

# POSITIVE HUMAN FUNCTIONING FROM A MULTIDIMENSIONAL PERSPECTIVE

*Promoting Stress Adaptation*



VOLUME 1

*Psychology of Emotions,  
Motivations and Actions*

A. RUI GOMES  
RUI RESENDE  
ALBERTO ALBUQUERQUE  
EDITORS

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**PSYCHOLOGY OF EMOTIONS, MOTIVATIONS AND ACTIONS**

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**A. RUI GOMES**

**RUI RESENDE**

**AND**

**ALBERTO ALBUQUERQUE**

**EDITORS**



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Additional color graphics may be available in the e-book version of this book.

### **Library of Congress Cataloging-in-Publication Data**

ISBN: ; 9: /3/84; 6: /; : 2/5 (eBook)

ISSN: 2332-5542

*Published by Nova Science Publishers, Inc. † New York*

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*This book is dedicated to...*

...all my family, especially my parents who were persistent in giving me the best life and educational opportunities, and to my wife Ana and daughters Joana and Tiago who give me the best opportunities to be a happy person every day. And I would like to recognize the six years of working together with our research group, “Adaptation, Performance and Human Development”, because the insights and constant encouragement of all the members were critical for the success of this book.

A. Rui Gomes

... to Inês and Artur for the meaning they bring to our existence (mine and of Ana, my wife) and the hope they carry to the future.

Rui Resende

... to my parents who, if they were alive, would love to know that this book was finished. This book happened because of them; I owe almost everything to them.

To my wife, Suzana, who has always been the great supporter of my personal and professional life.

To my children (Marta, Tiago, Diana, and João) and grandchildren (Zé, Clara, and Francisco), who are the most important people in my life. The success of this book is also their own success.

I also thank my companions on this journey, Rui Gomes and Rui Resende.

Alberto Albuquerque





# CONTENTS

<b>Editor's Note</b>	<b>ix</b>
<b>Preface</b>	<b>xi</b>
<b>Opening Chapter</b>	<b>1</b>
<b>Chapter 1</b> Towards a Fully Functioning Humanity <i>Mihaly Csikszentmihalyi</i>	<b>3</b>
<b>Work Contexts</b>	<b>13</b>
<b>Chapter 2</b> Occupational Stress and Work: From Theory to Interventions <i>Philip Dewe and Cary L. Cooper</i>	<b>15</b>
<b>Chapter 3</b> Burnout and Engagement at Work: From Theory to Intervention <i>Michael P. Leiter and Kelly A. Frame</i>	<b>37</b>
<b>Chapter 4</b> How to Promote Positive Emotions and Adaptation at Work <i>Astrid M. Richardsen, Lars Glasø and Ronald J. Burke</i>	<b>57</b>
<b>Sport Contexts</b>	<b>83</b>
<b>Chapter 5</b> Stress, Emotions and Athletes' Positive Adaptation to Sport: Contributions from a Transactional Perspective <i>Martin J. Turner and Marc Jones</i>	<b>85</b>
<b>Chapter 6</b> Burnout in Sport: From Theory to Intervention <i>Thomas D. Raedeke, Alan L. Smith, Göran Kenttä,                          Constantino Arce and Cristina de Francisco</i>	<b>113</b>
<b>Chapter 7</b> Emotional Experiences and Coping in Sport: How to Promote Positive Adaptational Outcomes in Sport <i>Katherine A. Tamminen, Peter R. E. Crocker                          and Carolyn E. McEwen</i>	<b>143</b>
<b>Adaptation Contexts</b>	<b>163</b>
<b>Chapter 8</b> Positive Human Functioning in Stress Situations: An Interactive Proposal <i>A. Rui Gomes</i>	<b>165</b>

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<b>About the Editors</b>	<b>195</b>
<b>About the Contributors</b>	<b>197</b>
<b>Index</b>	<b>207</b>

## **EDITOR'S NOTE**

### **THE BOOK**

“Positive human functioning from a multidimensional perspective” tries to understand factors involved in the human adaptation to stressful situations, the human adoption of healthy life styles, and the human training for high performance. Considering these main goals, the book is edited in three volumes related to human adaptation, human development, and human training.

For all volumes, the opening chapter is written by Mihaly Csikszentmihalyi. This chapter addresses the fascinating topic titled “Towards a fully functioning humanity”, serving as an introduction to how positive psychology can contribute to the flourishing of humanity in the future.

### **VOLUME 1**

Positive human functioning from a multidimensional perspective: Promoting stress adaptation

The main goal of this volume is to analyze human adaptation to life situations. Using examples of work and sport contexts, topics related to stress, emotions, and burnout, both from a theoretical and an empirical point of view, are discussed. How to promote positive adaptation to adaptational contexts is addressed by authors Cary Cooper, Michael P. Leiter, Ronald J. Burke, Marc Jones, Thomas Raedeke, Peter Crocker, and many others.

### **VOLUME 2**

Positive human functioning from a multidimensional perspective: Promoting healthy life styles

The main goal of this volume is to analyze human development through the life cycle. Using examples of life skills and exercise practice, topics related to how to organize life skills programs for children, youth, and adults and how to assume healthy life styles by doing regular exercise are discussed. How to promote positive development across the life cycle is

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addressed by authors Martin I. Jones, Daniel Gould, Tanya Forneris, James E. Maddux, Kimberley L. Gammage, Ali A. Weinstein, and many others.

## **VOLUME 3**

Positive human functioning from a multidimensional perspective: Promoting high performance

The main goal of this volume is to analyze human training to achievement contexts. Using examples of developmental and high performance contexts, topics related to talent development, athletes and teams' training for high performance situations, and leaders' training to maximum professional efficacy (including mainly the cases of sports coaches) are discussed. How to coach individuals, teams, and leaders to high performance is addressed by authors Jean Côté, Eduardo Salas, Robert S. Weinberg, Wade Gilbert, Gordon Bloom, Harold Riemer, and many others.

This is the journey through the complexity of human functioning being assumed in this book; it is a broad and deep perspective of the factors involved in human adaptation, human development, and human training. In sum, this book addresses the fundamental challenge referred to by Kennon M. Sheldon in the Preface of this book, namely, how to make things go right in our lives.

## PREFACE

It is with great pleasure that I write this preface, in part because it takes me back to some “golden days” of my professional youth. In 1999 I was fortunate enough to be invited to the Akumal conference, which was held on the Yucatan peninsula, in Mexico. This was the conference which formally hatched the positive psychology movement. It was an exciting time, as eminent researchers (such as Martin Seligman, Mihaly Csikszentmihalyi, and Alice Isen) and “promising young scholars” (such as me, Barbara Fredrickson, and Sonja Lyubomirsky) debated how to proceed. We considered topics such as whether “positive psychology” was the right name for the movement; whether positive psychology was just about people, or whether it should also about relationships, organizations, and institutions; whether positive psychology should have a manifesto, and if so, what should be in it; whether positive psychology was just humanism in a different guise; whether our group itself was too elitist, as we enjoyed our luxury accommodations in a tropical paradise; and much more. Although in subsequent years there were two further conferences held at Akumal, none matched the first for intensity and novelty.

Today, 15 years later, I am very pleased that the positive psychology movement has continued to expand and develop. The robustness of the movement is a testament to people’s desire for, and even hunger for, positive psychological perspectives. Twentieth century psychology focused overmuch on human problems, difficulties, errors, and pathologies. It produced manuals for fixing what can go wrong in life, which of course is a depressingly long list. But what about a 21<sup>st</sup> century “owner’s manual” for making things go right in life, for doing what we want? The owner’s manuals of our cars do not mainly tell us how to fix problems; instead, they tell us how to operate the car, to do what we want (e.g., how to use the variable-intermittent windshield wiper function, how to check and change the oil). Typically, there is a much shorter problem-solving section at the end of such manuals.

Similarly, the owner’s manual for operating human beings could potentially be much longer, or at least more important, than the manual for fixing human beings. This might occur in part because when humans function well, many so-called “problems” evaporate or fix themselves of their own accord. Human misery is in part a function of maladaptive forms of interpreting, construing, and coping with ongoing experience. One enduring premise of positive psychology is that the right sort of “mental tune-up” can sometimes get people to simply replace their maladaptive ways of experiencing, with much more adaptive and proactive ways of experiencing. As one example, a fairly short training in mindfulness meditation can turn a person’s experience from feelings of stress, anxiety, and dread of being

overwhelmed and unmasked, to a recognition that these feelings are possibilities only -- possibilities that one now has the tools to avoid or sidestep. This new and more adaptive way of encountering stress, rather quickly learned, can sometimes quickly transform an anxious, flustered approach to a much more confident approach to the tasks at hand. Maybe it is better to let problems resolve naturally, rather than try to apply a band-aid to each problem -- better to find a single global solution, rather than a host of patches and stop-gaps.

In short, positive psychology is dedicated to balancing the psychological research equation by focusing on human strengths, virtues, health, and happiness in addition to human weaknesses, failings, sicknesses, and unhappiness. And it is working: a recent search found more than 3500 "hits" in PsychInfo for the topic "positive psychology," a number which does not even include the thousands of articles and chapters that address positive psychology themes and topics (happiness, strengths, virtues, skills, capacities) without explicitly referencing the term positive psychology. In addition, dozens of books have been published on positive psychology, including my own "Optimal Human Being: An integrated multilevel perspective" (Sheldon, 2004), "Self-determination theory in the clinic: Motivating mental and physical health" (Sheldon, Williams, & Joiner, 2001) and "Designing positive psychology: Taking stock and moving forward" (Sheldon, Kashdan, & Steger, 2011).

This brings me to the special pleasure of introducing this book with three volumes. As a researcher I have long been interested in what promotes optimal functioning and the highest degree of happiness in individuals. I have mostly taken a personality perspective on this question, focusing on peoples' goals, values, identities, traits, motives, psychological needs, narratives, and more. Typical research studies of mine attempt to predict change in some positive individual outcome (i.e., well-being, happiness, resilience, need-satisfaction) from prior changes in some positive personality characteristic (i.e. goal-attainment, value change, identity development) or from some other positive experience (i.e., a mindfulness intervention, a goal planning procedure, a positive activity induction). Interested readers might see my book "Optimal human being: A integrated multi-level perspective" (Sheldon, 2004) for a summary of conclusions regarding what personality, social, and cultural characteristics are most conducive to promoting human health and wellness.

The authors in the current book, *Positive human functioning from a multidimensional perspective*, have addressed the very same types of question, while taking a somewhat different route. The book has three volumes, each of which addresses optimal human functioning in a particular way. In the first section the book addresses positive human adaptation, in an abstract sense. This includes personality processes but also a variety of other processes, from biological to social. However, there is a twist: the authors focus on adaptation primarily in work and sport contexts, two very important achievement settings for human beings. Thus, there is very tangible, applied angle taken throughout the book, meaning that the book is not just a set of airy abstractions. The second volume of the book addresses positive development, as derived from the positive processes discussed in the first section. Especially at work and in sport, how can people be helped to develop a healthy style of life, one which maximizes their achievement potential and also maximizes their physical and psychological health? The third volume is the most concrete of all, addressing specific training techniques to human performance: how to teach and train individuals, teams, and leaders to best adapt to the present, and best develop in the future. Thus the book leads the reader through the entire process of understanding the nature of positive adaptation, understanding the ways in which positive development occurs given this nature, and

understanding the specific ways that this information may be applied for the benefit of real individuals. I commend the editors for settling on this framework, and expect that the book will be popular with a wide spectrum of audiences ranging from theorists to researchers to clinicians to practitioners to teachers, coaches, and even parents. In fact, I can't wait to get my own copy!

Kennon M. Sheldon  
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# **OPENING CHAPTER**



*Chapter 1*

## **TOWARDS A FULLY FUNCTIONING HUMANITY**

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### **ABSTRACT**

The chapter reviews briefly the emergence of Positive Psychology in the context of the evolution of psychology as a science, and it suggests how it might contribute to the flourishing of humanity in the future. Focusing on the recently evolved human capacities for self-reflective consciousness and agency, we are now in the position of playing a crucial role in the survival and further evolution of the human species. Whatever decisions we shall collectively take should be informed by a scientific knowledge of the human capacity for creative, constructive – as well as destructive – action, and of the ways these positive capacities can best be applied to shaping a desirable future.

### **ON THE DEFINITION OF A FUNCTIONING HUMAN**

The study of human beings conducted by human beings has adopted the conceptual models and the methods that have served the physical and biological sciences so well in the last few centuries. The followers of the sociology of Auguste Comte or the psychology of B.F. Skinner considered people as organisms that followed behavior patterns established by external stimuli. Men and women had little or no choice over their destiny. The discoveries of Darwin and later those of genetics added even more weight to a reductionist determinism in the study of humanity. The quip attributed to an eminent life scientist: “Molecules are real. All the rest is sociology” is symptomatic of how too many “hard” scientists dismiss explanations of what men and women do that are not based on the most elementary units of organic matter.

