Handbook of Sport Psychology
Handbook of Sport Psychology

Volume I

Edited by Gershon Tenenbaum and Robert C. Eklund

Managing Editor
Nataniel Boianging

Fourth Edition

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Foreword
From the First (1993) to the Fourth (2008) Editions of the *Handbook of Sport Psychology*

In the preface to the first edition of the *Handbook of Sport Psychology* (published by Macmillan), Singer, Murphey, and Tennant (1993) contemplated on issues relating to its structure, topical coverage, authorship, and geographic representation. They found it particularly challenging to distinguish among sport psychology, motor behavior, motor learning, motor control, and motor development while considering the contents and issues to be included in the seminal edition. Their expressed desire was also to provide coverage of research on applied issues, mainly mental interventions, which they claimed must be scientifically/evidenced based. The overall focus was aimed at providing the state of the art research in the relatively new but growing domain, while also acknowledging and highlighting conceptual and methodological issues and limitations to be addressed to facilitate further advancement. The first edition of the *Handbook of Sport Psychology* consisted of 44 chapters embedded within 11 sections (see Table 0.1).

In the first edition of the *Handbook*, much space has been given in the initial section to research topics and practices in countries such as France, Germany, Australia, the former USSR, China, and Japan. Eight chapters were devoted to issues of *skill acquisition*, mainly models and practices for developing and securing motor performance. Interestingly, decision-making was included in this section. A section on *high-level performance*—largely falls into the area of "expertise" in today's terms—consisted of chapters on topics such as personality, talent identification, competitive orientation, coping, managing, and regulating the emotion of anxiety, aggression, and individual differences in cognitive and perceptual styles. *Motivation*—a major topic in all the editions of the *Handbook*—was the focus of three chapters in the fourth section of the first edition, and all fell within social-cognitive schools of thought (i.e., goals for children, goal-orientation, and attributions). An additional important topic in the sport psychology domain which received major attention in the first edition across six chapters was *psychological techniques* (skills) required to excel in sport, such as planning actions (set goals), regulate emotions, manage pressure, and direct attention.

Subsequent sections in the *Handbook* included sections with an array of chapters on social influences (e.g., socialization, moral behaviors and spectator behaviors and their effect on the performer), *group dynamics* (e.g., social interactions, leadership, and cohesion), *life span development* (e.g., youth sport, gender, quality of life, and career termination), and *exercise and health* (e.g., exercise adherence and emotions, substance use, abuse and consequences in sport, injury rehabilitation, and staleness and overtraining) with the final sections involving two chapters on *psychometric* issues, and one chapter on *professional ethics*.

The second edition of the *Handbook of Sport Psychology*, published in 2001 by Wiley rather than Macmillan, was edited by Singer, Hausenblas, and Janelle. The content structure of the Handbook remained true to the first edition, but the number of chapters was reduced to 33 with some changes also evident within the sections in topical content and authorship. Most obviously, chapters were not included that provided an overview of sport psychology across the globe. Chapters remaining from the previous edition, though similar in content, were updated with new research and insights, while new chapters in exercise psychology, expertise, and psychophysiology entirely replaced earlier contributions. *Skill acquisition* consisted of chapters devoted to practices which secure a safe transition from childhood to adulthood, classical views related to the role of feedback, and a new integrative approach for the study of intentional production of movement. Chapters on the role of attention in skill development, and expertise in the motor domain were also included. A diverse set of chapters were included in the section on *high-level performance* including commentaries on personality characteristics and self-efficacy, coping with stress and anxiety, considering arousal, and modeling as a framework for linking motor skill performance and psychological responses. Also included in this section was a...
chapter on psychophysiology underlying superior performance, which has opened the era of studying the neural mechanisms of the “expert brain.” The part on motivation was covered by chapters reviewing the hierarchical structure of intrinsic-extrinsic motivation, achievement goal theory, and attributions—all involving both historical and new perspectives, as well as group cohesion. The section on psychological techniques included chapters on the common mental skill strategies of goal setting, imagery, and self-confidence, but also a general conceptualization of self-regulation in sport and exercise. The life span development section consisted of a collection of chapters on moral behavior, youth issues in sport, career termination, and physical activity effects on the quality of human life. The exercise and health psychology section included theoretical commentaries on capturing motivated behaviors and physical activity, and on exercise adherence and maintenance, along with chapters reviewing research on the mental health benefits of physical activity, injury risks prevention and rehabilitation, and the social-cognitive approach to perceived exertion. The last chapter of the second edition of the Handbook was devoted to future directions of the domain.
The third edition of the *Handbook of Sport Psychology* was published by Wiley in 2007 and edited by Gershon Tenenbaum and Robert Eklund. Robert Singer, the initiator and the lead editor of the first two Handbook editions, wrote the foreword in which he expressed his appreciation of the substantial advances in scholarship and applicability of sport and exercise psychology while also noting the sizable increases in number of researchers, counsellors, consultants, and clinicians in exercise and sport related disciplines. Singer emphasized the need for a comprehensive handbook in sport and exercise psychology relaying knowledge on the state of the art. From his perspective, the Handbook supported better instruction in the domain and stimulated scholarly productivity while also serving as valuable resource for clinical applications. He also maintained that the Handbook would continue to be the gold standard of the domain due to its intellectual content, breadth of topics, excellence of contributors, and topic coverage.

