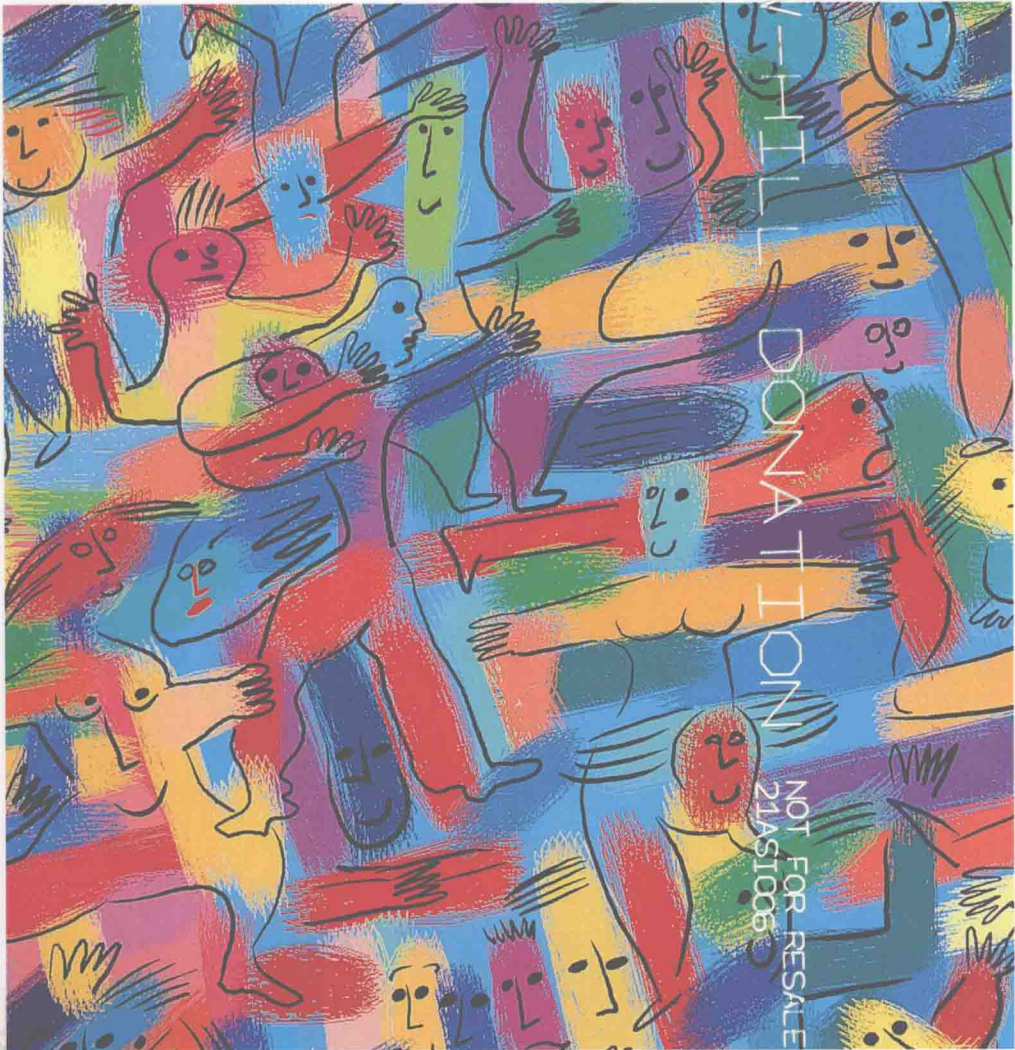


FOUNDATIONS OF PSYCHOLOGICAL TESTING



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Foundations of Psychological Testing

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*Foundations
of Psychological
Testing*

Dedication

*We would like to dedicate this book to our children,
Jonathan McIntire Hart, Zachary Kenneth Miller,
and Kia Anne Miller.*

*Leslie Miller would further like
to dedicate this book to her
husband, Robert Miller.*

Acknowledgments

We could not have written this book without the assistance of various individuals. First, we wish to thank a former student of ours, Bernice Lupo, who, during the early stages of our writing, spent a significant amount of her time gathering information and reviewing our chapters for their readability. We would also like to recognize the contributions of our reviewers whose suggestions have resulted in improvements to the organization and content of this textbook. These reviewers include Jeffrey M. Adams at High Point University, Barbara Fritzsche at The University of Central Florida, Perry N. Halkitis at New York University, Douglas J. Herrmann at Indiana State University, Michael J. Lambert at Brigham Young University, Howard B. Lee at California State University (Northridge), Dennis R. Musselman at Humboldt State University, Bradley C. Olson at Northern Michigan University, Donald J. Polzella at University of Dayton, and Mary L. Wandrei at Marquette University. Finally, we would like to express our thanks to Lai Moy and Susan Brusch at McGraw Hill and Wendy Nelson who have been particularly helpful during the editing and production of this textbook.

Preface

Approximately 20 million Americans take standardized tests each year (Hunt, 1993). As a result, people are using psychological tests more than ever to make important decisions. For example, educators are using psychological tests to help determine who will be admitted to college, who will participate in special school programs (for example, gifted or remedial), and who will receive high and low grades. Clinicians are using psychological tests to help diagnose psychological disorders and plan treatment programs. Industrial/organizational psychologists are using psychological tests to help select people for jobs, measure individual's job performance, and evaluate the effectiveness of training programs. Students are using psychological tests to gain greater insight into their personal interests, what major they should select, and to which graduate or professional schools they might apply.

