
HANDBOOK OF SELF-REGULATION

Edited by

MONIQUE BOEKAERTS

Leiden University

Center for the Study of Education and Instruction
Leiden, The Netherlands

PAUL R. PINTRICH

University of Michigan

Combined Program in Education and Psychology
Ann Arbor, Michigan

MOSHE ZEIDNER

University of Haifa

Faculty of Education
Mount Carmel, Israel



ACADEMIC PRESS

A Harcourt Science and Technology Company

San Diego San Francisco New York Boston London Sydney Tokyo

CONTENTS

FOREWORD XXI
ABOUT THE EDITORS XXV
CONTRIBUTORS XXVII

1

SELF-REGULATION: AN INTRODUCTORY OVERVIEW

MONIQUE BOEKAERTS, PAUL R. PINTRICH, AND MOSHE ZEIDNER

PART I

GENERAL THEORIES AND MODELS OF SELF-REGULATION

2

ATTAINING SELF-REGULATION: A SOCIAL COGNITIVE PERSPECTIVE

BARRY J. ZIMMERMAN

- I. Introduction 13
 A. A Triadic Definition of Self-Regulation 13

- II. The Structure of Self-Regulatory Systems 15
 - A. *Forethought Phase* 16
 - B. *Performance or Volitional Control Phase* 18
 - C. *Self-Reflection Phase* 21
- III. Social and Environmental Influences on Self-Regulation 24
- IV. Dysfunctions in Self-Regulation 26
- V. Development of Self-Regulatory Skill 28
- VI. Future Research Directions 32
- VII. A Concluding Comment 34
 - References 35

3

ON THE STRUCTURE OF BEHAVIORAL SELF-REGULATION

CHARLES S. CARVER AND MICHAEL F. SCHEIER

- I. Behavior Is Goal Directed and Feedback Controlled 42
 - A. *Feedback Loops* 42
 - B. *Reemergent Interest in Approach and Avoidance* 46
- II. Hierarchicality among Goals 47
 - A. *Premise: Goals Can Be Differentiated by Levels of Abstraction* 47
 - B. *Action Identification* 48
 - C. *Multiple Paths to High-Level Goals, Multiple Meanings in Concrete Action* 49
 - D. *Goal Importance: Goals and the Self* 50
- III. Feedback Control and Creation of Affect 51
 - A. *Theory* 51
 - B. *Research Evidence* 52
 - C. *Cruise Control Model* 52
 - D. *Affect from Discrepancy-Enlarging Loops* 53
 - E. *Merging Affect and Action* 54
 - F. *Is This Really a Feedback System?* 55
 - G. *Shifts in Standards* 56
 - H. *Comparison with Biological Models of Bases of Affect* 58
- IV. Confidence and Doubt, Persistence and Giving Up 60
 - A. *Engagement versus Giving Up* 61
 - B. *Is Disengagement Good or Bad?* 62

5

A FUNCTIONAL-DESIGN APPROACH TO MOTIVATION AND SELF-REGULATION: THE DYNAMICS OF PERSONALITY SYSTEMS AND INTERACTIONS

JULIUS KUHL

- I. Introduction 111
 - A. *Cognitive versus Dynamic Concepts of Motivation* 113
 - B. *The Theory of Action Control* 114
- II. Dynamic Concepts in Classical Theories of Motivation 116
 - A. *Neglect of Subcognitive Mechanisms* 117
 - B. *Underspecification of Dynamic Concepts* 118
- III. Aristotle's Dynamic Concepts 121
 - A. *Functional Explanation of Aristotle's Theory of Motivation* 122
 - B. *Systems Interactions: Modulation of Connectivity among Subsystems* 123
- IV. Personality Systems Interaction Theory 126
 - A. *Elementary Systems: Intuitive Behavior Control and Object Recognition* 127
 - B. *High-Level Systems: Intention Memory and Analytical Thinking versus Extension Memory and Intuitive Feeling* 128
 - C. *Affect-Cognition Modulation* 134
 - D. *Microanalytic Testing of Dynamic Modulation Effects* 147
- V. Back to the Future: From Contents to Mechanisms 148
 - A. *Reinterpretation of Familiar Phenomena* 149
 - B. *Decomposing Self-Regulation: New Self-Report and Objective Assessment Techniques* 154
- VI. Conclusion 159
- References 163