As new editors of the third edition of the *Handbook*, Tenenbaum and Eklund made both structural and content changes to the Handbook to represent the new knowledge and innovative ideas that had emerged since publication of the second edition of the *Handbook*. The third edition consisted of eight “parts” (previously termed sections) involving 39 chapters. The first part was focused on motivation, emotion, and psychophysiology with chapters relaying state of the art information on the dynamical nature of motivation through the achievement goal perspective, the extrinsic-intrinsic perspective of motivation, emotions in sport, and the neuroscience perspective of expertise in the motor domain. Unlike earlier editions, the part focused on social perspectives was separated out from motivation with one chapter on leadership in sport, and the other on self-presentation in exercise and sport. Also differing from earlier editions, an entire separate and extensive part of the *Handbook* was devoted to sport expertise to replace earlier sections on high-performance. This part consisted of six chapters devoted to reviewing research on sport expertise including commentary on methodological challenges and alternatives in research on expert performance, the development of expertise in practice and play, anticipation and decision-making in sports, attentional processes in the development of expertise, and a social-cognitive perspective of team performance expertise. Because of its significance to applied practice in sport, the part of the *Handbook* devoted to interventions and performance enhancement was noticeably expanded to span eight chapters. In short, those chapters covered topics such as mental skill training, clinical perspectives, action-theory applications to practice, eating disorders interventions, injury risks reduction, injury rehabilitation, prevention of choking under pressure, and preparatory mental routines required to secure optimal performance. The part of the *Handbook* focused on exercise and health psychology was also extended to eight chapters including commentaries devoted to the theoretical foundations of exercise psychology as well as the effects of exercise on mental health, elderly cognition, affect and self-perception, quality of life, helping cancer survivors, and athlete burnout. Exercise adherence and social-cognitive perspective of effort were also included. Life span development remained as a part of the *Handbook*, and included four chapters devoted to issues such as development of a comprehensive approach to study sport and exercise behaviors, sport morality, the family influence on child activities, and career transition. Measurement and methodology was further developed as a part of the third edition of the Handbook and included advances in measurement testing, reliability and validity issues, applications of confirmatory factor analysis, and the measurement of self and collective efficacies. The final part of the third edition was focused on special topics devoted to gender and cultural diversity, athletes with disabilities, and alcohol and drug abuse in sport.

The fourth and newest edition of the *Handbook of Sport Psychology*, also edited by Tenenbaum and Eklund and published by Wiley, has undergone substantial changes in scope, content, and size to reflect the major developments in the field. Its appearance is a full 13 years after publication of the third edition, which is considered a very long time in terms of scientific advancement, innovations, and developments. Accordingly, the *Handbook* includes 60 chapters embedded within 10 content parts which are presented in two volumes. It is important to acknowledge that not all the content areas of interest in this domain are covered in the fourth edition. Nonetheless, we believe that the topical contents most representative of scholarly activity at present have been selected. Importantly, we have approached leading scholars to author chapters on those topics. The resulting compendium is very comprehensive in spanning both scientific and applied scholarship in the domain to pave the way to an exciting future of further development and advancement in the field.

The first of the two volumes of the fourth edition of the *Handbook* is labeled Social Perspectives, Cognition, and Applications. The first part of this volume deals with motivation in sport and exercise. Chapters are included that review and expand the theory of planned behavior and self-determination theory, along with those focused on individual motivations in social context, and contemporary debate on efficacy beliefs in physical activity context. The second part of the first volume is focused on individual differences. This part is devoted to chapters focused on innovative issues as well as expansion of
traditional areas of interest such as the role of genetics in motor performance, new horizons in mental toughness, perfectionism, self-compassion, risk-taking, self-presentation, and passion. The subsequent part in the Handbook is focused on emotions and involves three chapters pertaining to affect in sport, emotions in sport, and self-conscious emotions in sport and exercise. The fourth part of Volume I is devoted to chapters that extend, expand, and integrate the self and the team. Chapters in this part of the first volume cover "traditional" areas of interest as well as areas emerging more recently as influential, including commentaries on the psychology of group dynamics, leadership, the Kohler effect and social comparison, moral behavior, peer influence in youth, positive youth development, and social support in sport. The fifth part of the first volume is focused upon cognition and expertise in the field. A state of the art review is provided along with neuroscience extension, cognitive architecture, attentional theories of choking, shared mental models in teams, creativity as a new component of expertise, and dynamic approach to cognition and action. Concerning the development of expertise, the chapters cover areas such as a new outlook on deliberate practice, and early sport specialization and sampling. Part 6 of the first volume is focused on the important and very popular issue of interventions and performance enhancement. The issues covered in this part do not repeat or extend the ones presented in the previous editions of the Handbook. The issues covered extensively here relate to optimizing attention focus, using brain technologies in practice, dealing with psychopathologies, treating the injured athlete, the use of mindfulness, and the consideration of ethical issues in the practice of sport psychology.