Yet, just as biology cannot be reduced to chemistry without losing sight of what makes life different from inorganic processes, so we cannot reduce human life to the simplest organic processes without losing sight of the unique properties of human existence. These properties must include the development of the frontal and pre-frontal cortices – a result of slow biological evolution – which in turn made possible the emergence of *consciousness*,

which is an attribute not yet found outside our species. In many ways it is more accurate to say about humans that: “Consciousness is real. All the rest is biology”.

Of course, trying to define consciousness is a controversial matter – not surprisingly, since it is such a late gift of evolution. In this context I want to focus on a minimalist definition; by consciousness I mean the information in the mind that is available to our attention. So it includes early genetic instructions like hunger, fear, and sexual attraction. But it also includes our earliest individual memories, the instructions of our parents and our tribe. And it includes learned responses to beauty, to values like generosity or courage. And above all else, consciousness includes the ability to choose from the information it contains a course of action that would not be always predictable even if we had perfect knowledge of the individual’s genetic instructions or previous experience (Csikszentmihalyi, 1993).

For a long time, however, the social sciences, and psychology in particular, have tried to ignore the inconvenience that consciousness introduced into the familiar mechanistic conception of the universe that Galileo, Newton, and Leibnitz had so elegantly developed to account for the movements of planets and of molecules. And of course the social sciences have discovered many interesting and important things about the human species. For instance, that most of the time we act as if we were simple robots programmed for self-aggrandizement, for getting the most pleasure available, for using violence and deceit to reach predictable, selfish goals.

Impressed by its own sagacity, the social sciences have then drawn the conclusion that people, like billiard balls, were simply pushed one way or another by outside forces. Of course the forces acting on humans were much more varied and conflicting than those typically propelling billiard balls; but the general idea was by and large the same. So to make matters simple, many of our colleagues concluded that consciousness and its derivatives were merely epiphenomena they could safely dismiss. Ignoring the last few tens of thousands of years of evolution, they found the keys to human action in the behavior of rats and monkeys, while forgetting the wise words attributed to Albert Einstein; “Make things as simple as possible, but not simpler.”

The first psychological laboratory, founded by Wilhelm Wundt in Leipzig about a hundred years ago, tried to make the measurement of human behavior as simple as possible concentrating on neurological and muscular response-times; his followers on both sides of the Atlantic followed in his footsteps – arguably reducing the study humankind to something that is too simple to reveal the range of human possibilities.

Of course, there have been many eminent psychologists, ranging from Carl Jung to Abraham Maslow and Karl Rogers, who felt that in pursuing simple rigor psychology had made a bad bargain. Nevertheless, almost all the young people entering graduate programs in psychology were taught that the future of the discipline required that they become more and more reductionist, until they reached the blessed state of technicians dressed in white gowns, who work surrounded by microscopes, computers, and the latest paraphernalia of high technology.

Yet as time passed it became increasingly obvious that there were many questions the 20<sup>th</sup> century paradigm of psychology had a hard time resolving. For instance Roy Baumeister, a noted social psychologist, asked himself how it was possible for so many new ideas, lifestyles, technologies to appear in human history if everything we did was a product of the past. Clearly the intervention of human consciousness must be a game changer, creating novelties that arose from imagination as well as from the past. He and Marty Seligman (a

staunch behaviorist in his youth) developed the notion of *prospexion* to account for that part of human action that was determined not only by the past, but also by future goals anticipated in the mind (Seligman, Railton, Baumeister, & Sripada, 2013). Behaviors such as generosity, filial piety, patriotism, altruism might be built on inheritance and learning, but become actual influences on conduct when they are named, defined, and taught.

Baumeister (2008) went so far as resuscitating the long discredited concept of *free will*, arguing that the belief in conscious choice was by itself a recently evolved causal factor in human action. If you believed you had a choice, this belief allowed you to choose between the various options – overriding, if necessary, both the genetic and the social instructions programmed in consciousness.

In fact, ignoring this new development in the functioning of the brain – the ability to make choices among alternatives – leads to untenable results. If people have no other options than to simply act out the instructions contained in their genes or their environment, it would make no sense to hold them responsible for their actions. Instead of relatively autonomous agents, people would be seen as complex robots. Then a well-functioning human being would be one that went through life satisfying his biologically programmed needs as much as possible, while interfering as little as possible with the needs of other human beings. In many ways this would not be such a bad definition, yet it seems to fall far short of the image of man that we are used to. Not to mention that the logic of this simple definition allows individuals who are convinced of their genetic superiority to dominate and exploit the rest of the population in order to satisfy their own requirements for wellbeing. Recent history has shown what can happen when the megalomania of a Hitler or a Stalin becomes translated into public policy.

The view of what a well-functioning person is like is quite different in the emerging perspective of positive psychology. Human beings are seen as a work in progress; tied by strong bonds to the past, but acquiring new powers due to both biological and to cultural evolution. Of course there is no guarantee that this process will have a positive outcome. It will depend in large part on our own decisions whether the future will be flourishing or dismal. But the first step towards a better future is to realize that we can choose, and that it is our choices that will make the difference. So a fully functioning human being, according to this perspective, is a person who accepts his or her unique position in history, with all the bio-social facticity attached, and accepts the responsibility to work for a future in synchrony with the arc of evolutionary movement towards higher levels of complexity. In other words, a fully functioning human being accepts responsibility for piloting spaceship earth.

## **MY PERSONAL JOURNEY TO POSITIVE PSYCHOLOGY**

The considerations described in the previous sections, important as they are, were not the main reasons that I became dissatisfied with the psychology of the past century. The reasons were much less rational and more experiential. As a child during World War II, I saw some people act with honesty and dignity, others with craven selfishness. I knew that my father, who was the Hungarian consul in the Italian city of Fiume (now Rijeka, in Croatia), was issuing visas and passports to fugitives trying to escape from the Fascist authorities, even though we knew that his superiors in the State Department might fire or even have him

imprisoned for flaunting the official policy. He did not ask for payment for this service, in fact he sometime had to lend his own money to people who had not the means to make an escape. By the time I was ten years old, the entire social, cultural, economic, and political system collapsed; relatives (including my older brother Károly) were killed; people lost their jobs, property – and all too often, their reason for living. It seemed to me that some of the adults I knew made choices that kept them sane, efficient, and helpful to others – while others made choices that left them bitter and useless to themselves and everyone else.

In the midst of all the shooting, the fires, the fear and the hunger I made an unexpected discovery. An older cousin taught me how to play chess. After learning the basic moves, I found that the game had such a power over my mind that I hardly noticed a building collapse across the street, or a burst of machine-gun bullets miss the window by inches. I learned something that 30 years later I found out philosophers from Heraclitus to Plato and down to Nietzsche and Sartre had remarked on for many centuries: play provides an alternative reality where we can feel in harmony with the world, and feel more free than at any time in “real” life.

Later on, I had the same experience while mountain climbing, or playing soccer and basketball. All these “games” were able to limit reality to a playing field and a set of rules for action, providing a small world sheltered from the larger world; a small world where one could act with clear purpose and full engagement. A few years later I discovered that the same experience of full concentration could be had from activities where you made up your own purpose, determined your own goals: for instance painting, writing short stories, or even when reading a good novel that forced you to imagine how it would be to be the character in the story, in a place and a time different from the one your body happened to be in.

By the time I was 20 years old, I had decided to become a psychologist, to understand better why some people could live relatively happy lives, while others were just marking time in misery. This was not easy to do in post-war Europe, especially for someone like me who had dropped out of high school at age 14 in order to work and survive. After a long wait for a visa, I entered the USA at age 22, with \$1.25 in my pocket, found a nighttime job as a cashier in a large Chicago hotel, while during the day I worked on a BA in psychology at the University of Illinois, where I was admitted after taking an equivalency exam.

But the psychology being taught in the mid-50s was not what I had expected after having read the works of Carl Jung in Europe. It was a discipline that prided itself on its objectivity, seeing human behavior as no different from the behavior of the great apes, or even rats. It indulged in what the social philosopher Hannah Arendt has called the “debunking perspective” of the social sciences emerging out of the older natural sciences, eager to demonstrate their own scientific rigor. Many times over the next ten years I was tempted to leave the study of psychology, and do something less fanciful: like become a forest ranger, or a fiction writer (I had been able to place two short autobiographical stories that I wrote for an English language class in the elite literary magazine *The New Yorker*). For better or for worse, with the help of some wise and understanding teachers at the University of Chicago where I transferred, I went on to finish my doctorate – after which I was hired to teach sociology and anthropology (two subjects that interested me, but had taken just one course in each during my academic career) at a small but vibrant liberal arts college. I taught there for five years, then was invited back to the faculty of the prestigious University of Chicago, where I slowly developed the concept of *flow* and the systems model of creativity, in an effort to move psychology in a direction that was closer to what I thought it should be.

## THE PUBLIC STORY OF THE FIRST TEN YEARS OF POSITIVE PSYCHOLOGY

In the winter of 1998, my wife and I booked a week's vacation at a resort on the Kona Coast of Hawaii. By a rare coincidence, the second day of our stay Martin Seligman and I almost literally ran into each other at a nearby beach. We had met before at psychology meetings, but never had a chance to really talk. Now it turned out that he and his family were staying at the same resort we were. So for the next few days, from breakfast to after dinner, we exchanged ideas about our profession. This was the year before Marty became President of the APA, and he was aware that a once-in-a-lifetime opportunity to leave a legacy was about to open for him.

Even though our training and life experiences were quite different, we soon felt that our views of where psychology should be moving were very similar. We both felt that the reductionist model of man that psychologists, in their desire to appear hard-nosed scientists, had been following for the past few generations, was missing the point. After they discovered behind the veil of Victorian pieties that human beings were obeying instincts inherited from ancestors indistinguishable from apes, psychologists were left with the conclusion that human behavior was *nothing but* animal behavior. The accomplishments that we are so proud of, like the use of language that resulted in the works of Homer, Dante, Shakespeare, or Goethe, are simple side-effects of an evolutionary pattern based on complex thought processes that were selected because they gave our species an advantage in the struggle for survival. Similarly love, gratitude, courage, spirituality, are not things we cherish for their own sake, but because they help us endure, survive, and reproduce.

Neither Marty nor I were comfortable with this. Somewhere the baby had been thrown out with the bathwater. The development of the pre-frontal cortex in humans had been a game-changer; people have developed internal representations of goals they hope for, things they desire and love – and these have become real and important in determining their behavior. It was time, we felt, for psychologists to take seriously the whole spectrum of human functioning, not just the part of it we share with our simian ancestry.

Of course, by then many people outside of psychology and some within it had come to the same conclusion. The teachings of Maslow and Rogers, which spawned Humanistic Psychology, are eloquent examples. However, we felt that the critique of scientism usually falls into the opposite extreme, ignoring the insights of science while rejecting its misapplied reductionism. So where did that leave us? We decided to try formulating our views in a way that our colleagues in the profession would feel compelling. But the effects of whatever we wrote would take years to bring fruit, and by then Marty's presidency would long be over. How could we implement what we thought was an important enrichment of the science of psychology within a shorter span of time?

It was at this point that my PhD thesis and subsequent publications on creativity began to suggest some choices – even though, at the time, I was not consciously aware of it (Csikszentmihalyi, 1996; Getzels & Csikszentmihalyi, 1976). What I knew – based on Thomas Kuhn's work with the rise of new paradigms in science, and Pierre Bourdieu's analysis of cultural change – was that it is easier to influence the future course of a science by appealing to the curiosity and energy of younger scientists than by trying to influence the already established practitioners, who had much to lose and little to gain from a new

perspective that could replace the one in which they had prospered. So instead of appealing to our peers, we decided to invite a small group of young psychologists for a week of meetings, to discuss what these ideas might contribute to the future of psychology.

A few key decisions we made at this point turned out to be inspired. Marty, because of his recent campaigning for the APA Presidency, knew most of the leading psychologists in the country. We decided to write to 50 of these individuals, asking them to nominate a former student less than 30 years of age, who might be sympathetic to our ideas, *and who had a chance to become chairpersons of their psychology departments before they reached the age of 50*. We would then write to the nominated individuals, ask them for their c.v.'s, and invite about twenty to spend a week in a sleepy fishing village Marty knew in Quintana Roo – on the “Mayan Riviera” of Mexico.