6

PERSONALITY, SELF-REGULATION, AND ADAPTATION: A COGNITIVE – SOCIAL FRAMEWORK

GERALD MATTHEWS, VICKI L. SCHWEAN, SIAN E. CAMPBELL,
DONALD H. SAKLOFSKE, AND ABDALLA A. R. MOHAMED

- I. Frameworks for Personality and Self-Regulation Research 171

- A. *Constructs of the Cognitive–Social Framework* 172
- B. *A Cognitive Architecture for Self-Regulation* 174
- C. *Self-Regulation and Social Cognition* 175
- D. *Traits and Stable Individual Differences in Self-Regulation* 176
- II. *Self-Regulation, Traits, and Cognitive Stress Processes* 177
 - A. *Coping* 177
 - B. *Appraisal* 179
 - C. *Metacognition and Mood Awareness* 180
 - D. *Worry* 181
- III. *Personality and Self-Regulation of Reactions to Life Stress* 182
 - A. *Neuroticism as a Predictor of Appraisal and Coping* 182
 - B. *Mediation of Neuroticism Effects by Cognitive Stress Processes* 184
 - C. *Dispositional Self-Consciousness and Cognitive Stress Processes* 185
- IV. *Personality and Self-Regulation in Performance Environments* 187
 - A. *Cognitive–Attentional Mechanisms for Anxiety Effects on Performance* 187
 - B. *Self-Regulation and Stress Processes in Performance Environments* 188
- V. *Aggressive Behavior* 193
 - A. *Cognitive Processes in Aggression* 194
 - B. *Research Exploring Cognitive Distortions in Aggressive Children* 196
 - C. *Research Exploring Cognitive Deficiencies in Aggressive Children* 197
 - D. *Developing the Theory of Aggression and Self-Regulation* 198
- VI. *Conclusions* 199
- References* 201

7

ORGANIZATION AND DEVELOPMENT OF SELF-UNDERSTANDING AND SELF-REGULATION: TOWARD A GENERAL THEORY

ANDREAS DEMETRIOU

- I. *Introduction* 209
- II. *The Architecture of Self-Aware and Self-Regulated Systems* 211
 - A. *The Mind* 212
 - B. *Temperament, Personality, Thinking Styles, and the Self* 222
 - C. *Toward an Overarching Model of Mind, Personality, and Self* 226

- III. Development of Self-Understanding and Self-Regulation 227
 - A. *Development of the Child's Understanding of the Organization and Functioning of the Mind* 228
 - B. *Development of Self-Representation* 232
 - C. *Development of Self-Regulation* 234
- IV. Explaining the Development of Self-Understanding and Self-Regulation 237
 - A. *Intraindividual Dynamics in the Development of Self-Understanding and Self-Regulation* 238
 - B. *Interindividual Dynamics in the Development of Self-Understanding and Self-Regulation* 240
 - C. *Looking to the Future: Integrating Research on Mind, Personality, and Self* 242
- V. Conclusions 244
- References 246

8

THE ROLE OF INTENTION IN SELF-REGULATION: TOWARD INTENTIONAL SYSTEMIC MINDFULNESS

SHAUNA L. SHAPIRO AND GARY E. SCHWARTZ

- I. Systems Theory, Self-Regulation, and Mindfulness 255
- II. Self-Regulation 256
- III. Self-Regulation Techniques and Potential Limitations 257
- IV. Psychophysiological Research on Self-Regulation—
Physiology and Energy 258
- V. Elaboration of an Expanded Self-Regulation Model: Intention 259
- VI. Intention 260
- VII. Intentional Systemic Mindfulness: Mindfulness Qualities and
Systemic Perspectives 260
- VIII. Applications of Intentional Systemic Mindfulness to
Self-Regulation Techniques 265
- IX. Connectedness and Interconnectedness 266
- X. General Principle of Intentional Systemic
Mindfulness Interventions 268
- XI. Facilitating Intention Systemic Mindfulness 268
- XII. Directions for Future Research 269
- XIII. Implications for Health and Medicine 269
- XIV. Summary 270
- References 270