The second of the two volumes of the fourth edition of the Handbook is labeled Exercise, Methodologies, and Special Topics. The second volume starts with Part 7 of the Handbook. Part 7 is focused upon exercise as a medicine. This label gives tribute to the many mental and physical benefits of exercising and the chapters cover topics relating to the promotion of physical activity, the effect of exercise on cognitive function, brain structure and plasticity, cognition in the elderly, multiple sclerosis, anxiety and depression, and recovery from cancer. Part 8 in this volume complements the preceding Part 7 with chapters on exercise engagement and effort. These chapters challenge old models of motivation to exercise, and address issues such as the use of music in exercising, a dynamical approach to effort perception, automatic bases of physical activity, and habit in exercise behavior. Part 9 is devoted to the measurement and methodologies used by scholars in the sport and exercise psychology. Chapters in this part of the Handbook focus upon qualitative approaches and single case methods along with multi-variable and multi-level quantitative approaches such as structural equation modeling, modern factor analytic techniques, and multi-level modeling. Finally, the Handbook ends in Volume 2 with Part 10, special topics, which cover a variety of important topics such as the emergence of performance psychology, gender and culture, disability sport and exercise psychology, performance and appearance enhancing drugs, concussions in sport, body language, and athlete burnout.

All together, we believe the fourth edition of the Handbook of Sport Psychology will be found to be informative and authoritative by students and professionals in the field alike. Every effort has been made to ensure that it encapsulates, to the extent possible within two volumes, the depth and breadth of the state of the art in scholarship in the field. Indeed, a compendium of this size and authority can only result from the commitment and of contributions of many individuals. The 60 chapters of the fourth edition are authored by scholars who are experts at the forefront of their areas of research and/or practice. They were free to shape the form and substance of their chapters to survey and communicate the findings and issues of importance in their areas to the readers. We believe that all the authors have outdone themselves in their efforts to ensure that their chapters were defining commentaries in their respective areas. The authors of the chapters in this compendium have our deepest respect and thanks because the Handbook would be nothing without their contributions. We also extend our gratitude to the many scholars providing feedback and reviews on the chapters contained in the compendium. Some of these reviewers authored chapters in the Handbook but some did not but all provided yeoman service in constructively critiquing the work of others to improve the substance and clarity of commentaries that are contained in the Handbook. All individuals providing review service in this effort are identified and acknowledged on page xxi of the Handbook. Overall, the willingness of all authors and reviewers to invest countless hours in joining us in this daunting project was bracing and extremely satisfying. As editors, we hope that you’ll find this fourth edition of the Handbook of Sport Psychology to be as informative and fulfilling to read as we found in fulfilling our editorial responsibilities.

Gershon Tenenbaum
Robert C. Eklund
Authors List

Barbara E. Ainsworth  
Department of Kinesiology  
Shanghai University of Sport  
Shanghai, China

Veronica Allan  
School of Kinesiology and Health Studies  
Queen's University  
Kingston, Ontario, Canada

Duarte Araújo  
Faculty of Human Kinetics  
Universidade de Lisboa  
Cruz Quebrada Dafundo, Portugal

Michelle A. Arent  
Department of Health Promotion, Education, & Behavior  
University of South Carolina  
Columbia, South Carolina

Shawn M. Arent  
Department of Exercise Science  
University of South Carolina  
Columbia, South Carolina

Calum A. Arthur  
Faculty of Health Sciences and Sport  
University of Stirling  
Stirling, Scotland

Richard M. Ryan  
Australian Catholic University  
Brisbane, Australia

Patrick Baillie  
Alberta Health Services  
Calgary Police Service  
Calgary, Alberta, Canada

Joseph Baker  
School of Kinesiology and Health Science  
York University  
Toronto, Ontario, Canada

Natàlia Balagué  
Complex Systems in Sport Research Group  
Institut Nacional d’Educatió Física de Catalunya (INEFC)  
Universitat de Barcelona  
Barcelona, Spain

Vassilis Barkoukis  
Department of Physical Education and Sport Science  
Aristotle University of Thessaloniki  
Thessaloniki, Greece

Matthew Barlow  
School of Sport, Health, and Exercise Sciences  
Bangor University  
Bangor, United Kingdom

Nicolas Bastardoz  
Department of Organizational Behavior  
University of Lausanne  
Lausanne, Switzerland

Garrett F. Beatty  
Department of Applied Physiology and Kinesiology  
University of Florida  
Gainesville, Florida

Mark R. Beauchamp  
School of Kinesiology  
University of British Columbia  
Vancouver, British Columbia, Canada

Sigal Ben-Zaken  
Wingate Academic College  
Wingate Institute  
Netanya, Israel
Maurizio Bertollo  
Department of Medicine and Aging Sciences  
University Gabriele d’Annunzio of Chieti-Pescara  
Chieti, Italy  
and  
Department of Science and Technology  
University of Suffolk  
Ipswich, United Kingdom

Ian D. Boardley  
School of Sport, Exercise and Rehabilitation Sciences  
University of Birmingham  
Birmingham, United Kingdom

Ralf Brand  
Sport and Exercise Psychology  
University of Potsdam  
Potsdam, Germany

Katie L. Cederberg  
Department of Physical Therapy  
University of Alabama at Birmingham  
Birmingham, Alabama

Aïna Chalabaev  
Laboratoire SENS  
Univ. Grenoble Alpes  
Grenoble, France

Yu-Kai Chang  
National Taiwan Normal University  
Taipei, Taiwan (Republic of China)

Feng-Tzu Chen  
National Taiwan Normal University  
Taipei, Taiwan (Republic of China)

Mark Conner  
School of Psychology  
University of Leeds  
Leeds, United Kingdom

Jean Côté  
School of Kinesiology and Health Studies  
Queen’s University  
Kingston, Ontario, Canada

