BOOK REVIEW

FUNCTIONAL PSYCHOLOGICAL TESTING

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At first glance, Functional Psychological Testing appears formidable and may well overwhelm the reader who is not already familiar with Cattell's contributions to the areas of personality, intelligence, motivation, and creativity. Many psychologists have at least some vague notion about Cattell's contributions to multivariate psychology and are typically "turned off" by the thought of trying to wade through page after page of formulas that they find incomprehensible. This stereotype is unfortunate because Functional Psychological Testing does not require any greater knowledge of statistics than the standard textbooks (e.g. Anastasi, 1988; Cronbach, 1985; Thorndike & Hagen, 1977; Cohen, Montague, Nathanson & Swerdlick, 1988) which are typically used in an introductory tests and measurements course. Anyone who could get through their basic measurement course and the minimal statistical requirements typically included in doctoral programs for applied psychologists is in a good position to understand almost all the content of this volume.

Reviewing Functional Psychological Testing is somewhat problematic because it does not fit neatly into any of the categories or pigeonholes that we are accustomed to in the areas of psychological testing and assessment. It is not the typical textbook for an introductory tests and measurements course although it contains the material necessary for teaching this kind of course. It is not the typical textbook for advanced courses in clinical assessment but it does cover this area and address many of the same concerns treated in the better textbooks on this topic (e.g., Golden, 1979; Maloney & Ward, 1976; Sundberg, 1977; Fischer, 1985). It is not the typical textbook used in teaching a "how to use tests in counseling" course as is evident in the classic text for that area (Goldman, 1971) but it does have implications for that area. It is not the typical textbook used in an introductory course in personality assessment (e.g., Mischel, 1968; Kleinmuntz, 1967) but it definitely deals with this topic. It is not the typical textbook (e.g., Matarazzo, 1972) used for teaching courses in individual intelligence assessment but this topic is included. If not these, then what about Functional Psychological Testing makes it so unique that it defies being fitted into some predetermined slot?
The answer to this question is straightforward since Cattell provides an answer in the Preface (pp. ix-xiii) and this point is elaborated upon several times throughout the text. Two related constructs are at the heart of this book and distinguish it from other works on psychological testing and assessment. The first construct, structural psychometrics, is described as follows by Cattell, "...was concerned from the beginning with the use of new statistical-experimental tools, such as factor analysis in its R-, dR-, and P-technique forms, in order to find the natural structure, within our culture and genetic pool, of abilities, personality-temperament traits, dynamic drives, and dimensions of state change" (p. 5). In discussing his research, Cattell notes that, "The first aim was in fact not testing at all, but the sifting of earlier clinical and Jamesian-like concepts of personality on a new foundation of quantitative multivariate experimental reasearch on traits, states, and their interactions." (p. 5). One of the unique features of Functional Psychological Testing is that it is construct-centered rather than test-centered (pp. 3-5). This volume is concerned with the measurement and application of theoretical constructs that have emerged from five decades of focused research on the part of Cattell and his associates.

The concept of functional testing; hence, the title of this work; is a logical extension of structural psychometrics. In Cattell's words, "Testing deserves to be called functional when it uses growing psychological knowledge of the genetic and learning roots of traits and their modes of action in life, which permits prediction, as well as clinical understanding to go beyond any blindly statistical use of scores" (p. 4). Cattell is especially critical of what might be called the "first generation" of clinical tests such as the Rorschach, TAT, WAIS, MMPI, and Bender (pp. 3-5). His main concern about these tests is that they were constructed on a narrow, ad hoc basis rather than on the basis of systematic personality research. Such tests can be factor analyzed ("postnotally factored", to use Cattell's term) and correlated with behavioral criteria but the application of multi-variate statistical techniques does not alleviate the basic problem. At best, one still has nothing beyond a "cookbook" approach which falls short of the requirements necessary for structural psychometrics. These "aboriginal pre-structured scales and tests" cannot be interpreted in terms of "the structural maps of human behavior" which have emerged from years of careful multivariate research. The futility of such prestructural test is high-lighted by Cattell in the following quote: "Since the subsequent scientific use of such tests is as awkward as a stage coach with a gasoline engine tied to the shafts, postnatal reconstructions are apt to become postmortem" (p. 4)

Unlike introductory tests and measurements texts, Functional Psychological Testing is not intended to be a descriptive catalogue of the more popular tests used in the respective areas of applied psychology (p. xii). The integrating theme throughout this volume (in the chapters by contributors as well as those by Cattell) is the idea that if psychological testing/assessment is to be effective, then it should be based on a coherent body of research and psychological theory which provides the basis for interpreting test scores. Within this context, the first eight chapters, entitled "Psychometric Principles in Testing" provide a summary of Cattell's reconstructions of psychometric theory and a commentary on current testing/assessment practices. His basic behavioral equation is introduced early.
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on in Chapter 1, refined in Chapter 2, and elaborated by occasional commentary in Chapters 3-8. This behavioral specification equation, along with the coefficient of profile similarity \( r_p \), constitute the critical ingredients for translating research and personality theory into functional assessment. These two statistical procedures are essential for the “three-file” assessment system described in Chapter 6 which provides for the accumulation of research data and their dissemination to practitioners thus facilitating functional testing/assessment. Cattell’s conception of the “three-file” assessment system represents a bold challenge to practitioners and can lead to a vast increase in knowledge if they choose to become participants in this kind of research enterprise.

