspire two generations of schizophrenia researchers to seek out motor and neurodevelopmental abnormalities among individuals with this condition, and have encouraged these researchers to develop riskier and more informative tests of their etiological models.

In the two final articles, we examine Meehl's contributions to the philosophy of science. In a challenging but fascinating paper, William Rozeboom, whose writings over four decades ago helped to launch the psychological debate regarding the shortcomings of statistical significance testing (Rozeboom, 1960), critically examines Meehl's writings on the corroboration of scientific theories within clinical psychology. Rozeboom concludes that although Meehl's approach to the appraisal of scientific theories is largely commendable, it suffers from certain shortcomings, particularly an overly global approach to theory corroboration, and a relative neglect of the role of discovery in theory generation. We do not know whether Meehl would have concurred with Rozeboom's constructive criticisms, but we are confident that he would have found them thought provoking. Last but by no means least, David Faust, a close friend and long-time collaborator of Meehl's, discusses Meehl's contributions to metascience, that is, the science of science. Faust contends that by adopting more scientifically informed methods for evaluating theories, including methods that he and Meehl began to develop, psychologists can make better judgments in both research and clinical contexts. Faust's article takes us back full circle to the article by Will Grove, namely, to the question of how clinical psychologists can use science to make more rational decisions—a question that occupied Meehl throughout his career.

## Parting Thoughts

So, without further ado, we welcome you to enjoy the articles in this special issue of the *Journal of Clinical Psychology*. Before bidding farewell, we thank not only Larry Beutler for his graciousness in permitting us to edit this special issue but also Leslie Yonce (Paul's widow), Will Grove, Gerd Gigerenzer, and David Lubinski for going well beyond the call of duty in providing generous feedback on several of the manuscripts contained herein. It goes without saying that we dedicate this special issue to the memory of Paul E. Meehl, brilliant thinker, inspired writer, gifted teacher, and devoted mentor—in the words of writer Tom Wolfe (1998), "a man in full."

## References

Cicchetti, D., & Grove, W.M. (Eds.). (1991). Thinking clearly about psychology: Essays in honor of Paul Everett Meehl. Vols. I and II. Essays on matters of public interest. Minneapolis: University of Minnesota Press.

Goode, E. (2003, February 19). Paul Meehl, an example for leaders of psychotherapy. New York Times, Sect. A, p. 23.

Grove, W.M., & Lloyd, M. (2005). Survey on the use of mechanical prediction methods in clinical psychology. Manuscript submitted for publication.

Jackson, D.N. (1971). The dynamics of structured personality tests: 1971. Psychological Review, 78, 229–248.

Lykken, D.T. (2004). Paul Everett Meehl. Applied and Preventive Psychology, 11, 53–56.

Meehl, P.E. (1945). The dynamics of "structured" personality tests. Journal of Clinical Psychology, 1, 296–303.

Meehl, P.E. (1962). Schizotaxia, schizotypy, schizophrenia. American Psychologist, 17, 827–838.

Meehl, P.E. (1967). What can the clinician do well? In D.N. Jackson & S. Messick (Eds.), Problems in human assessment (pp. 594–599). New York: McGraw-Hill.

Meehl, P.E. (1972). Reactions, reflections, projections. In J.N. Butcher (Ed.), Objective personality assessment: Changing perspectives (pp. 131–189). New York: Academic Press.

Meehl, P.E. (1978). Theoretical risks and tabular asterisks: Sir Karl, Sir Ronald, and the slow progress of soft psychology. Journal of Consulting and Clinical Psychology, 46, 806–834.

Meehl, P.E. (1992). Needs (Murray, 1938) and state-variables (Skinner, 1938). Psychological Reports, 70, 407–450.

Meehl, P.E. (1996). Clinical versus statistical prediction: A theoretical analysis and a review of the evidence (New Preface). Lanham, MD: Rowan & Littlefield/Jason Aronson. (Original work published 1954)

Meehl, P.E., & Hathaway, S.R. (1946). The K factor as a suppressor variable in the Minnesota Multiphasic Personality Inventory. Journal of Applied Psychology, 30, 525–564.

Rozeboom, W.W. (1960). The fallacy of the null hypothesis significance test. Psychological Bulletin, 57, 416–428.

Sagan, C. (1995). The demon-haunted world: Science as a candle in the dark. New York: Random House.

Smetanka, M.J. (2003, February 18). Paul Meehl, U professor and innovator, dies at 83. [Electronic version]. Minneapolis Star–Tribune. Retrieved August 14, 2004, from http://www.startribune.com/stories/466/3659275.html

Westen, D. (1998). The scientific legacy of Sigmund Freud: Toward a psychodynamically informed psychological science. Psychological Bulletin, 124, 333–371.

Wolfe, T. (1998). A man in full. New York: Farrar, Straus, Giroux.