9

COMMUNAL ASPECTS OF SELF-REGULATION

TAMARA JACKSON, JEAN MACKENZIE, AND STEVAN E. HOBFOLL

- I. Introduction 275
 - A. *Communal Regulation* 276
 - B. *Embedded Social Components of Self-Regulation Models* 276
 - C. *Individualistic Terms of Traditional Models of Self-Regulation* 280
 - D. *Concept of Interreliance* 282
 - E. *The Impact of Culture on Self-Regulatory Behaviors* 283
- II. Coping as Self-Regulation 287
 - A. *Social Context of Coping* 288
 - B. *Multiaxial Model of Coping* 289
 - C. *Communal Mastery* 291
 - D. *Directions for Future Research* 294
- III. Summary and Conclusion 295
 - References 296

PART II

DOMAIN-SPECIFIC MODELS AND RESEARCH ON SELF-REGULATION

10

SELF-REGULATION IN ORGANIZATIONAL SETTINGS:

A TALE OF TWO PARADIGMS

JEFFREY B. VANCOUVER

- I. Introduction 303
- II. Definitions 304
 - A. *Self-Regulation* 304
 - B. *Self-Regulated Learning* 306
 - C. *Summary* 307
- III. Two Paradigms 308
 - A. *Cybernetic-Systems Paradigm* 309
 - B. *The Decision-Making Paradigm* 320

- IV. The Paradigms in Industrial–Organizational Psychological Theories of Self-Regulation 324
 - A. *Goal-Setting Theory* 324
 - B. *Social Cognitive Theory* 324
 - C. *Action Theory* 326
 - D. *Summary* 328
- V. Merging the Paradigms 328
 - A. *Learning in the Action Hierarchy* 328
 - B. *Gates and Modes of Operation* 331
 - C. *Some Data* 333
- VI. Conclusion 335
 - References 336

11

SELF-REGULATION AND HEALTH BEHAVIOR: THE HEALTH BEHAVIOR GOAL MODEL

STAN MAES AND WINIFRED GEBHARDT

- I. Introduction 343
- II. Current Health Behavior Models and Self-Regulation 345
- III. Self-Regulation and the Personal Goal Structure 350
- IV. Goal Alignment, Goal Conflict, and Goal Balance 352
- V. Goal Setting and Goal Orientation 353
- VI. Goals, Beliefs, and Emotions 355
- VII. The Self-Regulation Process 355
- VIII. The Health Behavior Goal Model 357
- IX. Conclusion and Directions for Future Research 363
 - References 367

12

REGULATION, SELF-REGULATION, AND CONSTRUCTION OF THE SELF IN THE MAINTENANCE OF PHYSICAL HEALTH

SUSAN BROWNLEE, HOWARD LEVENTHAL,
AND ELAINE A. LEVENTHAL

- I. The Self-Regulation Theme 369

- II. Problem Solving, Self-Regulation, and Regulation of the Self 370
 - A. *Dimensions along Which Problem Solving Shades into Self-Regulation and Regulation of the Self* 371
- III. Modeling Problem Solving, Self-Regulation, and Self-Construction 373
 - A. *The Origins of the Common-Sense Model* 376
- IV. Illness Cognition and Control Theory 382
 - A. *The Substance of Common-Sense Modeling* 384
- V. Coping Procedures: Generalized Factors versus If-Then Rules That Integrate Representations, Procedures, and Appraisals 389
- VI. The Self System 393
 - A. *Self as a Factor that Underlies and Moderates the Problem Space* 394
 - B. *Redefining and Reorganizing the Self and Modifying Its Procedures* 398
 - C. *The Social Environment* 402
- VII. Summary and Concluding Comments 407
 - References 409

13

SELF-REGULATED LEARNING: FINDING A BALANCE BETWEEN LEARNING GOALS AND EGO-PROTECTIVE GOALS

MONIQUE BOEKAERTS AND MARKKU NIEMIVIRTA

- I. Introduction 417
- II. What Turns a Potential Learning Opportunity into a Situation that the Student Identifies as Such? 418
 - A. *When Opportunity and Felt Necessity Coincide* 419
 - B. *Goals Viewed as Knowledge Structures that Guide Behavior* 421
- III. Self-Regulated Learning Originates in the Identification, Interpretation, and Appraisal of an Opportunity to Learn 423
 - A. *Identification of a Learning Situation* 424
 - B. *Interpretation and Appraisal* 426
 - C. *The Model of Adaptable Learning: Finding a Balance between Parallel Goals* 427
- IV. Goal Setting: An Essential Aspect of Self-Regulated Learning 431
 - A. *Curtailed Goal Paths* 433
 - B. *Goal Setting Based on Task-Focused and Self-Focused Interpretation* 436