Stewart T. Cotterill  
School of Psychology, Sport and Physical Activity  
AECC University College  
Bournemouth, United Kingdom

S. Nicole Culos-Reed  
Faculty of Kinesiology  
University of Calgary  
Calgary, Alberta, Canada

Keith Davids  
Centre for Sports & Exercise Science  
Sheffield Hallam University  
Sheffield, United Kingdom

Colin J. Deal  
Kinesiology, Sport, and Recreation  
University of Alberta  
Edmonton, Alberta, Canada

J. D. DeFreese  
Department of Exercise and Sport Science  
University of North Carolina at Chapel Hill  
Chapel Hill, North Carolina

Cheryl Der Ananian  
School of Nutrition and Health Promotion  
Arizona State University  
Phoenix, Arizona

James A. Dimmock  
School of Human Sciences  
The University of Western Australia  
Perth, Australia

Michael Doppelmayr  
Department of Health  
Johannes Gutenberg University  
Mainz, Germany

David W. Eccles  
College of Education  
Florida State University  
Tallahassee, Florida

Panteleimon Ekkekakis  
Department of Kinesiology  
Iowa State University  
Ames, Iowa

Robert C. Eklund  
College of Education  
Florida State University  
Tallahassee, Florida

Karl Erickson  
Department of Kinesiology  
Michigan State University  
East Lansing, Michigan
Jennifer L. Etnier  
Department of Kinesiology  
University of North Carolina at Greensboro  
Greensboro, North Carolina  

Bradley J. Fawver  
College of Health  
University of Utah  
Salt Lake City, Utah  

Deborah L. Feltz  
Department of Kinesiology  
Michigan State University  
East Lansing, Michigan  

Edson Filho  
School of Psychology  
University of Central Lancashire  
Preston, United Kingdom  

Paul Freeman  
School of Sport, Rehabilitation and Exercise Sciences  
University of Essex  
Colchester, United Kingdom  

Philip Furley  
Institute for Training and Computer Science in Sport  
German Sport University Cologne  
Cologne, Germany  

Sergi García-Retortillo  
Complex Systems in Sport Research Group  
School of Health and Sport Sciences (EUSES)  
Universitat de Girona  
Salt (Girona), Spain  

Benjamin Gardner  
Department of Psychology  
King’s College London  
London, United Kingdom  

Frank L. Gardner  
School of Health Sciences  
Touro College  
New York, New York  

Alexandre Gareau  
School of Psychology  
University of Ottawa  
Ottawa, Ontario, Canada  

Patrick Gaudreau  
School of Psychology  
University of Ottawa  
Ottawa, Ontario, Canada  

Jenna D. Gilchrist  
Department of Public Health and Health Systems  
University of Waterloo  
Waterloo, Ontario, Canada  

Diane L. Gill  
Department of Kinesiology  
University of North Carolina at Greensboro  
Greensboro, North Carolina  

Rob Gray  
Human Systems Engineering  
Arizona State University  
Mesa, Arizona  

Daniel F. Gucciardi  
School of Physiotherapy and Exercise Science  
Curtin University  
Perth, Australia  

Michelle Guerrero  
Children’s Hospital of Eastern Ontario Research Institute  
Healthy Active Living and Obesity Research Group  
Ontario, Canada  

Franziska Gutmann  
Sport and Exercise Psychology  
University of Potsdam  
Potsdam, Germany  

Lew Hardy  
School of Sport, Health, and Exercise Sciences  
Bangor University  
Bangor, United Kingdom  

Brandomn S. Harris  
Department of Health Sciences and Kinesiology  
Georgia Southern University  
Statesboro, Georgia  

Mark E. Hartman  
Department of Kinesiology  
Iowa State University  
Ames, Iowa  

Bradley D. Hatfield  
Department of Kinesiology  
University of Maryland  
College Park, Maryland  

Fabian Helm  
Department for Movement Science and Training in Sports  
Goethe University Frankfurt  
Frankfurt, Germany
Andrew P. Hill  
School of Sport  
York St. John University  
York, United Kingdom

Christopher Hill  
Department of Kinesiology  
Michigan State University  
East Lansing, Michigan

Nicholas L. Holt  
Kinesiology, Sport, and Recreation  
University of Alberta  
Edmonton, Alberta, Canada

Timothy C. Howle  
School of Human Sciences  
The University of Western Australia  
Perth, Western Australia, Australia

Robert Hristovski  
Faculty of Physical Education, Sport and Health  
Saints Cyril and Methodius University  
Skopje, North Macedonia

Ben Jackson  
School of Human Sciences  
The University of Western Australia  
Perth, Australia

Christopher M. Janelle  
Department of Applied Physiology and Kinesiology  
University of Florida  
Gainesville, Florida

Kyle J. Jaquess  
Department of Kinesiology  
University of Maryland  
College Park, Maryland

Gareth E. Jowett  
Carnegie School of Sport  
Leeds Beckett University  
Leeds, United Kingdom

Costas I. Karageorghis  
Department of Life Sciences  
Brunel University London  
Middlesex, United Kingdom

Joseph R. Kronzer  
School of Kinesiology  
University of Minnesota, Twin Cities  
Minneapolis, Minnesota

