Handbook of Intelligence

Spurred by the new developments in a rapidly expanding field, Robert J. Sternberg has brought together a stellar list of contributors to provide a comprehensive, broad, and deeply thematic review of intelligence that will be accessible to both scholar and student. The field of intelligence is lively on many fronts, and this volume provides full coverage on topics such as behavior-genetic models, evolutionary models, cognitive models, emotional intelligence, practical intelligence, and group differences. The 28 chapters in the handbook are divided into 9 parts: I. The Nature of Intelligence and Its Measurement, II. Development of Intelligence, III. Group Analyses of Intelligence, IV. Biology of Intelligence, V. Intelligence and Information Processing, VI. Kinds of Intelligence, VII. Testing and Teaching Intelligence, VIII. Intelligence, Society, and Culture, and IX. Intelligence in Relation to Allied Constructs.

The handbook will serve as an authoritative resource on all aspects of theory, research, and measurement in the field of intelligence.

Robert J. Sternberg is IBM Professor of Psychology and Education in the Department of Psychology at Yale University. He is author of Thinking Styles, Metaphors of Mind, and The Psychologist's Companion, and editor of the Handbook of Creativity.
HANDBOOK OF
Intelligence

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This book is dedicated to the memory of Samuel Messick, a scholar who, in the tradition of the early pioneers in the study of human intelligence, valiantly sought to merge issues of theory and measurement, and of research and application, in the study of human intelligence.
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Preface

We make judgments about people's intelligence everyday—in conversations with people, in reading about people, in listening to news stories about people. Societies also have designed special occasions in which intelligence can be assessed—intelligence tests, aptitude tests, job interviews, university application essays, and the like. But what is this intelligence about which so many judgments are being made?

The *Handbook of Intelligence* provides what is perhaps the most comprehensive account available of what intelligence is, how it is assessed, how it is developed, and how it affects society and its institutions. There are few questions about intelligence that are not addressed somewhere in the scope of this handbook. The handbook is written not only for psychologists but for any educated individual with an interest in the study of intelligence. Educators, anthropologists, sociologists, philosophers, cognitive scientists, neuroscientists, and laypeople alike will find the chapters of this book written in a manner that is both easily readable and quickly understandable. Because the coverage of the book is so broad, it can be read as a reference on an as-needed basis for those who would like information about a particular topic, or from cover to cover either as a sourcebook or as a textbook in a course dealing with human intelligence.

The *Handbook of Intelligence* complements the *Encyclopedia of Human Intelligence* that I edited (Sternberg, 1994) in that it provides a topical rather than an alphabetical account of topics in human intelligence. Of course, the handbook is also more up-to-date. The handbook also follows upon and supercedes the *Handbook of Human Intelligence* (Sternberg, 1982), published about 20 years ago. The present handbook, in addition to being more up-to-date, is considerably more comprehensive. Its 28 chapters (compared with 15 in the 1982 handbook) cover additional topics that, since the 1980s, have blossomed into important areas of study, such as social intelligence, practical intelligence, emotional intelligence, and the teaching of intelligence. Other topics that might have been included in the earlier handbook but were not are also included, such as giftedness, group differences in intelligence, animal intelligence, the neuropsychology and psychophysiology of intelligence, tests of intelligence, the interpretation of intelligence test scores, and the relation of intelligence to creativity and wisdom. In addition, the development of intelligence is now divided into two chapters, one on development in childhood and one on development in adulthood.

The book is divided into nine main parts. Each part deals with a somewhat different aspects of intelligence.

Part I, The Nature of Intelligence and Its Measurement (Chapters 1–3), deals with general issues in what intelligence is and how it is measured. In this part, Robert J. Sternberg discusses the concept of intelligence. Nathan Brody reviews the history of theories and measurements of intelligence, and Janet E. Davidson and C. L. Downin present contemporary models of intelligence.

Part II, Development of Intelligence (Chapters 4–6), deals with how intelligence develops from conception to old age. In this part, Elena L. Grigorenko discusses heritability and intelligence,
Zhe Chen and Robert S. Siegler review the topic of intellectual development in childhood, and Cynthia A. Berg covers the topics of intellectual development in adulthood.

Part III, Group Analyses of Intelligence (Chapters 7–9), deals with how particular groups differ from one another in intelligence. In this part, Douglas Detterman, Lynne Gabriel, and Joanne Ruthsatz discuss intelligence and mental retardation; Carolyn Callahan analyzes intelligence and giftedness; and John Loeblin provides an overall review of group differences in intelligence.

Part IV, Biology of Intelligence (Chapters 10–12), covers intelligence in nonhuman organisms as well as biological issues in human intelligence and its evolution. In this part, Thomas Zentall reviews the literature on animal intelligence; Harry Jerison discusses the evolution of intelligence; and Philip Vernon, John Wickett, P. Gordon Bazana, and Robert Stelmack elucidate the neuropsychology and psychophysiology of human intelligence.

Part V, Intelligence and Information Processing (Chapters 13–15), covers the relation of intelligence to information processing at all levels in both humans and computers. In this part, Ian Deary discusses simple information processing and intelligence; David Lohman provides an overview of complex information processing and intelligence, and Roger Schank and Brendon Towle deal with artificial intelligence.

Part VI, Kinds of Intelligence (Chapters 16–18), covers some of the major kinds of intelligence that researchers are investigating today. In this part, John Kihlstrom and Nancy Cantor discuss social intelligence; Richard K. Wagner reviews work on practical intelligence; and John Mayer, Peter Salovey, and David Caruso discuss emotional intelligence.

Part VII, Testing and Teaching Intelligence (Chapters 19–22), covers issues of how intelligence is tested and taught. In this part, Susan Embretson and Karen McCollam discuss psychometric approaches to the understanding and measurement of intelligence, Alan Kaufman reviews tests of intelligence, Mark Daniel elucidates interpretation of intelligence test scores, and Tina Grozter and David Perkins discuss teaching of intelligence.

Part VIII, Intelligence, Society, and Culture (Chapters 23–25), covers how intelligence relates to the broader context in which it is found. In this part, Richard Mayer reviews work on Intelligence and education, Craig Ramey discusses issues of intelligence and public policy, and Robert Serpell elucidates the relation of intelligence and culture.

Part IX, Intelligence in Relation to Allied Constructs (Chapters 26–28), covers how intelligence relates to other constructs sometimes associated with intelligence. In this part, Moshe Zeidner and Gerald Matthews discuss intelligence and personality, Robert J. Sternberg and Linda O'Hara cover intelligence and creativity, and Robert J. Sternberg covers intelligence and wisdom.

The Handbook of Intelligence will meet the needs of anyone curious about the nature of intelligence and how intelligence affects society and culture. It should serve as a comprehensive source of information for many years to come.

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