The second section of the book, entitled “Available Structured Tests and Functional Psychometry”, consists of eight chapters devoted to different aspects of testing/assessment. The level of scholarship is uniformly high throughout this section and the contributors do an excellent job of staying within the overall framework outlined for the book. These chapters are surprisingly readable — especially when one considers the fact that several of the contributors are dealing with extremely complex material. The chapters by Woliver and Saeks (“Intelligence and Primary Aptitudes...”), Blaine and Merrifield (“Achievement and Proficiency Measures”), Gorsuch (“Measuring Attitudes, Interests, Sentiments, and Values”), Johnson (“Personality Assessment by Observers in Normal and Psychiatric Data”), and Barton (“Personality Assessment by Questionnaire”) represent solid contributions to areas that most readers, certainly applied psychologists, will already have a reasonable degree of familiarity with. On the other hand, Barton (“Measuring Emotional States”), Schuerger (“Personality Assessment by Objective Tests”), and Sweeney, Anton, and Cattell (“Evaluating Motivation Structure, Conflict, and Adjustment”) faced a more difficult task. Readers are unlikely to be as familiar with these areas as they are with the content of the other chapters. Mastery of these three chapters will require more time and effort but the information and insight to be gained from careful study of these chapters makes the payoff well worth the investment.

The third section which is entitled “The Art of Testing in Psychological Practice” includes seven chapters all of which are well written and informative. Chapter 22 (“Legal Considerations for the Psychologist and Some Practical Suggestions”) by Ganley presents an excellent discussion of legal concerns for psychologists. It is written in a practical, straightforward manner and is remarkably free of legal jargon. The final chapter, “Dodging the Third Error Source: Psychological Interpretation and Use of Given Scores”, by Cattell is by far the most complex chapter in the entire book. There is no royal road to learning so the potential reader should be forewarned that comprehension of the material in this chapter requires a reasonably good background in quantitative methods and a great deal of hard work. Johnson’s (p. xv) comment about sloth is particularly applicable here. No psychologist who conducts personality assessments can afford to be ignorant of the material in this chapter. Enlightenment does have its price, however, and this chapter is not for the slothful.

The remaining chapters in part three fall at an intermediate level of difficulty between the chapters by Cattell and Ganley. Chapter 18 (“The Art of Clinical Assessment by the 16 P.F., CAQ and MAT”) by Heather B. Cattell will definitely be a high interest item for counseling/clinical psychologists. This chapter
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contains actual case examples which show how the 16 PF, CAQ, and MAT can be used in planning, implementing, and monitoring counseling/psychotherapy. Bolton's chapter on "Clinical Diagnosis and Psychotherapeutic Monitoring" comes just before the chapter by Heather Cattell and does an exemplary job of setting the stage for her discussion of clinical assessment. These two chapters are an absolute "must" for an advanced course or seminar on personality assessment. The chapters on "Industrial and Vocational Selection" by Nolty and "Classroom Achievement and Creativity" by Gillis are written at an appropriate level and represent worthwhile contributions which fit in well with the overall theme of the book. A second chapter by Gillis entitled "Psychological Characteristics of Groups" provides a good introduction to the topic and suggests some productive ideas for future research.

Unfortunately, one cannot truly do justice to Functional Psychological Testing in the course of a brief review. There are simply so many intriguing ideas, concepts, and reconstructions that only a few of them can be touched upon in the most superficial sort of way. The contents of this volume can only be appreciated by those who buy it and take the time necessary to study it and master its content. In the final analysis, this is a practitioner-oriented book that provides an effective vehicle for familiarizing applied psychologists with Cattell's work and showing them how to use some of the most effective assessment procedures ever developed. Needless to say, this book also has its place in graduate programs. I have used several chapters in my introductory tests and measurements course and found that students respond well to the content. I also require several chapters as readings in my advanced personality assessment course which falls at the end of the second year in our counseling psychology program. Students at this level respond enthusiastically to the chapters that I have assigned from Parts II and III. For this group, I introduce the behavioral equation and \( r_p \) in a two-hour lecture period before making the assignments. What surprises me is the number of students who read extra chapters on their own without being required to do so. What is even more surprising is that a substantial number of students go back and study the psychometric principles from Part I which are covered only incidentally in this class.
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REFERENCES