This way, we thought, we might kick-start the formation of a *field*. As to the *domain*, -- or the specific content and rules that distinguish one discipline from others -- we thought that there were enough books and articles at the margins of the psychological literature to get things started; the newly constituted field would then take over with the contribution of their own work. If the domain and field turned out to have credibility, it would then attract *persons* to the new sub-domain, which after long deliberations we came to call *Positive Psychology* (Seligman & Csikszentmihalyi, 2000).

The week we spent in the village of Akumal with the twenty young colleagues went by very rapidly, but left an enduring mark on the profession. Of these participants, several (e.g. Barbara Fredrikson, Jonathan Haidt, Corey Keyes, Sonja Ljubomirski, Ken Sheldon) have written their own book (or books) on various aspects of positive psychology. Practically all of them are still very actively shaping the emerging sub-domain. And they are not alone: the Third World Congress of positive psychology took place in Los Angeles in 2013, with the attendance of about 1500 psychologists from all over the world. It was an unqualified success both in scientific and humane terms. Earlier world congresses have taken place in the United Kingdom and in Philadelphia; European Congresses were held in Stresa, (Italy); Opatija, near Rijeka, the town I was born in, (Croatia); Copenhagen (Denmark), and in the summer of 2012 in Moscow, Russia.

This astonishing growth was made possible in large part because so many young people felt that psychology needed to expand in new directions. Thus our ideas resonated with the spirit of the times. But they needed the exertions of the emerging sub-field to become actualized. Here Marty played an indispensable role. For instance, he was able to secure the financial support of the Templeton Foundation to establish a series of prizes for young scholars in positive psychology, including a yearly \$100,000 first prize, which was (and still is) one of the largest monetary recognition for breakthrough research done in psychology. The symbolic significance of such support sent the message that the new sub-domain was not a fleeting affair, but was taken seriously by the world at large. The Meyerson Foundation then helped funding the *VIA Dictionary of Strengths* (intended as the Positive Psychology counterpart to the DSM IV dictionary of psychopathology), spearheaded by Chris Petersen (2006).

Marty also started the highly successful and influential MA program in positive psychology at the University of Pennsylvania, which has inspired similar programs in Denmark, Italy, South Korea, and elsewhere. In 2006 the first PhD program in Positive Psychology was started at the Claremont Graduate University in California. The *Journal of*



*Positive Psychology* also started publishing a few years ago, and is gaining momentum and reputation.

## WHAT POSITIVE PSYCHOLOGY CONTRIBUTES TO THE UNDERSTANDING OF HUMAN BEHAVIOR

At this point in its development, Positive Psychology claims to have three main goals. The first is to understand and learn how to improve the momentary affective states of individuals. The second is to study more permanent traits (or “strengths”) that some individuals possess, and learn how those who lack them can acquire them. The third addresses the question of how institutions, from families to nation states, might help develop such strengths.

Peterson and Seligman’s classification of strengths and virtues (2004) has become one of the main planks of positive psychology. Based on an extensive review of what “virtues” are universal to mankind, it consists of 24 “strengths” grouped in 6 higher-order virtues. Anyone can measure his or her strengths against established norms, and establish their *signature strengths*.

This attempt to single out some traits and calling them *strengths* has caused many lifted eyebrows in the psychological community. Positive psychology has been accused of introducing value judgments in what should be an objective science. But of course psychology, like medicine or even biology, has never been value-free. It has always tried to avoid disease and considered pathology a condition to be changed. What positive psychology has done is simply develop the other end of the continuum from pathology to flourishing, by identifying various kinds of traits and conditions that lead to good physical and mental health. Psychiatrists and psychologists have been turning the pages of the thick tomes of the *Diagnostic and Statistical Manual*, or DSM, which lists the symptoms and possible cures of all that can go awry in the human mind. What Peterson and Seligman did was to try to develop the opposite, which they subtitled *A Dictionary of the Sanities*.

## THE FUTURE OF POSITIVE PSYCHOLOGY

The amount of research, publications, meetings and organizations that have been inspired by positive psychology has indeed been incredibly widespread. A simple linear projection into the future would suggest that this “movement” will have hundreds of thousand members in just a few years, and that its influence will permeate institutions around the world, from schools to families, from businesses to governments. History, however, rarely proceeds in a linear direction. Even the history of science is not quite linear: physicists at the beginning of the 20<sup>th</sup> century thought that their science had exhausted all the mysteries of matter; then in the first quarter of the century the advent of subatomic physics expanded the horizons of the science in unimaginable directions; and by the end of the century physicists had acquired the mantle of the magi of knowledge. Yet only a few decades later new horizons beacon: microbiology, astrophysics, nanotechnologies – to name just a few domains on the ascendant – promise to answer the mysteries of creation.

So whether positive psychology will keep its momentum going is by no means certain. One thing to remember that the higher and swifter a new idea raises, the faster and farther it can fall. The danger with positive psychology is that if too many people expect quick and easy solutions to their lives, and these don't happen, then they turn against the idea and ruin its reputation. Yet many self-styled "life coaches" believe that positive psychology provides a panacea they can promote to clients who are unhappy with their lives. It is important to remember that positive psychology is not a miracle cure. It is simply a perspective that can help scientists advance knowledge in ways that in the fullness of time will allow individuals to improve the quality of their lives. It will not be an easy journey, or a quick one. But it is absolutely necessary that we start on it.

As for what direction Positive Psychology is likely to go in the foreseeable future I must confess ignorance. The problem is that no future course of events is really "foreseeable", especially when it depends on human action. The variables are too many, and too complexly interrelated. I think speculating about what will happen in the future is a worthless exercise.

I do, however, have very strong opinions about what Positive Psychology *should* be trying to accomplish. In fact, my ambitions in that respect are rather extravagant. It seems to me that three main tasks will determine whether humankind will prosper in the future, or cease to exist. I don't know if we will have the vision, and the resolution, to take on these tasks and bring them to a positive resolution. But we have come to a point in the evolution of the species where we can, and we must, take control of our own lives. If we do not, or if we make the wrong choices, we will have only ourselves to blame for our demise.

The first task is to decide *Who We Want To Be*. Each human group that has survived in the past had an idea of what a person should be like, and tried – never with complete success – to educate, train, inspire and force people to come close to that ideal. Cultures changed rather slowly in the past, adjusting their notion of desirable personhood over generations as technologies, political and economic realities changed. The changes that cultures have undergone in the past two generations are more rapid and more radical than they had ever been. On the other hand, the image of what constitutes a good person has not caught up with the new realities. Yet human genetics and biotechnology have now reached the point that we can imagine ordering "designer babies" from illustrated catalogs, with genes tweaked to facilitate learning, or domineering, or nurturing – as well, of course, as hair and eye color. What choices will we make? And who will make them? In a few years, these questions will have to be faced. And Positive Psychology should be in a position to help inform the public discourse on these issues, pointing out the long-term as well as the short-term results of various actions to the self and to the community.

The second task we will have to decide is, *Where do We Want To Live?* On a planet that increasingly resembles a Garden of Eden, or a planet that has become an orbiting garbage can? Which of these outcomes will come true, depends exclusively on us. And again, Positive Psychology should help the other social sciences involved in policies of sustainability and conservation, to show people how their lifestyle habits, and the policies of their elected officials, can create a better world for our grandchildren to live in.

Finally, the last question is, *What Shall We Do?* The cultural changes of the past century have affected every aspect of our lives: What kind of families our children are born into, what education they receive, what opportunities to express themselves they have, what jobs are open for them... and so on and on, until the ever prolonged period of late life, where people feel increasingly useless and abandoned...

In many parts of the world, the normal development of teenagers, and even children, is interrupted and twisted forever by narcotics dealers, diamond smugglers, or sweatshops. In Africa alone, the number of children who are given weapons and taught to kill is estimated at a minimum of 100,000. In the richer and more stable countries of the world, millions of young people, deprived of a context of development and with nothing to do, become prey of illusory chemical solutions. Similarly, untold millions of adults are left without a job, without a role in society. Those fortunate enough to find employment often work at jobs that were not designed to improve the life of workers, but to generate the maximum profit to wealthy investors.

Positive psychology will deserve its place among the great achievements of mankind to the extent that it takes seriously its responsibility to contribute the accumulating knowledge it produces to the solution of these three challenges facing us: To decide who we will be, where will we live, and what will we do.

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## **WORK CONTEXTS**



*Chapter 2*

## **OCCUPATIONAL STRESS AND WORK: FROM THEORY TO INTERVENTIONS**

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### **ABSTRACT**

Exploring work stress from theory to intervention captures the very nature of what we do as researchers and practitioners. However, it is not as simple as just moving from theory to practice because at the very heart of that transition is the moral responsibility we have to those whose working lives we investigate. So, to discharge this responsibility requires us to understand more about that transitional process. It requires understanding how stress theory, and more specifically the concept of stress has evolved, how and in what way it reflects how individuals experience work, what social, economic and political pressures have moulded it and what should now become the organizing concept around which research and practice should coalesce. Even if we have answers to all those questions, we are still left grappling with the difference between creating knowledge and applying it, understanding how knowledge transfers, who is responsible for transferring it, what we mean by evidence based practice, who determines what the evidence is and what is it we are trying to achieve and how is, what we are trying to achieve, evaluated.

To explore the transition from theory to interventions, this chapter opens by pointing to a number of forces which may help explain how work stress theory, and particularly the concept of stress, has evolved, and traces its evolution from traditional views of work stress through to discrete emotions, well-being and happiness. In doing so, it touches on some of the forces that have influenced this evolution, commenting on the economic and social turbulence created by the failures of management and business, resulting in an economic downturn that is now captured by the all too familiar phrases like ‘credit crunch,’ ‘double dip depression’ and ‘quantitative easing’ that still seem to dominate the economic outlook. Yet the stark economic and social reality expressed in the individual, organizational and social cost of stress heightens the need to understand not just the costs of stress but the opportunities work provides for individuals to flourish. So to understand the transition it is also important to explore the rise and importance of the positive psychology movement, the significance and global attention being given to well-being

and a resurgence of interest in happiness. Armed with this understanding, we turn next to exploring what this means for interventions and practice. We review traditional intervention practices, explore the evidence assessing workplace interventions, the issues and debate that accompanies the idea of evidence based practice and then, through the lens of how knowledge transfers, explore new innovative practices that capture the challenges and demands of our time, their relevance to contemporary theory and their fit with how work is experienced and expressed through policy.

## THEORY TO INTERVENTION: THE TRANSITIONAL CONTEXT

### Economic Turbulence and the Costs of Work Stress

We live in turbulent times. Just how turbulent can be argued. What is clear though is that ‘whenever there is change or the prospect of change, there is turbulence in our lives’ (Weinberg & Cooper 2012, p. 3) requiring us to manage new experiences and challenges. This turbulence generated by economic policy and strategies that at one time celebrated and robustly endorsed the primacy of ‘market forces’ as exemplars for growth and prosperity, but which now recognizes such forces as responsible for wreaking havoc across society, leaving an economic crisis where no one was untouched and all left with a sense of anger, distrust, anxiety, and disgust. What began as an economic crisis soon became a human crisis the costs of which continue to be felt. The brunt of much of this turbulence was to be felt in the workplace.

Statistics from the Health and Safety Executive (HSE) (2012) suggest that stress, anxiety, and depression have been one of the most commonly reported types of work-related illness with 428,000 cases reported in 2011/2012 or 40% of all reported cases for work-related illness. The main work activities attributed by respondents as causing their work-related stress, or making it worse, were work pressure, lack of managerial support, and workplace violence and bullying. Similarly, HSE (2012) data collected from a network of General Practitioners showed that when those patients diagnosed with work-related stress were asked to identify the precipitating event, they identified three principle ones: factors intrinsic to the job, including work pressures and lack of managerial support, changes at work, including reduction in staff and changes to work responsibility, and interpersonal relationships at work including bullying and difficulties with managers (2012). Work-related stress caused workers to lose 10.4 million working days in 2011/2012 in the UK, with those suffering from this condition taking on average 24 days off work. This, the HSE report, ‘is one of the highest average days lost’ of all the recognised health complaints covered by their survey’ (HSE 2012, p. 6).

After a ‘decade of little change’, data from *The Skills Employment Survey 2012* (Felstead, Gallie, Green, & Inanc, 2013) showed ‘work intensity’ is also on the rise. The upward movement in work intensity is reflected in ‘record highs’ of respondents who reported that they worked under the pressure of tight deadlines and at high speed (Felstead et al., 2013, p. 1). When identifying the ‘drivers of renewed work intensification’, Felstead and his colleagues suggested the key role played by technology and its ‘effort biased’ impact intensifying job roles, and increased competitiveness resulting from ‘the severity of the recession and rising levels of unemployment’ (2013, p. 5). Policy-makers, these authors



suggest, should not only develop interventions that relieve stress but also ‘champion’ the redesign of work where excessive workloads are accompanied by low job control.

