Handbook of Creativity

The goal of the Handbook of Creativity is to provide the most comprehensive, definitive, and authoritative single-volume review available in the field of creativity. To this end, the book contains 22 chapters covering a wide range of issues and topics in this field, all written by distinguished leaders. The chapters are intended to be accessible to all readers with an interest in creative thinking. Although the authors are leading behavioral scientists, people in all disciplines will find the coverage of creativity in the arts and sciences to be of interest. The volume's first part sets out the major themes and reviews the history of thinking about creativity. Subsequent parts deal with methods, origins, self and environment, special topics, and conclusions.

Robert J. Sternberg is IBM Professor of Psychology and Education at Yale University. He is a Fellow of the American Academy of Arts and Sciences, and has served as President of the Divisions of General Psychology and Educational Psychology in the American Psychological Association. His work has been honored by the Early Career and McCandless Awards of the APA and the Research Review, Outstanding Book, and Sylvia Scribner Awards of the American Educational Research Association. His recent books include Cupid's Arrow: The Course of Love Through Time, Thinking Styles, and Intelligence, Heredity, and Environment (coedited with Elena Grigorenko).
Handbook of Creativity

Edited by ROBERT J. STERNBERG
## Contents

List of Contributors .......................... page vii  
Preface ................................. ix  

### PART I  INTRODUCTION

1. The Concept of Creativity: Prospects and Paradigms  
   Robert J. Sternberg and Todd I. Lubart  
   .......................................................... 3  

2. A History of Research on Creativity  
   Robert S. Albert and Mark A. Runco  
   .......................................................... 16  

### PART II  METHODS FOR STUDYING CREATIVITY

3. Psychometric Approaches to the Study of Human Creativity  
   Jonathan A. Plucker and Joseph S. Renzulli  
   .......................................................... 35  

4. Experimental Studies of Creativity  
   Mark A. Runco and Shawn Okuda Sakamoto  
   .......................................................... 62  

5. The Case Study Method and Evolving Systems Approach for  
   Understanding Unique Creative People at Work  
   Howard E. Gruber and Doris B. Wallace  
   .......................................................... 93  

6. Creativity from a Historiometric Perspective  
   Dean Keith Simonton  
   .......................................................... 116  

### PART III  ORIGINS OF CREATIVITY

7. Biological Bases of Creativity  
   Colin Martindale  
   .......................................................... 137  

8. Evolving Creative Minds: Stories and Mechanisms  
   Charles J. Lumsden  
   .......................................................... 153  

9. The Development of Creativity  
   David Henry Feldman  
   .......................................................... 169  

### PART IV  CREATIVITY, THE SELF, AND THE ENVIRONMENT

10. Creative Cognition  
    Thomas B. Ward, Steven M. Smith, and Ronald A. Finke  
    .......................................................... 189
vi

Contents

11 From Case Studies to Robust Generalizations: An Approach to the Study of Creativity
   Emma Poliastro and Howard Gardner 213

12 Creativity and Knowledge: A Challenge to Theories
   Robert W. Weisberg 226

13 Creativity and Intelligence
   Robert J. Sternberg and Linda A. O’Hara 251

14 The Influence of Personality on Artistic and Scientific Creativity
   Gregory J. Feist 273

15 Motivation and Creativity
   Mary Ann Collins and Teresa M. Amabile 297

16 Implications of a Systems Perspective for the Study of Creativity
   Mihaly Csikszentmihalyi 313

PART V SPECIAL TOPICS IN CREATIVITY

17 Creativity Across Cultures
   Todd I. Lubart 339

18 Computer Models of Creativity
   Margaret A. Boden 351

19 Organizational Creativity
   Wendy M. Williams and Lana T. Yang 373

20 Enhancing Creativity
   Raymond S. Nickerson 392

21 Prodigies and Creativity
   Michael J. A. Howe 431

PART VI CONCLUSION

22 Fifty Years of Creativity Research
   Richard E. Mayer 449

Author Index 461

Subject Index 479
Contributors

Robert S. Albert
Pitzer College
1050 N. Mills
Claremont, CA 91711

Teresa M. Amabile
Graduate School of Business
Harvard University
Soldier's Field Road
Boston, MA 02163

Margaret A. Boden
School of Cognitive and Computing Sciences
University of Sussex
Brighton BN1 9QH
United Kingdom

Mary Ann Collins
Department of Psychology
Spring Hill College
4000 Dauphin Street
Mobile, AL 36608