Matthew A. Ladwig  
Department of Kinesiology  
Iowa State University  
Ames, Iowa

Lambros Lazaras  
Department of Psychology, Sociology & Politics  
Sheffield Hallam University  
Sheffield, United Kingdom

Seungmin Lee  
Department of Kinesiology  
Michigan State University  
East Lansing, Michigan

Rebecca Lewthwaite  
Physical Therapy Department  
Rancho Los Amigos National Rehabilitation Center  
Downey, California  
and  
Division of Biokinesiology and Physical Therapy  
University of Southern California  
Los Angeles, California

Li-Chuan Lo  
Department of Kinesiology  
University of Maryland  
College Park, Maryland

Daniel J. Madigan  
School of Sport  
York St. John University  
York, United Kingdom

Sarah H. Mallinson-Howard  
School of Sport  
York St. John University  
York, United Kingdom

Jeffrey Martin  
Division of Kinesiology, Sport Studies and Health  
Wayne State University  
Detroit, Michigan

Lindsay McCardle  
School of Kinesiology and Health Science  
York University  
Toronto, Ontario, Canada  
and  
School of Human Kinetics  
University of Ottawa  
Ottawa, Ontario, Canada

Meghan H. McDonough  
Faculty of Kinesiology  
University of Calgary  
Calgary, Alberta, Canada
Desmond McEwan  
School of Kinesiology  
University of British Columbia  
Vancouver, British Columbia, Canada

Cameron N. McIntosh  
Independent Scholar  
Ottawa, Ontario, Canada

Zella E. Moore  
Department of Psychology  
Manhattan College  
Riverdale, New York

Alexandre J. S. Morin  
Substantive-Methodological Synergy Research Laboratory  
Department of Psychology  
Concordia University  
Montréal, Quebec, Canada

Amber D. Mosewich  
Faculty of Kinesiology, Sport, and Recreation  
University of Alberta  
Edmonton, Alberta, Canada

Robert W. Motl  
Department of Physical Therapy  
University of Alabama at Birmingham  
Birmingham, Alabama

Nicholas D. Myers  
Department of Kinesiology  
Michigan State University  
East Lansing, Michigan

Hyuk Oh  
Department of Kinesiology  
University of Maryland  
College Park, Maryland

Kurtis Pankow  
Kinesiology, Sport, and Recreation  
University of Alberta  
Edmonton, Alberta, Canada

Caterina Pesce  
Department of Movement, Human and Health Sciences  
University of Rome “Foro Italico”  
Rome, Italy

Trent A. Petrie  
Department of Psychology  
University of North Texas  
Denton, Texas

Eva Pila  
School of Kinesiology  
Western University  
London, Ontario, Canada

Markus Raab  
Department of Performance Psychology  
German Sport University Cologne  
Cologne, Germany  
and  
School of Applied Sciences  
London South Bank University  
London, United Kingdom

Amanda L. Rebar  
School of Health, Medical and Applied Sciences  
Central Queensland University  
Rockhampton, Australia

Ian Renshaw  
School of Exercise and Nutrition Sciences  
Queensland University of Technology  
Queensland, Australia

Ryan E. Rhodes  
School of Exercise Science, Physical and Health Education  
University of Victoria  
Victoria, British Columbia, Canada

Véronique Richard  
National Circus School  
Montréal, Quebec, Canada

Claudio Robazza  
Department of Medicine and Aging Sciences  
University Gabriele d’Annunzio of Chieti-Pescara  
Chieti, Italy

Mark A. Runco  
American Institute for Behavioral Research and Technology  
Vista, California

Catherine M. Sabiston  
Kinesiology and Physical Education  
University of Toronto  
Toronto, Ontario, Canada

Brian M. Sandroff  
Department of Physical Therapy  
University of Alabama at Birmingham  
Birmingham, Alabama
Philippe Sarrazin  
Laboratoire SENS  
Univ. Grenoble Alpes  
Grenoble, France

Thomas Schack  
Center of Excellence “Cognitive Interaction Technology”  
Faculty of Psychology and Sportscience  
Bielefeld University  
Bielefeld, Germany

Benjamin Schellenberg  
School of Psychology  
University of Ottawa  
Ottawa, Ontario, Canada

Geoffrey Schweizer  
Department of Sport and Exercise Psychology  
Heidelberg University  
Heidelberg, Germany

Semyon M. Slobounov  
Department of Kinesiology  
Pennsylvania State University  
University Park, Pennsylvania

Alan L. Smith  
Department of Kinesiology  
Michigan State University  
East Lansing, Michigan

Brett Smith  
Durham University  
Durham, United Kingdom

Erin Snapp  
Division of Kinesiology, Sport Studies and Health  
Wayne State University  
Detroit, Michigan

Andrew C. Sparkes  
Carnegie School of Sport  
Leeds Beckett University  
Leeds, United Kingdom

Martyn Standage  
Centre for Motivation and Health Behaviour Change  
Department for Health  
University of Bath  
Bath, United Kingdom

Rafael A.B. Tedesqui  
Department of Sports Studies  
Bishop's University  
Sherbrooke, Québec, Canada

Gershon Tenenbaum  
B. Ivcher School of Psychology  
The Interdisciplinary Center  
Herzlia, Israel

Jennifer Turnnidge  
School of Kinesiology and Health Studies  
Queen's University  
Kingston, Ontario, Canada