Economic uncertainty accompanied by periods of recession also ‘accentuates anxieties among those still in work’ (Gallie, Felstead, Green, & Inanc, 2013 p. 2). Gallie and colleagues assessed these anxieties through measures that captured fear of employment loss, of unfair treatment and loss of job status. Using comparative data from their earlier surveys, the results paint a somewhat bleak picture. Fear of employment loss was higher in 2012 than in the previous 26 years of surveying. Similarly, the last decade has also seen a rise in anxiety across all three types of unfair treatment (arbitrary dismissal, discrimination, victimization by management). Although there was no comparative data, job status anxiety was highest in terms of pay reductions followed by less say in the job, changes making it more difficult to use skills and abilities and a less interesting job (Gallie et al., 2013, p. 3). Pointing to the recession and its aftermath as important drivers of these anxieties, Gallie and his colleagues (2013) signalled two types of changes - reductions in the number of those employed in the organization and the reorganization of work - as particularly important. Adopting policies that ‘enhance employee involvement at times of change’ does, as these authors suggest, point to the types of strategies that may help to overcome such anxieties (Gallie et al., 2013, p. 6).

Economic turbulence, with its accompanying policies of austerity, casts a shadow over all of society bringing with it unrest, uncertainty and emotional turmoil, so it is not surprising that organizations have also had to consider the costs of the stress and anxieties caused by their strategic response to this global financial crisis. The UK Chartered Institute of Personnel and Development (CIPD) in their annual survey report on absence management (CIPD, 2012) reported that 40% of organizations surveyed reported that work-related stress had increased over the past year. Acknowledging that identifying the causes of stress at work is the first step to addressing the issue, the CIPD (2012) report identified the most common causes of stress as workloads/volume of work, management style, relationships at work and at home, and organizational change and restructuring. Work stress was reported by all those surveyed as being in the top five most common causes of short-term absence. For those organizations that monitored the cost of employee absence (40%) the average cost of absence per employee was £600, although there was considerable variation in the cost due to the different costs organizations include in their calculations. Just as concerning, the survey reports that the ‘threat of redundancies and concerns over job security lead to an increase in the proportion of employees who struggle into work unwell’ (p. 46). Just under a third (31%) of organizations reported an increase in the number of employees coming to work ill (presenteeism); an increase of 8% over 2010. As noted (CIPD, 2012) an increase in presenteeism in one year is associated with an increase in stress related absence. More positively, as the survey reports 51% of organizations have introduced changes to their approach to absence management in the last year and are, more likely, where they have noticed an increase in employees ‘coming to work ill’ (sickness presenteeism) increased their focus on employee well-being.

Findings from the CBI/Pfizer 2010 survey of absence and workplace health (CBI/Pfizer, 2011) puts the median total cost for each absent employee at £760 but also points to the variation in absence costs suggesting that ‘this figure ‘needs to be seen as a broad indicator of costs’, but indicates the ‘potential cost savings’ that could be achieved if absence levels were reduced (p. 4). Reinforcing this point the report indicated that in 2010 taking direct cost of absence alone the cost to the United Kingdom economy would amount to more than £17 billion, making it crucial for organizations to conduct ‘return to work interviews to identify

what lies behind an employee's absence and considering what other support it may be appropriate to help employees' (p. 17). When exploring the drivers of absenteeism issues like 'personal problems' were reported by only 17% of respondents and were not, when compared to issues like non-work illness and post-operative recovery, regarded as a leading cause of absence.

What was clear from the survey, however, was the role played by non-work and work stress, anxiety and depression as a driver of long term absence 'making a strong case for active interventions by employers' (p. 21). As in the CIPD survey, the CBI/Pfizer (2011) survey also noted the problem of presenteeism and its adverse impact on both the individual and their productivity, noting as well that poor employee engagement and poor morale also limited individual effectiveness, making it clear how important it was for organizations to develop 'good management practices and the value of investing in effective well-being programmes' (p. 17). In setting their priorities for the future, 74% of those organizations sampled considered improving well-being to be a priority over the next year, 89% operate stress management policies and in addition to directly tackling employee health employers recognised the importance that employee engagement and recognition had on improving well-being. Put simply, the CBI/Pfizer (2011) survey concludes that good management goes hand in hand with good health.

## **THEORIES OF MANAGEMENT AND THE IMPERATIVE OF WELL-BEING**

The economic downturn has cast its shadow across all society with the evidence pointing to "the rapidity of health consequences of financial crises" (Stuckler, Basu, Suhrcke, Coutts, & McKee 2011, p. 125), and commentators arguing that its "terrible impact on well-being [has] disproportionately affected workers" (Anderson, Jane-Llopis, & Cooper, 2011, p. 353). But because no part of society has been left untouched it may "be nigh impossible" to completely capture the full emotional and financial burden that has had to be carried (Anderson et al., 2011, p. 353). Yet what distinguishes this economic downturn from those of the past is "the extent of international cooperation" to combat the crisis (Weinburg & Cooper 2012, p. 13). This collaboration has not simply limited itself to the coordination of economic policy in terms of interest rates and financial bailouts, but stimulated a more comprehensive and internationally coordinated approach that questions whether macroeconomic indicators like GDP actually capture the quality of people's lives (OECD, 2012) or whether its design and purpose can be 'relied upon to inform policy debate on all issues' (Commission of the European Communities 2009, p.2). This questioning has prompted a search for new models that recognize that measuring economic growth has its value but that more is needed (World Economic Forum, 2012). At the heart of these arguments is that measures of progress and societal development must embrace and 'paint a comprehensive picture' of 'those aspects that shape people's lives and well-being' (OECD 2012, p. 2). It is recognizing the value that lies in health and well-being as a measure of progress (World Economic Forum, 2012).

The idea that 'well-being matters' is not new but the economic turmoil and financial crisis has placed it at the heart of future policy. Yet the importance of well-being and its role as an indicator as to what matters in people's lives is just one of a number of developments that have accompanied the new millennium and that will, undoubtedly, influence not just the

nature and structure of work but how work stress interventions are designed and implemented. In order to understand the transition from theory to intervention it is important to recognize these developments, and to consider their influence in shaping intervention strategies. These developments include the state of management theory and its impact on practice, the growth and significance of the positive psychology movement, the good work agenda and centrality of well-being and the shift in focus from stress to emotions. Each will be discussed in turn.

## **Management Theory and Its Practice**

At a time when management was in crisis, economies were in turmoil and corporate scandals were front page news it was Ghoshal who, in his 2005 seminal paper, raised the issue of whether management theories are destroying good management practices because, captured by the prevailing economic ideology and a methodological narrowness, they trumpet values that reduced and legitimised organizational behaviour to those that are rational, instrumental, self directed and emotionally detached (Hambrick, 2005). Even more telling, as Ghoshal suggests, is that such behaviours negatively influence management practices because they become separated from the social context of the organization itself and freed those engaging in them from “any sense of moral responsibility” (2005, p. 76). Moreover, as such theories “triumph in the market place” (Kanter, 2005, p. 93) they gain in currency setting in motion “processes that tend to ensure they become self fulfilling” (Pfeffer, 2005, p. 96). The outcome is clear, organizations by endorsing such behaviours believe that it is the way to manage, that they are managing in accordance with some management theory (Dewe & Cooper, 2012), continue to “adapt their behaviour to conform” (Ghoshal, 2005, p. 77) and offer a “gloomy and pessimistic vision” of individuals and organizations (Ghoshal, 2005). Isn’t time argues Ghoshal (2005) to put the context back at the heart of managerial thinking and practice, broaden our view of organizational behaviour and build something richer than the reductionist view of what organizations are about.

It is important, as Kanter suggests, asking why these reductionist economic-driven ideas seemed to have “more reach, resonance and staying power” (2005, p. 94), “when counter voices have long existed” (p. 93). Perhaps, as Kanter goes on to argue, it was because the search was on for ‘a force for change’ for new ideas and new ways to make organizations more competitive, that capital became more important than human resources and that “Economic theories are neat . People are messy” (2005, p. 94). Others adding their views to this list suggest, for example, that unlike economics other social science disciplines have been reluctant to offer a more prescriptive approach or become embroiled in policy or strategic issues, where ideology inevitably plays a role in what theories become more acceptable (see Pfeffer, 2005, p. 98), especially when competing ideologies seem absent (Kanter, 2005), perhaps limiting, even contaminating the way knowledge is acquired (Klimoski, 2005) and despite being aware of the role and significance of individual choice, its theoretical relevance and its impact on organizational outcomes managerial qualities were still allowed to assume the role of “self-interest maximizers” (Hambrick, 2005, p. 106).

Understanding why these pessimistic, narrowing and limiting ideas about organizational behaviour held sway for so long and did so much damage is important. Yet it is equally important to accept that they are just “too simple and leave too much [of the complexity] out”

(Kanter, 2005, p. 94). What we now need is to aim for a theoretical context that allows debate about what is “good and not good” for practice and “for that matter, what is good for people” (Pfeffer, 2005, p. 98). Why don’t we begin argues Ghoshal, by accepting the more “sensible proposition” that organizations prosper when, amongst other things, they pay attention to the interests of employees (2005, p. 81). It is not the elegantly modelling of this proposition that matters, Ghoshal goes on to suggest, but that it is one step towards creating a “richer environment” for ‘knowledge creation’ (p. 82). Moreover, this would allow us to think more broadly about what constitutes good theory, the complexity of human behaviour, the importance of context, the issues of choice, meaning and process, the role of synthesis and application, and the importance of the positive as distinct from emphasising the negative (Ghoshal, 2005).

What would this do? It would provide a richer, broader and more integrated approach to developing and building theories than those we have been subscribing to over the past three decades (Ghoshal, 2005). While, as most admit, it will take time to disentangle from what has been a dominant although ultimately a somewhat destructive force, there is evidence that changes are already happening reflecting a more inclusive approach to theory and practice. Ghoshal points not only to the rise of the positive psychology movement with its emphasis on individual strengths, and growth, offering a more balanced approach to individual health and well-being but to ‘new endeavours’ in economics that focus on values and organizations embracing among others well-being and ethical principles. Kanter (2005) talks about bringing back into the core those ideas that have been pushed into the periphery, so that research and practice can once more grow around the relationship between profitability and the good treatment of employees. Pfeffer (2005) like other commentators takes up Ghoshal’s idea about education and knowledge transfer and argues that both need to be as much concerned with values as they have been with theory and research. While this summary may not capture the richness, depth and clarity that Ghosal and others bring to this discussion, it does alert us to the presence of the need for a more inclusive theory about individual choice and organizational behaviour allowing us to better understand the context and the process by which stress theory makes the transition from theory into interventional practices.

## **The Positive Psychology Movement**

It was not the dramatics of the economic turmoil that invaded and captured the beginnings of the new millennium that gave voice to the positive psychology movement, although it is not difficult to find traces of that turmoil in arguments that helped to establish its presence as a force for change. Rather there is every reason to believe that positive psychology grew out of a long simmering belief that, for good reason, psychology’s orientation had become too focused on human weakness; an orientation that told only half the story and now need balancing with the other half that focused on individual growth, human potential and what can be (Dewe & Cooper, 2012; Linley & Joseph, 2004; Seligman & Csikszentmihalyi, 2000; Snyder & Lopez, 2007). It was the seminal work of Seligman and Csikszentmihalyi who captured this belief, articulated its significance and expressed its presence in what they described as psychology’s “two neglected missions- making normal people stronger and more productive and making high human potential actual” (2000, p. 8). The seeds were sown; positive psychology soon evolved into a movement, and the “study of

positive aspects of human experience in their own right” was legitimated (Czikszentmihalyi 2003, p. 114). Positive psychology – the scientific study of ordinary human strengths and virtues (Sheldon & King, 2001, p. 216), the renewal of “attention on the sources of psychological wellness” (Lyubomirsky & Abbe, 2003, p. 132) and those conditions and processes that contribute to the “building of positive qualities” and individual flourishing” (Gable & Haidt, 2005, p. 104) has, without doubt, guided and challenged researchers to apply their science to the understanding of optimal human functioning.