- V. Self-Regulated Learning Implies Goal Striving 439
 - A. *Implementation Intentions* 439
 - B. *Dealing with Strategy Failure* 440
 - C. *Curtailed Goal Striving Should Not Be Equated with Failure of Self-Regulation* 442
- VI. Conclusions and Future Directions 445
 - References 446

14

THE ROLE OF GOAL ORIENTATION IN SELF-REGULATED LEARNING

PAUL R. PINTRICH

- I. A General Framework for Self-Regulated Learning 452
 - A. *Regulation of Cognition* 456
 - B. *Regulation of Motivation and Affect* 461
 - C. *Regulation of Behavior* 466
 - D. *Regulation of Context* 469
- II. Goal Orientation and Self-Regulated Learning 472
 - A. *Models of Goal Orientation* 474
 - B. *Mastery Goals and Self-Regulated Learning* 479
 - C. *Performance Goals and Self-Regulated Learning* 484
- III. Conclusions and Future Directions for
Theory and Research 489
 - References 494

15

MOTIVATION AND ACTION IN SELF-REGULATED LEARNING

FALKO RHEINBERG, REGINA VOLLMEYER,
AND WOLFRAM ROLLETT

- I. Introduction and Conceptual Framework 503
- II. An Action Model for the Prediction of Learning Motivation 507
 - A. *Research Strategy* 507
 - B. *A Cognitive Model of Motivation in Self-Regulated Learning* 508

- C. *Consequences for Enhancing Motivation in Classrooms* 512
- D. *Activity-Related Incentives* 513
- E. *Volitional Aspects of Self-Regulated Learning* 516
- III. *Motivation, Learning, and Performance* 519
 - A. *Motivational Influences during the Learning Process: Topic Interest and Text Learning* 520
 - B. *Self-Regulated Learning with a Complex Computer-Simulated System* 520
- IV. *Two Aims for Further Research* 523
 - A. *Search for Mediating Variables in Different Situations and Learning Tasks* 523
 - B. *How to Overcome Aversive Learning Activities* 524
- References 525

16

MEASURING SELF-REGULATED LEARNING

PHILIP H. WINNE AND NANCY E. PERRY

- I. *Measuring Intervenes in an Environment* 532
- II. *Measurements of Self-Regulated Learning Reflect a Model of Self-Regulated Learning* 533
 - A. *Components of Self-Regulated Learning* 533
 - B. *Self-Regulated Learning as Aptitude* 534
 - C. *Self-Regulated Learning as Event* 535
 - D. *The Self-Regulated Learning Model of Winne and Hadwin* 536
 - E. *Summary and Prelude to Measurements of Self-Regulated Learning* 541
- III. *Protocols for Measuring Self-Regulated Learning* 541
 - A. *Measuring Self-Regulated Learning as an Aptitude* 542
 - B. *Measuring Self-Regulated Learning as an Event* 549
- IV. *Issues in Measuring Self-Regulated Learning* 555
 - A. *Targets for Measurement* 555
 - B. *Metrics* 556
 - C. *Sampling* 558
 - D. *Technical Issues* 560
 - E. *Utility* 561
- V. *Conclusions and Future Directions* 562
- References 564