Mihaly Csikszentmihalyi
Department of Psychology
University of Chicago
Chicago, IL 60637

Gregory J. Feist
Department of Psychology
College of William and Mary
P.O. Box 8795
Williamsburg, VA 23187

David Henry Feldman
Department of Child Study
Tufts University
Medford, MA 02155

Ronald A. Finke
Department of Psychology
Texas A&M University
College Station, TX 77843-4235

Howard Gardner
Graduate School of Education
Harvard University
Longfellow Hall, Appian Way
Cambridge, MA 02138-3752

Howard E. Gruber
Teachers College
Columbia University
525 West 120th Street
New York, NY 10027-6625

Michael J. A. Howe
Department of Psychology
University of Exeter
Washington Singer Laboratories
Perry Road
Exeter EX4 4QG
United Kingdom

Todd I. Lubart
Laboratoire de Psychologie Differentielle
Université René Descartes
28 rue Serpente
Paris 75006
France

Charles J. Lumsden
Institute of Medical Science
Medical Sciences Building
University of Toronto
Toronto, Ontario M5S 1A8
Canada
Contributors

Colin Martindale
Department of Psychology
Clarence Cook Little Hall
University of Maine
Orono, ME 04469-0140

Richard E. Mayer
Department of Psychology
University of California at Santa Barbara
Santa Barbara, CA 93106

Raymond S. Nickerson
Department of Psychology
Paige Hall
Tufts University
Medford, MA 02155

Linda A. O’Hara
Department of Psychology
Yale University
P.O. Box 208205
New Haven, CT 06520-8205

Jonathan A. Plucker
5766 Shibles Hall
University of Maine
Orono, ME 04469-5766

Emma Policastro
Graduate School of Education
Harvard University
Longfellow Hall, Appian Way
Cambridge, MA 02138-3752

Joseph S. Renzulli
Department of Psychology
University of Connecticut
362 Fairfield Road u-7
Storrs, CT 06267-2007

Mark A. Runco
California State University EC 105
Fullerton, CA 92634

Shawn Okuda Sakamoto
Institute for the Academic Advancement of Youth

Johns Hopkins University
3400 N. Charles Street
Baltimore, MD 21218

Dean Keith Simonton
Department of Psychology
University of California at Davis
Davis, CA 95616

Steven M. Smith
Department of Psychology
Texas A&M University
College Station, TX 77843-4235

Robert J. Sternberg
Department of Psychology
Yale University
P. O. Box 208205
New Haven, CT 06520-8205

Doris B. Wallace
Teachers College
Columbia University
525 West 120th Street
New York, NY 10027-6625

Thomas B. Ward
Department of Psychology
Texas A&M University
College Station, TX 77843-4235

Robert W. Weisberg
Department of Psychology
Temple University
Philadelphia, PA 19122

Wendy M. Williams
Human Development and Family Studies
Martha Van Rensselaer Hall
Cornell University
Ithaca, NY 14853

Lana T. Yang
Columbia University Law School
435 West 116 St.
New York, NY 10027
Preface

The goal of the Handbook of Creativity is to provide the most comprehensive, definitive, and authoritative single-volume review available in the field of creativity. To this end, the book contains 22 chapters covering a wide range of issues and topics in this field.

The chapters are intended to be accessible to all individuals with an interest in creative thinking. Although the authors are leading behavioral scientists and most readers are likely to have an interest in behavioral sciences, those involved in the natural sciences and humanities will find much that appeals to them in the volume, especially because so many of the examples and even case studies draw on the natural sciences and humanities.

The volume is divided into six parts, each dealing with a different aspect of creativity and its investigation. Part I, the introduction, sets out the volume's major themes. It reviews the history of thinking about creativity in general and the field of creativity in particular. Part II characterizes some of the main ways in which creativity can be investigated. Part III looks at how creativity originates and develops, both over the course of historical time and over the course of an individual's life span. Part IV considers the relation between the self and the environment in the nature and development of creativity. Part V deals with a wide variety of topics in the study of creativity that are outside the mainstream but that are nevertheless important to the field. Part VI, the conclusion, contains one essay that summarizes the chapters that precede it.

I am grateful to Julia Hough for her support of this project and for the support given by the Javits Program, Grant R206R50001 of the U.S. Office of Educational Research and Improvement, in funding my own research on creativity and backing this volume. Sai Durvasula was instrumental in the preparation of the manuscripts.
Handbook of Creativity