Yet despite the fact that positive psychology is, through its considerable achievements, in every sense a movement (King 2003), it has, at times, had to withstand intense debate as to what it really is about and just how new it is (Dewe & Cooper, 2012). Positive psychology has, as reviewers admit “always been with us” (Lindley, Joseph, Harrington, & Wood, 2006, p. 4) but, building on what has gone on before, its significance lies in the fact that it has grown out of a demand to investigate “the other side of the coin” (Gable & Haidt, 2005, p. 105), and to act as an “exciting counterweight” to psychologies more traditional focus (Simonton & Baumeister, 2005, p. 99). In short, it offers what Seligman and his colleagues describe as a “more complete and balanced scientific understanding of the human experience” (Seligman, Steen, Park, & Petersen 2005, p. 410). Part of this more complete understanding rests in using positive psychology to develop ‘positive institutions’ (Seligman & Csikszentmihalyi, 2000).

Ultimately this means “that positive psychology needs to develop effective interventions” (Gable & Haidt, 2005, p. 108). While these interventions may, by necessity, need initially to have an element of problem fixing, positive psychology offers the opportunity to go beyond this ‘fix mentality’ to interventions that embrace more of a “build and grow mentality” in this way capturing the spirit of a movement whose principal focus is on individual flourishing (Garcea, Harrington, & Linley, 2010, p. 324). Whatever tone positive psychology sets when establishing its agenda for new and innovative approaches to organizational interventions it is necessary, as Warren (2010) cautions, for them to go beyond just simply increasing our understanding of positivity to offering real and material improvements that allow individuals to maximize their potential.

## **The Good Work Agenda and the Importance of Well-Being**

Whether the positive psychology movement has been influential in drawing attention to ‘what makes good work’ and the need for a ‘good work’ agenda remains a moot point (Dewe & Cooper, 2012). The values espoused by the “good work” agenda are more likely to be found when the ‘growing and compelling evidence’ is examined that links good work to health and well-being (Bevan 2010, p. 3). At the heart of the good work agenda is the belief “if we care about the capabilities of individuals to choose a life that they value then we should care about job quality” (Coats & Lekhi, 2008, p. 6). It is for these reasons why an ‘agenda for good work’ is attracting the attention of public policy analysts as much as the ‘strong evidence’ that shows that job quality has a major impact on health and well-being (Coats & Lekhi, 2008). Having a job that is meaningful, and a labour market that offers ‘good work’, should, despite the economic turmoil (Coats 2009), recognize the importance of job quality and help to explain the move in recent years to progressively broaden health and safety issues so that such policies have a wider remit that covers psychological health issues “as well as

physical health as well as well-being more generally” (Constable, Coats, Bevan, & Mahdon 2009, p. 11). When it comes to good work the objective is to consider the design of work roles and the management of those roles in a way where the work becomes a source of “well-being, personal growth, fulfilment, autonomy and meaning” (Constable et al., 2009 p. 6). The significance of the good work agenda lies simply in three powerful arguments; that labour markets are about people and so cannot be seen “as a market like any other”, that individuals have the right to a life that they value and ‘work has to be seen as a fully human activity, which engages all of our skills, talents, capabilities and emotions (Coats & Lekhi 2008, p. 13). The implications for work design and well being interventions are clear: work is good for us but it has to be good work (Waddell & Burton 2006).

The positive psychology movement and the good work agenda are not alone in pointing to the significant role of work in people’s lives, and the need to view work as a place where people flourish. The carnage of the economic turmoil of recent years has stimulated a search for new models that measure economic progress (World Economic Forum, 2012); models that have as their focus those factors that are important for individual well-being and which offer a better understanding of social progress. The idea is that these models would aim to include ‘more inclusive indicators,’ that ‘do what people really want them to do, namely measure progress in delivering social, economic and environmental goals in a sustainable manner’ and which ultimately will be judged by their ability to express the well-being of society (Commission of the European Communities, 2009, p. 10). Agencies across the world have taken up this challenge. For almost 10 years the measuring of well-being has been a priority of the OECD through its ‘better life initiative’ (OECD, 2012). Similarly the European Union has approached the health and well-being agenda through its ‘GDP and Beyond: Measuring progress in a changing world’ (Commission of the European Communities, 2009), as has the World Economic Forum with its ‘Health and Well-Being’ agenda built around widening the concept of well-being and developing what they describe as metrics that matter (World Economic Forum: Global Agenda: ‘Health and well being’, 2013) and its ‘Well-Being for Global Success’ report (World Economic Forum, 2012). All this reinforces the need for metrics that not just demonstrate the impact of interventions but which also mobilises the commitment of significant organizational decision-makers (World Economic Forum: The Workplace Wellness Alliance, 2013).

In the transition from theory to interventions a number of powerful forces signal not just the need for change but question whether established practices reflect those principles against which interventions should be evaluated. It is clear that the dominance of economic theory driven by a desire to maximize returns has wrought havoc across all of society and placed an intolerable burden on those at work. Emerging from this crisis of economics is an economics of social progression where the human starkness and reductionism of the first is replaced by the inclusiveness of the second where what matters is the quality of life and the measurement of those factors that sustain it. Under the umbrella of the second researchers and practitioners can now engage in a much richer debate as to what constitutes good practice, the importance of good work, the centrality of well-being, the need for balancing the positive with the negative, and the desire to develop metrics that allow the design of jobs to better express opportunities that allows individuals to flourish. It is these ideas that set the scene and provide the context against which interventions should now be judged and policy evaluated. One last issue needs to be factored in to this context of change and that is how the concept of stress has

evolved to meet these challenges and how best it reflects the experience of work and the organizing concept for the future.

## The Evolving Nature of Stress

It seems that there is almost a requirement when discussing the term stress to immediately point to the ambiguities that now surround the word. The term, even though comfortably embedded in our everyday conversation that provides it with its sense of legitimacy, there still remains the issue of what exactly do we mean when we talk about stress and whether it is this elasticity of meaning that has enabled the term to survive. On closer investigation (Cooper & Dewe, 2004; Dewe & Cooper, 2012), the concern, it seems, is more with stress the ‘label’ than stress the ‘concept.’ Even so researchers and practitioners cannot avoid the responsibility about what it is they are defining and how those definitions influence both research and practice. Traditionally stress has been defined as a stimulus, a response, or the interaction between the two. These definitions provided the structural components around which researchers could begin to explore their nature, characteristics and the interactions between them. These definitions now have a historical as well as an empirical value (Dewe, O’Driscoll, & Cooper, 2010), since they give a sense of time and place helping to provide an understand of why different research questions emerged when they did, why different research approaches were adopted and how they helped to frame future research and practice. While a considerable amount of knowledge has been gained from defining stress in these ways two issues still remain: what contribution have they have made to our understanding of the stress process itself and whether, when considering the current state of our knowledge, they adequately inform, and have the power (Lazarus, 1990) to express how work is currently experienced (Dewe & Cooper, 2012; Dewe et al., 2010).

While, of course, there is a need to continue to explore the structural components of stress to ensure that they remain relevant and capture the constantly changing nature of work there is an even more pressing demand on researchers to better understand how a stressful encounter unfolds, the processes involved and the sequencing of events (Dewe & Cooper, 2012). When it comes to process driven definitions of stress, the emphasis shifts from interaction to transaction. In this way as Lazarus (1999) points out, stress does not simply reside in the person or the individual but in the transaction between the two. The power of Lazarus’s (1999) transactional theory lies in the understanding it provides of the nature of the transaction, those processes that are involved and which link the person to the environment and the manner in which the transaction unfolds. What links the individual to the environment is captured in what Lazarus (2001, p. 50) describes as “a process of appraisal”. Lazarus (1999, 2001) identifies two types of appraisal separated not by timing but by their nature. The first *primary appraisal* is concerned with the meanings the individual gives to the encounter and captures through such meanings what is believed to ‘be at stake’ in terms of harm/loss, threat, challenge or benefit. *Secondary appraisal* is where the individual evaluates what coping resources are available and is concerned with ‘what can be done about’ dealing with or managing the demanding encounter. When transitioning from stress to interventions then the power of the transactional approach lies in the emphasis it places on the meanings individuals give to events, the coping strategies initiated and the causal pathway these two

appraisal process provide for a more specific understanding of the discrete nature of the response.

Once attention shifts to thinking of appraisals as providing the causal pathway from encounter to response then, as Lazarus (1999, 2001) points out, this captures the essential role that emotions play in this pathway and that since “stress always implies emotions” (Lazarus & Cohen-Charash, 2001, p. 53) then far more can be gained by focusing on discrete emotions than on the vagaries that continuing to contaminate something called stress (Lazarus, 1999). Since it is the meaning that an individual builds around a demanding encounter that triggers and gives it its’ emotional quality, then it is emotions rather than stress that offers a more direct “theoretically rich and important” focus (Park & Folkman, 1997, p. 132). So by thinking in transactional terms leads through the causal pathway of appraisals to the idea that emotions should, like appraisals, become the defining concepts for the future. If this is the case then the implications for research and practice require greater attention being given to understanding the meanings given to encounters, as it is these meanings from which coping and emotions flow, the need to better understand not just the resources needed to cope but what is meant by effective coping, what emotions are attached to the meanings given to demanding encounters and the consequences this has for individual health and well-being and accepting that by representing stress through concepts like appraisals and emotions this better reflects what it is that individuals are actually experiencing.

## TOWARDS A STRATEGY FOR INTERVENTIONS

It is clear that there are a number of economic, social and political forces that offer new ways and new opportunities to rethink how we approach and develop stress interventions. These forces include the economics of progression, the emphasis on quality jobs and good work, the positive psychology movement, the significance of well-being and its centrality to policy and a call to consider stress in transactional terms where the focus shifts to concepts like appraisals and discrete emotions. To provide a context within which to explore the potential impact of these forces we begin by first outlining traditional frameworks for developing interventions. We then move to exploring in more detail how these forces offer new directions in the design, structure and purpose of interventions and in this way provide the agenda for the future. There is a well-established body of knowledge on stress management intervention (e.g., Hargrove, Quick, Nelson, & Quick 2011; Murphy, 1995; Murphy, Hurrell, Sauter, & Keta, 1995; Quick, Quick, Nelson, & Hurrell 1997; Quick & Tetrick, 2003), general agreement on the three levels at which interventions take place (e.g., Dewe et al., 2010), and a growing acceptance of what constitutes good management practice for dealing with work related stress (Cousins et al., 2004; Mackay, Cousins, Kelly, Lee, & McCaig 2004).

Organizational interventions are defined in terms of “planned, behavioural, theory-based actions that aim to improve employee health and well-being through changing the way work is designed, organized and managed” (Nielsen, 2013, p. 1030). The three levels of intervention include a *primary* level often described as the preventive level aimed at reducing the number of and/or intensity of stressors, a *secondary* level aimed at modifying individual reactions to stressors and a *tertiary* level that is rehabilitative in scope where the emphasis is



on treating rather than prevention and minimizing the damaging consequences of stressors (Cartwright & Cooper, 1997). Each of the three levels offers a number of ways for focusing intervention strategies. At the primary level for example this may include redesigning jobs, restructuring roles, realigning workloads, engaging in management development, increasing employee participation and enhancing aspects of control and autonomy. At the secondary level interventions may include enhancing coping skills, developing ways to modify appraisals, attitude and behavioural training and offering developmental opportunities in time management, conflict resolution and relaxation. At the tertiary level perhaps the most established intervention is the development of Employee Assistance Programmes that offer opportunities for counselling.

Most organizations offer a multi-faceted strategy by adopting a combination of approaches across all the different levels (Dewe et al., 2010). Challenges and questions still remain. These include for example the extent to which some jobs or work environments can be changed so that they have a significant impact on well-being; whether modifying coping behaviours achieves improvements in well-being if the work environment remains unchanged, whether enough attention is given to the interdependency between individuals and that a change by one must be accompanied by a change by all (Nielsen, 2013), what theory drives the intervention process and how well does it capture the work experience, and how much attention do organizations actually give to evaluating different interventions? There is also the question of whether organizations should now look to work in partnership with a range of health and well-being providers so that a more extensive framework for understanding and managing work, health and well-being issues can be developed (Sainsbury Centre for Mental Health 2007). The benefit from such a partnership approach lies in its ability to “promote a synergy between science and practice” (Thayer, Wildman, & Salas 2011, p. 32).

It is clear that policy, strategy and practice understand and emphasise the links between health, work and well-being (Black, 2008; CIPD, 2011). It is also clear that when designing stress interventions organizations understand the importance of the role of managers and supervisors, the influence of the organizational culture and climate, the need to combine stress management with stress prevention and individual level with organizational level interventions, the involvement of employees in intervention design and implementation, and the capacity to measure and diagnose stress and well-being and develop supportive risk assessment procedures (see Dewe et al., 2010). So, when set against all this activity what does the evidence say about the effectiveness of work stress interventions? While acknowledging that there is a limited amount of high quality scientific evidence there is, argue Waddell and Burton, “more evidence than originally anticipated” albeit of an indirect nature against which a case can be built ‘into a convincing answer’ that work is good for your health and well-being (2006, p. 31).