Sarah Ullrich-French  
Department of Educational Leadership, Sport Studies and Educational/Counseling Psychology  
Washington State University  
Pullman, Washington

Robert J. Vallerand  
Laboratoire de Recherche sur le Comportement Social  
Département de Psychologie  
Université du Québec à Montréal  
Montréal, Canada

Jérémie Verner-Filion  
Département des sciences de l'éducation  
Université du Québec en Outaouais  
Québec, Canada

Bas Verplanken  
Department of Psychology  
University of Bath  
Bath, United Kingdom

Claudia Voelcker-Rehage  
Institute of Human Movement, Science and Health  
Chemnitz University of Technology  
Chemnitz, Germany

Alan J. Walker  
Department of Exercise Science  
Lebanon Valley College  
Annville, Pennsylvania

Alexa Walter  
Department of Kinesiology  
Pennsylvania State University  
University Park, Pennsylvania

Jack C. Watson II  
Department of Sport Sciences  
West Virginia University  
Morgantown, West Virginia

Colin M. Wierts  
School of Kinesiology  
University of British Columbia  
Vancouver, British Columbia, Canada
Diane M. Wiese-Bjornstal
School of Kinesiology
University of Minnesota, Twin Cities
Minneapolis, Minnesota

Kristin N. Wood
School of Kinesiology
University of Minnesota, Twin Cities
Minneapolis, Minnesota

Tim Woodman
School of Sport, Health, and Exercise Sciences
Bangor University
Bangor, United Kingdom

Gabriele Wulf
Department of Kinesiology and Nutrition Sciences
University of Nevada, Las Vegas
Las Vegas, Nevada

Bradley W. Young
School of Human Kinetics
University of Ottawa
Ottawa, Ontario, Canada

Karen Zentgraf
Department for Movement Science and Training in Sports
Goethe University Frankfurt
Frankfurt, Germany
Reviewer List

**Duarte Araújo**  
Faculty of Human Kinetics  
Universidade de Lisboa  
Cruz Quebrada Dafundo, Portugal

**Kelly Arbour-Nicitopoulos**  
Faculty of Kinesiology and Physical Education  
University of Toronto  
Toronto, Ontario, Canada

**Shawn M. Arent**  
Department of Exercise Science  
University of South Carolina  
Columbia, South Carolina

**Calum A. Arthur**  
Faculty of Health Sciences and Sport  
University of Stirling  
Stirling, Scotland

**John Bartholomew**  
Department of Kinesiology and Health Education  
University of Texas at Austin  
Austin, Texas

**Garrett F. Beatty**  
Department of Applied Physiology and Kinesiology  
University of Florida  
Gainesville, Florida

**Mark R. Beauchamp**  
School of Kinesiology  
University of British Columbia  
Vancouver, British Columbia, Canada

**Maurizio Bertollo**  
Department of Medicine and Aging Sciences  
University Gabriele d'Annunzio of Chieti-Pescara  
Chieti, Italy  
and  
Department of Science and Technology  
University of Suffolk  
Ipswich, United Kingdom

**Stuart Biddle**  
Institute for Resilient Regions  
University of Southern Queensland  
Toowoomba, Australia

**Ian D. Boardley**  
School of Sport, Exercise and Rehabilitation Sciences  
University of Birmingham  
Birmingham, United Kingdom

**Eric Brymer**  
School of Sport  
Leeds Beckett University  
Leeds, United Kingdom

**Aïna Chalabaev**  
Laboratoire SENS  
Univ. Grenoble Alpes  
Grenoble, France

**Derwin K.C. Chan**  
School of Public Health  
Li Ka Shing Faculty of Medicine  
University of Hong Kong  
Hong Kong, China

**Yu-Kai Chang**  
National Taiwan Normal University  
Taipei, Taiwan (Republic of China)

**Mark Conner**  
School of Psychology  
University of Leeds  
Leeds, United Kingdom

**Jean Côté**  
School of Kinesiology and Health Studies  
Queen’s University  
Kingston, Ontario, Canada

**Thomas Curran**  
Department for Health  
University of Bath  
Bath, United Kingdom
Michael Doppelmayr  
Department of Health  
Johannes Gutenberg University  
Mainz, Germany

David W. Eccles  
College of Education  
Florida State University  
Tallahassee, Florida

Robert C. Eklund  
College of Education  
Florida State University  
Tallahassee, Florida

Robert Elbin  
Department of Health, Human Performance and Recreation  
University of Arkansas  
Fayetteville, Arkansas

Alon Eliakim  
Meir Medical Center  
Sakler School of Medicine  
Tel-Aviv University  
Tel-Aviv, Israel

K. Anders Ericsson  
Department of Psychology  
Florida State University  
Tallahassee, Florida

Jennifer L. Etnier  
Department of Kinesiology  
University of North Carolina at Greensboro  
Greensboro, North Carolina

Bradley J. Fawver  
College of Health  
University of Utah  
Salt Lake City, Utah

Deborah L. Feltz  
Department of Kinesiology  
Michigan State University  
East Lansing, Michigan

Edson Filho  
School of Psychology  
University of Central Lancashire  
Preston, United Kingdom

Jonathan Folstein  
Department of Psychology  
Florida State University  
Tallahassee, Florida

Patrick Gaudreau  
School of Psychology  
University of Ottawa  
Ottawa, Ontario, Canada