In spite of their widespread use, psychological tests continue to be misunderstood and improperly used. At one extreme, these misunderstandings and misuses have led many people to believe psychological tests are useless and extremely harmful. At the other extreme, a substantial portion of the population believes that psychological tests are ideal and extremely precise instruments of measurement. More commonly, these misunderstandings and misuses have led to the misconceptions that psychological testing is synonymous with diagnosing mental disorders, that psychological tests can and should be used as a sole means for making decisions, and that anyone can administer and interpret a psychological test.

OUR MISSION

We have written *Foundations of Psychological Testing* in response to the growing need for an introductory textbook for undergraduate students. Specifically, we have written a text for undergraduate students new to the field of psychological testing and to the concepts of statistics and psychometrics that support its practice. Over the years, many of our students have lamented that textbooks do not always explain materials as clearly as a professor would during a class lecture. We have designed this text with those students' comments in mind.

Foundations of Psychological Testing provides a fresh look at the field of assessment and is written in a style that we believe will encourage student learning and enthusiasm. We

focus on the basics of assessment and relate those concepts to practical situations that students can recognize. Although current texts on psychological testing are moving in this direction, we believe that some texts—especially at the introductory level—are written at a level too complex for undergraduates and contain more detailed discussion of certain technical issues than is necessary.

Students must understand the proper application of psychological tests in order to appreciate how to maximize their usefulness. The prevalent use of these tests in the decision-making process necessitates a vital understanding of their capabilities and weaknesses. One way we, as educators, can stress the importance of this understanding is by promoting the inclusion of psychological testing courses in the undergraduate curriculum of all colleges and universities and to encourage students to enroll in these courses. Many positive changes have occurred since the first college courses and textbooks on psychological testing appeared. Courses and texts now stress the applied nature of psychological testing and focus more attention on the relevance of this topic to all individuals. Clarifying the concepts associated with psychological testing in the effort to increase understanding and to dispel all related myths and misconceptions has become a primary goal for many instructors.

Our primary objective in writing *Foundations of Psychological Testing* is to prepare students to be informed consumers as test users or test takers—not to teach students to administer or interpret individual psychological tests. Therefore, we have taken care to provide information on the basic concepts, issues, and tools used in psychological testing and their relevance to daily life. We conclude our text with an overview of how tests are used in educational, clinical, and organizational settings.

Foundations of Psychological Testing concentrates on the essentials of psychological testing at an introductory level; instructors can supplement these basic concepts with specific types of tests. We have divided the book into four sections. The first section of this text consists of four chapters that provide an overview of the basics of psychological testing. It discusses, among other things, what a psychological test is, where to find information about psychological tests, who uses psychological tests and for what reason, the history of psychological tests, some concerns our society has about the use of psychological tests, and the ethical and proper use of psychological tests.

Section Two consists of five chapters that cover psychometric principles. These chapters discuss the procedures we use to interpret test scores, the concepts of reliability and validity, and the methods for estimating reliability and validity. Section Three consists of three chapters in which we describe the process of designing and pilot testing a psychological test and how to construct, administer, and use surveys. The fourth, and final, section of the text consists of three chapters that discuss how tests are used in three important settings: education, clinical practice, and organizations.

In our experience, students learn best when information is not only presented at a comfortable reading level and in a conversational format, but when information is previewed, discussed, reviewed, and reinforced in multiple ways. Our text reflects these learning strategies and contains a number of learning tools at both the section level and the chapter level.

- **Preview.** Each section opens with a preview of the chapters in that section and a concept map that pictorially displays the material covered in those chapters. Concept maps make information meaningful through displaying relationships. They are multipurposeful in that they can be used to outline lecture notes, to represent materials graphically for papers or presentations, and to reinforce conceptual comprehension. We intend these previews to provide two tools that appeal to two very different learning styles—visual and verbal—and to prepare students to receive the material to be covered.

- **Chapter-opening vignettes.** Each chapter opens with anecdotes that pertain to the chapter topic. These anecdotes provide students with means to identify with the material by relating them to their own experiences.
- **Key words and concepts.** Within each chapter, we have taken care to alert students to key words and concepts that are important for them to master. Key words are in bold-face in the text and are defined within a logical structure to promote ease of comprehension. Key concepts are listed at the end of each chapter and again in the glossary at the back of the book.
- **Instruction through conversation.** In response to our students' cries of "Why couldn't the text have said it that way?" we have written each chapter the way our students best understand the information—at as simple a reading level as possible, and in most cases, in conversational style.
- **True to life.** The concepts in each chapter are illustrated by real-life examples drawn from the testing literature and from the authors' own experiences.
- **Boxes.** Each chapter contains the following boxes:
 - *For Your Information* boxes present relevant and interesting information about a particular topic.
 - *In Greater Depth* boxes provide more detailed information and calculations relevant to a particular topic.
 - *Summary Boxes* appear at varying intervals. These boxes summarize important, and often misunderstood, information discussed in the chapter.
- **Learning activities.** Activities for groups and individuals appear at the end of each chapter and can be assigned as in-class activities or homework.

We hope you will find this text to be an informative, interesting, and appropriate undergraduate introduction to the field of psychological testing. We encourage you to communicate with us. We look forward to your comments and suggestions for improvements to *Foundations of Psychological Testing*.

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