In their review of the evidence evaluating the effectiveness of workplace intervention to prevent and manage common health problems Hill and his colleagues identified a number of key findings designed to “inform future research priorities” (Hill, Lucy, Tyers, & James, 2007, p. 1). These key findings summarized in terms of four themes are each designed to aid ‘the development of evidence-based guidelines’ (p. 1). These four themes include; potential, partnership, comprehensiveness and practice. Potential embraces the idea that the work environment is an ‘effective setting’ for preventing common health problems. Partnership draws attention to the idea that improved results are associated with some level of employer-

employee partnership and communication and cooperation between different organizational and external agencies and professionals working together. Comprehensiveness covers not just the need to focus on employee health issues but their attitudes and beliefs as well. It also draws attention to the fact that interventions that combine both organizational and complementary individual factors have been shown to be more effective. When it comes to the theme of practice then there is the need to acknowledge that organizational strategies are still based more on convention than evidence and that ‘more and better quality’ evaluation programmes are required if the complexity of the relationship between work and health is to be better understood (Hill et al., 2007, pp. 1-2).

When it comes to interventions then the first question asked is: ‘what works’? While this is a natural response the answer is not quite that simple as “interventions are complex sequences of events taking place in complex social system” (Randall & Nielsen, 2012, p. 120). Trying to answer this question draws attention to the need to explore what evidence we need and the debate that surrounds evidence-based practice and why hasn’t a greater emphasis been given to evaluation. Commentators agree (Cooper, 2010; Cox, 1993) that we now have a body of knowledge about the causes of ill health at work but this has yet to be matched by our knowledge of the effectiveness of interventions despite the call for a greater emphasis being given to the “design, implementation and evaluation of interventions” (Nielson, Taris, & Cox, 2010, p. 220). Underlying these arguments is the issue of how evidence-based are our practices (Briner, 2012) and what can be done to make our practises more evidence based (Briner & Rousseau, 2011a, 2011b). Evidence based practices offer a way of linking practice and research by identifying how practice can be better informed by research findings. Briner offers four reasons that inhibit the flow of information from research to practice; practitioners have limited or no access to the ‘best available evidence’ to guide their work, research does not always ‘directly relate to practice’ making it difficult to apply, the time and effort needed to produce systematic reviews of evidence that focus on practical issues and the need to accept that all those involved in the knowledge-practice-evidence exchange have competing priorities, strategies, pressures and motives (Briner, 2012, pp. 38-39).

Despite these hurdles Briner (2012) and his colleagues (Briner & Rousseau, 2011a, 2011b; Briner, Denyer, & Rousseau, 2009) go on to identify and describe the integration of different sources of knowledge-evidence that together encompass the elements for evidence based decision making, the importance of the practitioners role and crucially the practitioners knowledge in the decision process and the need for a critical appraisal of the evidence in terms of its quality and quantity. These authors point to the crucial role in this process that systematic reviews play, the protocols that guide the systematic review and the way such reviews help to “establish what is known, and equally what is *not* known in relation to a given (practice) question” (Briner, 2012, p. 50). Briner concludes that much more can be done and better use can be made of integrating the different sources of evidence that are appropriate and available to put evidence based practice at the centre of what we do and simply implores researchers, practitioners and managers alike to think about how we can “possibly practice in an effective or ethical way without making a conscientious, explicit and judicious use of evidence” (Briner, 2012, p. 55).

Debate still surrounds evidence based practice and the richness of that debate can be found in a special edition of *Industrial and Organizational Psychology* (Briner & Rousseau, 2011a, 2011b). The debate as foreshadowed by the authors cited above raises questions about

who defines what evidence is and how we go about collecting it (Boatman & Sinar, 2011; Briner, 2012; Cronin & Klimoski, 2011) how equipped we are as an evidence based discipline (Briner & Rousseau, 2011a; 2011b), how we become more evidence based without encroaching on our creativity and diversity of approaches and the use we can make of promising alternative approaches (Cassell, 2011; Hodgkinson, 2011), how we build up our expertise, and better understand why we don't seem to make use of the evidence we have (Thayer et al., 2011) and how we can learn from other approaches within our own discipline (Catano, 2011). All the reviewers would agree that we must continue to debate the issues as "we may not be there yet" but we may be getting nearer (Briner & Rousseau, 2011b, p. 76) not forgetting that at the heart of the debate lies the goal of how we fundamental improve health and well-being at work (Nielsen et al., 2010).

The impact of intervention strategies, despite the body of knowledge that links work health and well being, are best described as modest with no guarantee that they will "effectively, systematically and substantively improve the health and well being of employees" (Nielsen et al., 2010, p. 220). This state of affairs raises the "vitally important issue" of how can the effectiveness of intervention strategies be improved and leads directly to the role and significance of evaluation in developing our knowledge of what works and why (Nielsen et al., 2010, p. 220). Reviews over the last 20 years make it quite clear that researchers have, of course, been concerned with the effectiveness and methodological adequacy of stress intervention initiatives (Murta, Sanderson, & Oldenburg, 2007). Progress has been noted but researchers continue to push for more attention to be given to identifying those interventional factors that seem to be most effective, the characteristics of those who would benefit most and more generally establishing the determinants of effectiveness (Murta et al., 2007). Other issues that demand attention include exploring and identifying those processes that affect interventional outcomes, whether interventions target the right factors, whether the assumptions that underlie the design and delivery of interventions add to our understanding of outcomes (Nielsen et al., 2010), how the degree of fit between the intervention, the employee and the environment influence outcomes (Randall & Nielsen, 2012), how an understanding of the social dynamics and role identities influence outcomes (Nielsen, 2013) and how policy and practice developments aids the development and effectiveness of interventions (Leka, Jain, Zwetsloot, & Cox, 2010).

These issues reflect the debate that the surrounds the question of what to evaluate and how to go about it. It is clear that as much attention should now be given to evaluation as has been given to the identification of risk factors. At the same time researchers recognize and acknowledge the challenge that they face. Recognising the complexity of organizational contexts there is the issue of how compatible evaluate frameworks and protocols are with 'organizational realities' (Cox, Karanika, Griffiths, & Houdmont, 2007). In terms of these organizational realities then what sort of evidence are we looking for and do we need to think again about what we mean by evidence (Nielsen, 2013) including what organizations may consider evidence for without it implementation and evaluation is more difficult (Biron, Karanika-Murray & Cooper, 2012). If little attention is given to process and context do we also have to accept these factors as central to any evaluation recognising that without them we 'cannot explain *how* and *why* the intervention had certain effect(s) or outcome(s)' (Biron et al., 2012, p. 5). The question for many is how we maintain scientific rigour with pragmatism in our approach to both interventions and evaluation (Biron et al., 2012; Cox et al., 2007; Nielsen et al., 2010). Certainly all these authors are calling for innovative approaches that

embrace a range of different methods, using the expertise of other disciplines and reflect the reality of how and what needs to be achieved that advances our understanding.

Evaluation is a contentious issue at the best of times. The training and development literature is constantly confronted with calls for evaluative strategies that go beyond the commonly adopted strategy of just capturing trainee reactions through simple ‘happy sheets’ to evaluative criteria that reflect changes in learning, transfer, behaviour and organization results (Arthur, Bennett, Edens, & Bell, 2003). A not dissimilar situation confronts those interested in determining how best to evaluate the effectiveness of intervention strategies although here the issue is couched more in terms of “the need for more eclectic methodologies to study organizational interventions” (Biron et al., 2012, p. 11). Clearly there seems to be a consensus growing around the need for mixed-method approaches (Biron et al., 2012) that reflect the reality of organizational life, adopt a more “broadly conceived framework” (Cox et al., 2007, p. 348) and are process oriented in focus (Nielsen et al., 2010). These values are clearly evident in the directions for the future. Biron and her colleagues suggest the need for ‘realistic evaluation theory’ where the approach is much more tailored towards answering what works, under what circumstances and for whom (Biron et al., 2012). Others, while maintaining the idea of realism, call for a process evaluative approach where the emphasis is on the social, individual qualities and role processes that influence the implementation and outcomes and lead us towards a better understanding what makes interventions work and under what circumstances (Neilson, 2013). All, of course are directed toward improving our understanding employee health and well being.

## **NEW CONTEXTS, NEW DIRECTIONS AND NEW OPPORTUNITIES**

While the above discussion on the challenges facing the development, design and evaluation of interventions cannot hope to capture the richness of the debate, the detail and depth of the arguments and the cogency with which they are expressed the hope is that it has provided a sense of the issues faced and the progress being made. But other demands are also being placed on researchers, practitioners and managers when it comes to intervention strategies. These emerge from the transformation of economics and the rise of the age of social progression where well-being becomes the focus of attention and what matters is the quality of life. Organizing around this focus, contributing to it and perhaps even growing out of it are the importance of good work and the good work agenda, the rise of the positive and the growth of the positive psychology movement and the call for a transactional approach to understanding stress where the emphasis is on those psychological process that link the individual to the environment through such concepts as appraisals and emotions. Out of this milieu new and creative ideas are emerging that begin to extend and help redefine job quality providing new boundaries against which intervention strategies should now test themselves.

Exploring the idea of good work the agenda establishes the need to think in terms of sustainable jobs, meaningful and fulfilling work coupled with a progressively broadening of our approach to understanding what good work is, its links to health and well being and the practical support needed to improve job quality (Coats & Lekhi, 2008; Constable et al., 2009). When thinking in terms of good work the focus needs now to move beyond core job characteristics and job design to embrace a wider job context that includes corporate

reputation, the quality of management, including the effectiveness of workplace relationships and the competency of operational managers (Coats & Lekhi, 2008). The aim of the good work agenda is to gauge the way in which interventions built around the ideas of good work and job quality can be implemented and lead to tangible improvements (Constable et al., 2009). A similar logic can be found when we turn our attention to positive psychology and the positive psychology movement itself. At the heart of this movement is its focus on individual growth and development (Sheldon & King, 2001), the sources of psychological wellness (Lyubomirsky & Abbe, 2003) and those situations that enable individuals to build 'positive qualities' and flourish (Gable & Haidt, 2005).

Here too the broadening of our understanding of health and well being is a central plank. It is a call to acknowledge that organizational contexts offer both negative and positive experiences, that interventions that aid and develop positive experiences and behaviour may offer more value to organizations and that in this way they are "more in keeping with the current focus on building healthy workplaces" (Fullagar & Kelloway, 2012, p. 155). The building of positive qualities through positive scholarship is well expressed via the concept of psychological capital where the focus shifts from simply "what you know" to 'who you are and what you want to become' (Luthans, Youssef, & Avolio, 2007, p. 10). Individual elements of psychological capital include self-efficacy, optimism, hope and resilience. All four components exhibit state like properties, are open to development, impact on well being and performance and offer new interventional approaches (Fullagar & Kelloway, 2012). Such a construct as Fullagar and Kelloway conclude "expand[s] our understanding of individual well being in the workplace" (2012, p. 156). The idea of an expanded view of health and well being is also reflected in the idea of organizational health development (OHD). OHD builds on the shift towards the positive and in parallel with the views of the positive psychology movement and its demand for a greater need for balance takes 'the increasing shift from the individual to the whole organization as a social system' where the integration of the two describes "a naturally ongoing and self directed process" and where interventions develop "the capacities of organizations and their members in order to improve ongoing organizational health development" (Bauer & Jenny, 2012, pp. 126, 140).

Future directions in Occupational Health Psychology (OHP) also point to the role of the positive; the need to emphasise individual strengths, positive organizations and positive health (Macik-Frey, Quick, Quick, & Nelson, 2009). Macik-Frey and her colleagues identify four 'positive advances' that are 'already unfolding' and will reshape the future for OHP. These four advances they describe as a greater emphasis on the notion of a more positive holistic approach to health, positive forms of leadership development that promote well being and 'create and sustainable healthy organizations,' a greater emphasis on moods and emotions and in line with public policy more emphasis on preventive interventions (Macik-Frey et al., 2009, pp. 9-10). Emphasising the significance of these four advances and their impact, these authors conclude that health will be 'much more about learning the secrets of the self-actualized person, that organizations will then need to adopt a more holistic approach to health and well being building their interventions on the premise that the "healthy worker is the best worker" reinforcing the sense that 'health is good for business" (2009, p. 15). Work and health are complementary and together form the basis for success and well-being (Quick & Macik-Frey, 2007).