Diane L. Gill  
Department of Kinesiology  
University of North Carolina at Greensboro  
Greensboro, North Carolina

Rob Gray  
Human Systems Engineering  
Arizona State University  
Mesa, Arizona

Daniel F. Gucciardi  
School of Physiotherapy and Exercise Science  
Curtin University  
Perth, Australia

Henrik Gustafsson  
Department of Educational Studies  
Karlstads Universitet  
Karlstad, Sweden

Martin Hagger  
School of Psychology  
Curtin University  
Perth Australia  
and  
Faculty of Sport and Health Sciences  
University of Jyväskylä  
Jyväskylä, Finland

Bradley Hartfield  
Department of Kinesiology  
University of Maryland  
College Park, Maryland

Andrew P. Hill  
School of Sport  
York St. John University  
York, United Kingdom

Nicholas L. Holt  
Kinesiology, Sport, and Recreation  
University of Alberta  
Edmonton, Alberta, Canada

Robert Hristovski  
Faculty of Physical Education, Sport and Health  
Saints Cyril and Methodius University  
Skopje, North Macedonia
Jasmin Hutchinson
Department of Exercise Science and Sport Studies
Springfield College
Springfield, Massachusetts

Ben Jackson
School of Human Sciences
The University of Western Australia
Perth, Australia

Christopher M. Janelle
Department of Applied Physiology and Kinesiology
University of Florida
Gainesville, Florida

Kyle J. Jaquess
Department of Kinesiology
University of Maryland
College Park, Maryland

Diane E. Mack
Department of Kinesiology
Brock University
St. Catharines, Ontario, Canada

Jeffrey Martin
Division of Kinesiology, Sport Studies and Health
Wayne State University
Detroit, Michigan

Paul McCarthy
School of Health and Life Sciences
Glasgow Caledonian University
Glasgow, United Kingdom

Meghan H. McDonough
Faculty of Kinesiology
University of Calgary
Calgary, Alberta, Canada

Cameron N. McIntosh
Independent Scholar
Ottawa, Ontario, Canada

Daniel Memmert
Institute of Training and Computer Science in Sport
German Sport University Cologne
Cologne, Germany

Amber D. Mosewich
Faculty of Kinesiology, Sport, and Recreation
University of Alberta
Edmonton, Alberta, Canada

Nicholas D. Myers
Department of Kinesiology
Michigan State University
East Lansing, Michigan

Hyuk Oh
Department of Kinesiology
University of Maryland
College Park, Maryland

Caterina Pesce
Department of Movement, Human and Health Sciences
University of Rome “Foro Italico”
Rome, Italy

Leslie Podlog
Department of Health, Kinesiology, and Recreation
University of Utah
Salt Lake City, Utah

Amanda L. Rebar
School of Health, Medical and Applied Sciences
Central Queensland University
Rockhampton, Australia

Ryan E. Rhodes
School of Exercise Science, Physical and Health Education
University of Victoria
Victoria, British Columbia, Canada

Catherine M. Sabiston
Kinesiology and Physical Education
University of Toronto
Toronto, Ontario, Canada

Thomas Schack
Center of Excellence “Cognitive Interaction Technology”
Faculty of Psychology and Sportscience
Bielefeld University
Bielefeld, Germany

Brett Smith
Durham University
Durham, United Kingdom

Martyn Standage
Centre for Motivation and Health Behaviour Change
Department for Health
University of Bath
Bath, United Kingdom

Cheryl P. Stuntz
Department of Psychology
St. Lawrence University
Canton, New York
\textbf{Reviewer List}

\textit{Robert J. Vallerand}
Laboratoire de Recherche sur le Comportement Social
Département de Psychologie
Université du Québec à Montréal
Montréal, Canada

\textit{Jérémie Verner-Filion}
Département des sciences de l’éducation
Université du Québec en Outaouais Québec, Canada

\textit{Tim Woodman}
School of Sport, Health, and Exercise Sciences
Bangor University
Bangor, United Kingdom

\textit{Patrick R. Young}
Department of Psychology
Wingate University
Wingate, North Carolina

\textit{Chun-Qing Zhang}
Department of Sport and Physical Education
Hong Kong Baptist University
Hong Kong, China
Part 1

Motivation
Theory Overview

The theory of planned behavior (TPB) (Ajzen 1985, 1988, 1991) is a widely used theory of the proximal determinants of behavior. By the end of 2017, the key Ajzen (1991) paper on the TPB had received over 54k citations on Google Scholar. It has been widely applied in relation to a range of behaviors including predicting physical activity and sport participation as evidenced by several meta-analyses in this area (Downs & Hausenblas, 2005; Hagger, Chatzisarantis, & Biddle, 2002; Hausenblas, Carron, & Mack, 1997). The theory should be seen within the context of an evolving set of related theories that includes the earlier theory of reasoned action (TRA) (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) and the later Reasoned Action Approach (RAA) (Fishbein & Ajzen, 2010). These theories each emphasize the deliberative processing of available information in the formation of intentions. This chapter, first, provides a description of these three related theories and the correlational and experimental evidence supporting them, second, critiques aspects of the theory, and third, reviews potential additions to the theories and moderators of relationships among theory components.