PART III

**INTERVENTIONS AND APPLICATIONS OF
SELF-REGULATION THEORY AND RESEARCH**

17

**SELF-REGULATION AND DISTRESS
IN CLINICAL PSYCHOLOGY**

NORMAN S. ENDLER AND NANCY L. KOCOVSKI

- I. Introduction 569
- II. Self-Regulation and Addictive Behaviors 572
 - A. *Goal Setting and Addictive Behaviors* 573
 - B. *Self-Monitoring and Addictive Behaviors* 574
 - C. *Self-Evaluation and Addictive Behaviors* 575
 - D. *Self-Reinforcement and Addictive Behaviors* 576
 - E. *Implications for Treatment* 577
- III. Self-Regulation and Health 578
 - A. *Goal Setting and Health* 579
 - B. *Self-Monitoring and Health* 580
 - C. *Self-Evaluation and Health* 580
 - D. *Self-Reinforcement and Health* 581
 - E. *Implications for Treatment* 581
- IV. Self-Regulation and Social Anxiety 584
 - A. *Goal Setting and Social Anxiety* 585
 - B. *Self-Monitoring and Social Anxiety* 586
 - C. *Self-Evaluation and Social Anxiety* 586
 - D. *Self-Reinforcement and Social Anxiety* 587
 - E. *Implications for Treatment* 587
- V. Self-Regulation and Depression 588
 - A. *Goal Setting and Depression* 588
 - B. *Self-Monitoring and Depression* 589
 - C. *Self-Evaluation and Depression* 589
 - D. *Self-Reinforcement and Depression* 590
 - E. *Implications for Treatment* 590
- VI. Self-Regulation and Therapy 591
- VII. Summary and Conclusions 592
 - References 593

18

SELF-MANAGEMENT OF CHRONIC ILLNESS

THOMAS L. CREER

- I. Introduction 601
- II. Characteristics of Chronic Illness 602
 - A. *Characteristics* 603
 - B. *Psychological Factors* 603
 - C. *Treatment Considerations* 604
- III. Treatment of Chronic Illness 605
 - A. *Explicit Plans and Guidelines* 605
 - B. *Practice Redesign* 605
 - C. *Clinical Expertise* 606
 - D. *Information* 606
 - E. *Patient Education* 606
- IV. Self-Management: Setting the Stage 606
 - A. *Self-Regulation or Self-Management?* 607
 - B. *Recruitment of Staff* 608
 - C. *Identification and Referral of Potential Subjects* 608
 - D. *Recruitment of Subjects* 609
 - E. *Expectancies* 609
 - F. *Racial and Cultural Differences* 612
 - G. *Task Demands* 612
- V. Processes of Self-Management 613
 - A. *Goal Selection* 613
 - B. *Information Collection* 614
 - C. *Information Processing and Evaluation* 615
 - D. *Decision Making* 616
 - E. *Action* 617
 - F. *Self-Reaction* 617
- VI. Discussion 618
 - A. *Development and Application of Self-Management Programs for Chronic Illness* 618
 - B. *Recruitment and Retention of Patients in a Self-Management Program* 619
 - C. *Maintenance of Self-Management Skills* 623
- VII. Future Directions and Conclusions 624
- References 626

22

SELF-REGULATION INTERVENTIONS WITH A FOCUS ON LEARNING STRATEGIES

CLAIRE ELLEN WEINSTEIN, JENEFER HUSMAN,
AND DOUGLAS R. DIERKING

- I. Historical Overview 728
- II. Learning Strategies Can Be Modified or Learned 728
- III. The Nature of Strategies and Strategy Instruction 730
- IV. Types of Learning Strategies and Their Relationship to Other Strategic Learning Components 731
- V. Model of Strategic Learning 733
- VI. Types of Strategy Instruction and Their Effectiveness 733
- VII. Important Components of Adjunct Courses 737
- VIII. The Nature and Impact of a Course in Strategic Learning at the University of Texas 738
- IX. Future Directions for Learning Strategies Research 743
- References 744

23

SELF-REGULATION: DIRECTIONS AND CHALLENGES FOR FUTURE RESEARCH

MOSHE ZEIDNER, MONIQUE BOEKAERTS, AND PAUL R. PINTRICH

- I. Developing a Tractable Conceptual Foundation and Consistent Nomenclature of Self-Regulation Constructs 750
- II. Clarifying Self-Regulation Structure and Processes 753
- III. Mapping Out the Nomological Network 755
- IV. Construction of More Refined Models 756
- V. Refining Measurement of Self-Regulation Constructs 757
- VI. Improving Research Methodology 759
- VII. Exploring Interactions between Environment and Self-Regulation 761
- VIII. Acquisition and Transmission of Self-Regulatory Skills 763
- IX. Examining Developmental Differences in Self-Regulatory Skills 764
- X. Examining Individual Differences in Self-Regulatory Skills 764
- XI. Applications 765
- XII. Training and Promotion of Self-Regulatory Concepts 766
- References 768