Not only has positive psychology had a powerful influence on disciplines like organizational psychology and occupational health psychology it is, as we should not forget,

“a conceptual home for researchers and practitioners interested in all aspects of optimal human functioning” (Linley & Joseph, 2004, p. 3) so it is only natural that this collective voice has developed its applied side that emphasises the need for positive practice. Such practice facilitates opportunities for valued experiences, is mindful of the need for balance and its role in both ‘alleviating distress and promoting optimal functioning’ but where the goal is to offer experiences that move the individual on by facilitating growth and development and offers a “collective identity and common language” for the dissemination of the positive and positive interventions (Linley & Joseph, 2004, p. 6). Positive psychology offers a range of innovative and creative practices that cover all aspects of organizational life and beyond to embrace all aspects of society.

They present for the researcher, practitioner and manager an array of opportunities to influencing health and well being that move from developing individual strengths, characteristics and behaviour to positive work environments and sustainable organizations, positive human resources and learning and development strategies and from positive leadership to enabling a positive working life, that acts as an stimulus for social change with organizations as the change agent for good business (Linley, Harrington, & Garcea, 2010; see Garcea, et al., 2010). The idea of ‘shaping a new form of work’ one that captures the spirit of the age of social progression offers and provides techniques and strategies that test the boundaries of current practice (Garcea et al., 2010).

## CONCLUSION

When you begin to explore the idea of ‘from theory to interventions’ then you also have to ask not just what theory but what makes a good theory, and how long do theories remain relevant and by association extending the discussion to what are the ideas and assumptions behind our theory and how well do they represent not just the social, economic and political context but express the work experience as well. Of course there is also the question of transitioning; what from and where too- our responsibilities as researchers, practitioners and managers in meeting the challenges of the transition, avoiding the ease of the status quo and the convenience it gives to continue with established practices and methods, at the risk of discouraging the search for new and innovative approach and by implication allowing the gap between research and practice to grow, widening what needs to be achieved, how we need to get there and the expectations of those whose working lives we study (Dewe & Cooper, 2012).

In thinking about from developing knowledge to applying it we need to understand how that knowledge connects with the demands facing organizations, recognising that the dissemination of knowledge is as important as its creation as is how we “balance methodological rigor and practical relevance” (Corley & Gioia, 2011, pp. 27, 28). Whether or not we remain in a constant state of transition remains a moot point. What does become apparent from the work reviewed is that researchers, practitioner and managers working together in partnership present a context where creative methods flourish in this way providing not just the stimulus for more innovation and the development of methods but strategies for interventions that reflect the ever changing nature of the work experience and the best way to understand it.

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*Chapter 3*

## **BURNOUT AND ENGAGEMENT AT WORK: FROM THEORY TO INTERVENTION**

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### **ABSTRACT**

The challenge to uncover the critical factors and processes giving rise to high levels of efficacy, involvement, satisfaction, and production in the workplace continues to stimulate innovative research on job burnout and work engagement. Recent approaches in which an individual's work experience is assessed on a continuum between the negative experience of burnout and the positive experience of engagement is useful for researchers evaluating employees' varied experiences within organizations to aid in the design of appropriate intervention strategies. This chapter outlines some of the major research issues in the field, it summarizes current knowledge on the causes of inevitable job stress, job burnout and work engagement, and it provides information about the organizational conditions necessary for a healthy worklife including collegial relationships. Given the current level of knowledge about job stress and its associated effects, empirically robust evaluation instruments, as well as novel approaches to research design, this area offers promising new avenues of study that will improve our connectedness to the job, to the community, and most importantly, our overall sense of health and wellbeing.

### **INTRODUCTION**

Business and public sector organizations in the information/service economies of the 21<sup>st</sup> century demand a lot of employees. Success in a competitive global environment builds upon sophisticated knowledge, skills, abilities, and attitudes. It is not enough for employees to be punctual and compliant. Today's work requires a capacity to attend closely to other people (clients, colleagues, and competitors), to gain insight into others' perspectives, and to take appropriate, timely action. It requires the capacity to integrate information from diverse

sources into a coherent perspective. Most of all, it requires a creative approach that discovers new ways of doing things.

All of these capacities require energy, involvement, and efficacy from employees. None of these capacities are effortless, especially when employees must apply them day after day. All of these capacities require employees to focus their attention and to sustain that focus for extended periods of time. Taking action requires confidence in the validity of their analyses and their capacity to respond effectively to adjust action programs as they are implemented. Effective performance in the 21<sup>st</sup> century is not for the faint of heart.

A challenge for individuals managing their careers is to sustain their energy, involvement, and sense of efficacy. The capacity to provide sophisticated knowledge, skills, and abilities is a vital resource for individuals to make the most of opportunities available in a volatile, dynamic work environment. In a parallel fashion, employers benefit from strategies that assist employees in sustaining their energy, involvement, and efficacy at work. Successful management of these qualities provides a foundation for work engagement; a breakdown can result in an enduring syndrome of job burnout. Discovering methods that promote engagement while reducing the probability of burnout presents a challenge to both psychological theory as well as to management practice.

What are the factors and psychological processes involved in the relationships individuals develop with work and what does the current state of research propose for alleviating inevitable job stress? What kinds of conditions are necessary for a healthy work experience? Finally, interventions aimed at preventing job stress and burnout, are diverse: what do research findings indicate about effective interventions within the workplace?

Psychological connections people have with their worklife range from the distress of job burnout through to the joys of work engagement. A considerable body of research has demonstrated that a person's position on this continuum has associations with a variety of outcomes with implications for productivity, fulfillment, mental wellbeing, and physical health. This chapter provides an overview of the nature of this critical dimension of worklife, the conditions that influence an employee's position on the continuum from burnout to engagement, and the potential for focused interventions to move individuals, workgroups, or organizations away from burnout and towards greater engagement with their work.

## **A BRIEF OVERVIEW OF JOB BURNOUT**

The relationship individuals have with their jobs and the difficulties that can arise in that relationship have been extensively researched for well over 35 years (Maslach & Leiter, 2005). Job burnout is often the result when that relationship goes awry. It develops primarily in response to a poor fit of employees with their work and gives rise to multiple physical, mental, social and organizational complaints and problems. Given the significant psychological and physical illnesses as well as the diminished work productivity burnout can create, researchers have recently turned their efforts towards developing generic intervention strategies to change the individual's negative experience of work. Employees' experience of internal strain plays a mediating role between the impact of job demands and work-related outcomes such as illness, absenteeism, and poor performance, to name a few. This mediating step now commonly known as job burnout is a response to persistent emotional and relational

stressors on the job and is conceptualized by the three dimensions of exhaustion, cynicism, and inefficacy (Leiter & Maslach, 2005). Typically, those experiencing job burnout find difficulty generating excitement to meet job challenges, preferring to reduce their participation at work and withdrawing into the more routine parts of their jobs. A significant loss of psychological and physical energy and the feeling that emotional resources are significantly or even completely diminished characterizes the dimension of exhaustion. Indeed, fatigue is the most common complaint among employees experiencing burnout and is considered to be the main symptom of the syndrome (Maslach & Leiter, 2008). Cynicism is an attitudinal quality marked by the extensive use of jargon, derogatory language, and social withdrawal. There is a quality of depersonalization shown by objectification and emotional detachment toward patients, clients, co-workers and supervisors in the work setting. Inefficacy or diminished personal accomplishment is characterized by increasingly negative self-evaluations. Individuals experiencing inefficacy often feel less competent at work regarding their achievements and interpersonal relations, and view their own skills and abilities as insufficient for successfully performing their jobs. Although inter-related, these three components — exhaustion, cynicism, and inefficacy — do not develop in lock-step. For example, exhaustion may persist for a time without clear signs of the other two components. However, in the long run the components tend to align with one another. The full burnout syndrome encompasses negative scores on all three of these dimensions.

## **INDIVIDUAL FACTORS IN JOB BURNOUT**

Several individual factors are predictive of job burnout, including demographic characteristics such as age, marital status and level of education. Job burnout is more likely in younger age groups although this may be confounded by work experience (Schaufeli & Enzmann, 1998). Thus, burnout seems to be more common in the early stages of one's career. Singles experience higher levels of job burnout. People with higher education have higher levels of burnout but this may be due to the fact that they have greater levels of responsibility and stress. Findings relating demographic variables to burnout are difficult to interpret due to confounding factors. Burnout is also elevated in people who have an external locus of control (for example, those who blame events on others or chance), low levels of hardiness (for example, they have a low involvement in daily activities and a low openness to change), poor self-esteem, and who have an avoidant coping style. Burnout is also linked to neuroticism on the Big Five personality dimension (Zellars, Perrewe, & Hochwarter, 2000). Individuals who score high on neuroticism experience more psychological distress and experience more emotional instability, in part explaining their predisposition to burnout. The exhaustion dimension also seems to be linked to Type-A individuals who are those manifesting high levels of competition, time-pressured lifestyle, and hostility.

### **The Consequences of Job Burnout**

The effects of burnout are numerous and varied, spanning the psychological, emotional, physical and social domains of employees and their immediate context, from the workgroup

to the larger organization. Common complaints include lost creativity, diminished commitment to work, detachment from various job aspects, physical and emotional illnesses, inappropriate attitudes toward the self and clients, and a general feeling of being worn-out (Cordes & Dougherty, 1993). Burnout has been connected to various mental health problems including emotional lability, cognitive rigidity, interpersonal cynicism (Piedmont, 1993), increased irritability, depression, anxiety, fatigue and insomnia, decreased self-esteem, and deteriorating social and family interactions (Burke & Deszca, 1986; Zellars et al., 2000). Physical health problems strongly associated with burnout include headaches, gastrointestinal disorders, muscle tension, sleep disorders, cold/flu episodes, and heart disease (Leiter & Maslach, 2000; Schaufeli & Bakker, 2004; Shirom & Melamed, 2005).

Recent work on the consequences of burnout suggests that emotional exhaustion may decrease job performance through its effects on employee motivation (Halbesleben & Bowler, 2007). Specifically, employees experiencing emotional exhaustion seem less motivated by achievement and status, and behaviors aimed at satisfying job performance goals decline. As employees experience increasing amounts of the burnout components they may unintentionally enact harm upon themselves, coworkers, clients or the organization. Nurses experiencing burnout, for example, were judged by their patients as providing a lower level of care (Leiter, Harvie, & Frizell, 1998).

The negative effects of job burnout create enormous losses within the organization. Those who experience burnout are more likely to be absent from work, display reduced productivity, or leave the organization entirely, all of which create massive losses in terms of time, productivity and cost (Leiter & Maslach, 1988). In Canada, for example, one out of four workers suffers mental health problems due to stress or burnout. According to Simard (2004), 3,400,000 Canadian workers suffer from burnout and 35% of the labor force report that they are stressed by overly-heavy workloads or from working long hours. Absenteeism related to mental health in Canada between 2002-2003 cost Canadian businesses 16 billion dollars. The necessity to ameliorate the effects of burnout is essential for employees, employers and the organization.

## EVALUATION OF THE BURNOUT CONSTRUCT

Maslach and Jackson's (1981) three-part approach to burnout is the standard conceptualization of the burnout phenomenon and can be assessed through a valid instrument, the Maslach Burnout Inventory (MBI-GS). The MBI-GS has assessment utility in all occupations and it is a standard research instrument for evaluating burnout around the world (Maslach, Leiter, & Jackson, 2012). Although the psychometric properties are similar cross-culturally, national differences in average levels of burnout have been found with Europeans showing lower average scores than North Americans (Schaufeli & Enzmann, 1998). Some approaches have defined burnout entirely in terms of exhaustion (e.g., Pines, 1993; Shirom, 1989), but these approaches fail to capture the complexity of employees' psychological connections with their work. If burnout were nothing other than exhaustion, the term, burnout, would be unnecessary, as the word, exhaustion, would suffice.

The three-component structure of the MBI presented the challenge of articulating how the three burnout components related to one another. Leiter (1993) proposed a process model in



which exhaustion developed first due to its close links with workplace demand. Cynicism then developed as a reaction to exhaustion, perhaps as an attempt by employees to establish emotional distance from demands. This relationship has been confirmed across a variety of occupational settings (Lee & Ashforth, 1993; Maslach & Leiter, 2005). Inefficacy presents a more complicated relationship to the first two dimensions, at times being directly related and at other times showing independence.