Theory of Reasoned Action and Planned Behavior

The TRA, TPB, and RAA all suggest that the key proximal determinant of action/behavior is one’s behavioral intention to engage in that behavior. Behavioral intention represents a person’s motivation in the sense of her or his conscious plan, decision, or self-instruction to exert effort to perform the target behavior. These are usually tapped by items assessing likelihood of intending to perform the behavior (Ajzen, 2002a; Conner & Sparks, 2015). In the TRA, behavioral intentions are determined by attitudes toward the behavior and subjective norms. Attitudes are the overall evaluations of the behavior by the individual. Fishbein and Ajzen (1975, p. 6) define an attitude as “a learned disposition to respond in a consistently favorable or unfavorable manner with respect to a given object.” Attitudes are usually tapped using semantic differential measures (Ajzen, 2002a; Conner & Sparks, 2015). Subjective norms consist of a person’s beliefs about whether important others think he/she should engage in the behavior. Subjective norms are assumed to assess the “social pressures” (from salient referents) that individuals feel to perform or not perform a particular behavior. Subjective norm is usually tapped items assessing the approval of important others for the individual performing the behavior (Ajzen, 2002a; Conner & Sparks, 2015).

The TPB incorporates a third predictor of intentions, perceived behavioral control (PBC) (Ajzen, 1991), which is the individual’s perception of the extent of control over performance of the behavior. PBC is seen as a continuum with easily executed behaviors at one end (e.g., walking up stairs) and behavioral goals demanding resources, opportunities, and specialized skills (e.g., becoming a world-class athlete) at the other end. PBC is usually tapped by items assessing perceived confidence that you can engage in the behavior and that performing the behavior is up to you (Ajzen, 2002a; Conner & Sparks, 2015). The TPB also suggests that PBC may more directly influence behavior. In earlier versions of the TPB, this was conceptualized as PBC being a direct predictor of behavior alongside intentions. In later versions this has been conceptualized as PBC moderating the impact of intentions on behavior (see Fishbein & Ajzen, 2010). Figure 1.1 provides a diagram representation of the TPB. The relative importance of attitude, subjective norm, and PBC in the prediction of intention is expected to vary across behaviors, populations, and situations.

Just as intentions are held to have determinants, so the attitude, subjective norm, and PBC components are also
held to have their own determinants (Figure 1.1). The determinants are sometimes referred to as indirect measures, although both are considered to be measures of one and the same construct (Ajzen & Fishbein, 1980). Attitude is a function of salient behavioral beliefs, each of which represents the perceived likelihood that performance of the behavior will lead to a particular outcome or is associated with a particular attribute. Following expectancy-value conceptualizations (Peak, 1955), expectancy-value products are composed of the multiplicative combination of beliefs about the likelihood of each behavioral outcome and the evaluation of that outcome. These expectancy-value products are then summed over the various salient outcomes. The problem with multiplicative combination of beliefs and evaluations with interval level data has been noted by a number of authors (e.g., French & Hankins, 2003), although no completely satisfactory solution has been found. Ajzen (2002a) has recommended the use of optimal rescaling techniques in order to avoid this problem, but this practice is currently not common in published research and has attracted criticism (French & Hankins, 2003).

Fishbein (1993) suggests that this is not a model of a process but is a computational representation aimed to capture the output of a process that occurs automatically as a function of learning (see Ajzen & Fishbein, 2000). This part of the model, the relationship between attitudes and beliefs, is based on Fishbein's (1967) summative model of attitudes. This is a model of individually salient outcomes, although most applications employ measures tapping a set of outcomes that are modally salient.

Subjective norm is a function of normative beliefs, which represent perceptions of specific significant others' (referents) preferences about whether one should or should not engage in a behavior. Significant others are individuals or groups whose opinions about a person's behavior in this domain are important to him or her. This is quantified as the subjective likelihood that specific salient groups or individuals (referents) think the person should or should not perform the behavior, multiplied by the person's motivation to comply with that referent's expectation. Motivation to comply is the extent to which the person wishes to comply with the specific wishes of the referent on this issue. These products are then summed across salient referents. A number of applications of the TPB do not weight normative beliefs by motivation to comply or weight them by measures of group identification (Terry & Hogg, 1996).

PBC is determined by beliefs concerning whether one has access to the necessary resources and opportunities to perform the behavior successfully, weighted by the perceived power of each factor (Ajzen, 1988, 1991). The perceptions of factors likely to facilitate or inhibit the performance of the behavior are referred to as control beliefs. These factors include both internal (information, personal deficiencies, skills, abilities, emotions) and external (opportunities, dependence on others, physical constraints) control factors. People who perceive they have access to the necessary resources and perceive that there are opportunities (or lack of obstacles) to perform the behavior are likely to perceive a high degree of PBC (Ajzen, 1991). Ajzen (1991) has suggested that each control factor is weighted by its perceived power to facilitate or inhibit performance of the behavior. The model quantifies these control beliefs by multiplying the frequency or likelihood of occurrence of the facilitating/inhibiting factor by the subjective perception of the power of the factor to facilitate or inhibit the performance of the behavior. While it is normally expected that PBC is positively associated with intentions and behavior, this relationship may be reversed for risk behaviors (i.e., lower PBC is associated with stronger intentions and greater performance of the behavior) (Cooke, Dahdah, & Norman, 2016).

**Reasoned Action Approach**

The RAA retains the same overall structure as the TPB but suggests that each of attitude (relabeled attitudes...