## **CHANGING THE RESEARCH FOCUS: FROM BURNOUT TO ENGAGEMENT**

More recent approaches toward alleviating burnout in the workplace concentrate on the promotion of its counterpart, work engagement. An individual's work experience can be viewed on a continuum between the negative experience of burnout (comprised of exhaustion, cynicism, and inefficacy) and the positive experience of engagement (comprised of energy, involvement, and efficacy). This is a useful conceptualization allowing researchers to better evaluate the varied experiences of employees within organizations and make decisions about appropriate intervention strategies. Encouraging engagement offers a more useful framework than one that simply reduces stress. It permits applied researchers to more easily design a work setting in which there is development of the three core qualities of engagement, thereby actively supporting the health and performance of its employees. In addition, the onus of change is on the context of the job rather than on the individual.

## **THE EXPERIENCE OF WORK ENGAGEMENT**

There are slightly different conceptualizations of work engagement among the experts but most agree that it refers to a particular mental state in which the person has a vital relationship with work and which produces positive outcomes at the individual level, in terms of personal growth and development, and at the organizational level, in terms of performance quality. Kahn (1990, 1992) for example, conceptualized engagement within the context of work, describing the psychological experience of feeling connected to one's job as related to the degree to which an individual identifies with their role. Rothbard's (2001) different conceptualization views engagement in terms of a two-dimensional motivational construct: attention and absorption. Attention refers to cognitive availability and the amount of time spent thinking about their work role and absorption refers to the intensity of focus on that role.

Work engagement has been operationally defined as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli, Salanova, González-Romá, & Bakker, 2002, p. 74). Vigor refers to high levels of energy, mental resilience while working, voluntary demonstration of investment in one's work, and persistence through difficult moments. Dedication is characterized by a strong involvement in one's work and experiencing a sense of significance, enthusiasm, and challenge. When an individual is absorbed, they are fully concentrated and happily immersed in work, time passes

quickly, and the individual has difficulties with detaching oneself from work (Schaufeli & Bakker, 2004).

## **A CONTINUUM OF EXPERIENCE: BURNOUT TO ENGAGEMENT**

Vigor and dedication are considered to be direct opposites of exhaustion and cynicism, the two core dimensions of burnout. The dimension of absorption does not necessarily have a corresponding component at the other end of the engagement/burnout continuum. Similarly, the reduced personal efficacy dimension of burnout does not have a corresponding engagement counterpart. Efficacy does not seem to capture the engagement experience but absorption seems to reflect the broader construct of engagement (Schaufeli & Salanova, 2007).

On the positive end of engagement, employees feel energetic, involved, and efficacious. On the negative end they feel exhausted, cynical, and discouraged. Most experience varying degrees of these three qualities between the two extremes, and thus define how employees' participate and involve themselves at work. The dimensions of burnout and engagement are not necessarily opposites. They do not move in lock-step: for example, although cynicism usually aligns with exhaustion, occasionally a few employees may maintain dedicated involvement despite feeling exhausted. However, these inconsistent combinations are rare, and they tend to resolve towards consistency in either the burnout or engagement direction (Maslach & Leiter, 2008), supporting the proposition that they are probably opposite psychological states.

### **Evaluating Work Engagement**

The continuum spanned by vigor and exhaustion has been labeled 'energy' whereas the continuum spanned by dedication and cynicism has been labeled 'identification' (González-Romá, Schaufeli, Bakker, & Lloret, 2006). Engaged employees have high levels of energy, are enthusiastic about their work, and strongly identify with it. Employees experiencing burnout have low levels of energy and show poor identification with their work. Some researchers argue that the MBI assesses the full range of experience from job burnout to work engagement. Low scores on exhaustion and cynicism along with high scores on efficacy capture the essential qualities of engagement (Maslach & Leiter, 1997, 2008).

The Utrecht Work Engagement Scale (UWES) was developed by Schaufeli and colleagues (Schaufeli & Bakker, 2004), and is based on the notion that both positive and negative psychological states may coexist. They argue that the MBI falls short by measuring energy and dedication from a solely negative perspective. Reporting that one never experiences exhaustion cannot be taken as synonymous with stating that one feels energetic. The UWES, with references such as 'bursting with energy' goes beyond the neutral state of no-exhaustion to describe a more definitive state of feeling energetic. Critiques of the MBI perspective on engagement often overlook the professional efficacy subscale that provides a positive perspective to complement the negatively worded items in the exhaustion and

cynicism subscales. The research to date remains inconclusive on the extent to which this contrast between the two approaches to assessing work engagement is consequential with regard to predicting outcomes pertaining to employees' productivity or well-being.

The UWES is a useful tool for evaluating work engagement as a separate construct from burnout and demonstrates good discriminant validity with the MBI. Correlations between engagement and burnout typically range from  $-.40$  to  $-.60$ , showing lower correlations between absorption and the MBI scales and higher correlations between inefficacy and the UWES scales.

## THE CONSEQUENCES OF WORK ENGAGEMENT

The continuum from burnout to work engagement has far-reaching implications for employee productivity and wellbeing. Each of the underlying dimensions appears to be consequential, but the energy dimension has the broadest range of impact on both the positive and negative end of the continuum. Researchers generally use measures of performance and job satisfaction as indicators of employee engagement. Performance is not a uniform construct in the empirical literature and work engagement is differentially related to different aspects of performance. Different approaches look at the process of performance, the outcome of performance or both. The process approach focuses on the actions or strategies individuals use to attain their performance objectives while the outcome approach refers to the products or services that are produced and whether these are consistent with the overall objectives of the organization. In addition, performance can be measured at the individual or work unit level.

Although there are many different models of work engagement, the three-part model is perhaps the most useful due to the predictive capacity of the vigor dimension on performance. Schaufeli and Bakker (2004) found that engaged workers demonstrate more initiative, generate their own positive feedback about their work, possess higher levels of energy, and show more enthusiasm. In the context of education, Schaufeli, Martinez, Marquez Pinto, Salanova, and Bakker (2002) showed that students reporting higher levels of vigor performed better on exams. The vigor aspect of work engagement appears to be the most crucial for performance in the same way that exhaustion, or lack of vigor, shows a consistent pattern with poor performance.

Leiter and Maslach's (2005) mediation framework proposes that the subjective experience of exhaustion, cynicism, and reduced efficacy are an integral step in the process through which problems encountered at work result in outcomes such as reduced productivity, distress, and poor health. Within the positive range of experience, the energy, dedication, efficacy, and absorption of work engagement mediate the impact of a constructive work environment with productivity and well-being.

### An Aside: Workaholism

Discussions of the dark side of work engagement generally pertain to its somewhat porous border with workaholism. Relatively little research has focused on workaholism,

typically defined as “the uncontrollable need to work incessantly” (Oates, 1971, p. 17). Conceptualizations are varied but it may be viewed positively or negatively depending on the workaholic’s psychological state and the outcomes of that person’s work behavior. Spence and Robbins (1992) crossed work-involvement (high work commitment and high time dedication), drive (internal compulsion to work) and work enjoyment (reaping enjoyment and fulfillment from work) to yield six different types of workers, three of which were identified as workaholics: (1) a non-enthusiastic workaholic is high in commitment and drive and low in enjoyment; (2) enthusiastic workaholics are high in pleasure, commitment; and drive and (3) work enthusiasts are high in commitment and enjoyment but lack the motivation to work hard. In its negative form, workaholism occurs when the individual’s excessive work habits cause health, psychological or relationship problems. Workaholism in its positive form resembles workers who are engaged with the difference being that workaholics cannot resist the compulsion to work. In contrast, those who are engaged with their work are internally motivated to work because they enjoy it. Both workaholism and work engagement are characterized by the amount of effort put into work (both time and energy), but workaholism is associated with negative work characteristics, lack of physical and mental well-being and only moderate trust in one’s work performance.

## FLOW AND POSITIVE AFFECT

Flow is a concept that has emerged from the positive organizational psychology movement. Originally coined by Csikszentmihalyi (1975), flow refers to the experience of working at optimum capacity with deep engagement and effortless action, while drawing upon the limits of one’s personal abilities to meet the required challenges of the task at hand. Csikszentmihalyi originally studied the phenomenon as experienced by painters, rock climbers, dancers, and musicians and most research on the subject has focused on the experience of flow in voluntary, leisure, or sporting activities. However, flow has also been reported while carrying out work-related tasks (Csikszentmihalyi & LeFevre, 1989). Although flow describes an experience very similar to absorption in one’s work, which is a dimension of engagement, it is characterized by short-term ‘peak’ experiences. Absorption is a more pervasive and persistent state of mind (Bakker & Leiter, 2010).

Investigators have identified nine dimensions of flow that encompass this highly desired state of being, action and awareness (Jackson & Marsh, 1995). One such dimension involves a *balance* between the challenges of the task-at-hand and the skills required to perform it. This *challenge-skills balance* characteristic of flow surpasses the level of typical daily experiences in that the challenges meet the limits of those skills. There is also a *merging of action and awareness* in which involvement is so deep that there is a feeling of automaticity about one’s actions. This gives rise to a *paradox of control* in which behavior is spontaneous and people feel that they are in control but as soon as there is a shift of attention to maintaining the control, the sense of flow is lost. Flow is also characterized by a loss of *self-consciousness*. Another distinguishing feature of flow involves the *clarity of goals*, in which the individual feels certain about what has to be done. The activity in which the individual is engaged also provides clear, immediate and *unambiguous feedback* about how the task is being carried out. Other features of flow include a high degree of *concentration* on the task-

at-hand and a *transformation of time*, in which time is perceived as passing more quickly or more slowly, or in which there is a complete lack of awareness of the passing of time. Flow experiences are enjoyable and an end in themselves without the expectation of a future reward or benefit. This has been termed *autotelic experience* (Csikszentmihalyi, 1990).

These nine dimensions of flow provide a comprehensive measure of optimal experience and are highly correlated with a substantial proportion of shared variance. Due to the intercorrelations among dimensions, some have raised the necessary question of whether flow is a state (due to situational characteristics) or a trait (due to individual factors). If the experience of flow is dependent on environmental factors, organizations could strive to guarantee the existence of the conditions necessary for it. On the other hand, if it is dependent on the individuals and their capacity to experience flow, organizations might want to consider the selection criteria of their employees. Research indicates that flow is dependent on both state and trait factors but environmental characteristics tend to be more important (Fullagar & Kelloway, 2009). For example, both Demerouti (2006) and Fullagar and Kelloway (2009) reported that flow was more likely in situations where there is a variety of skills needed to carry out the job task and where there is autonomy (the individual has independence in task scheduling and completion). Fullagar and Kelloway (2009) used hierarchical linear modeling and found that 74% of the variance in flow was due to situational variables compared to dispositional ones.

## PSYCHOLOGICAL CAPITAL

Another construct emerging from the field of positive organizational behavior is Luthans' (2002) psychological capital (PsyCap). PsyCap is composed of four key resources or traits which can be altered to improve both organizational and individual well-being (Luthans, Norman, Avolio, Avey, & 2008). The following traits have been shown to mediate performance and satisfaction within the workplace: (1) *self-efficacy* which refers to having the confidence and effort needed to succeed at challenging tasks; (2) *optimism* which refers to making positive attributions about present and future success; (3) *hope* which is the perseverance towards the attainment of goals and being able to redirect the paths to those goals when necessary; and (4) *resiliency* which is the ability to bounce back in the face of adversity to gain success. There is empirical evidence that the higher order construct of PsyCap predicts better outcomes for improving both performance and satisfaction compared to its' individual components (Luthans, Avolio, Avey, & Norman, 2007). Through positive emotions, PsyCap offers a model relating these four psychological resources to the three domains of work engagement.

Self-efficacy is the confidence an individual possesses with regard to his or her abilities to successfully complete a task (Stajkovic & Luthans, 1998). People with a high self-efficacy thrive on challenge, are highly motivated, persevere in the face of adversity, set high goals and work hard to reach them. Optimism is a facet of PsyCap that is associated with a positive outlook or attribution of events. Optimism is not an unchecked process without realistic evaluation rather it includes an appraisal of what one can or cannot achieve and thus adds to an individual's sense of efficacy and hope. Realistic optimism is dynamic, changeable and state-like (Peterson, 2000). Optimists are people who attribute success to permanent, personal

and pervasive causes and view negative outcomes as being due to temporary, external and situation-specific factors. Individuals with a sense of hope have the ability to generate multiple strategies in order to achieve their goals. Hope is a positive emotional state and generates a sense of success. It is associated with well-being, health and performance outcomes (Luthans et al., 2007). Positive emotions improve resiliency or the capacity to bounce back in the face of negative events or stressors, reflecting a state-like quality as well. PsyCap is the sum of these four qualities together and yields a particularly useful construct in that it provides more predictive power than the individual parts that comprise it.

### **IMPROVING THE WORK EXPERIENCE: AREAS OF WORKLIFE**

Leiter (2008) proposed a two-process model of burnout that makes different predictions for how job demands versus a gap in worker-organization values can bring about the syndrome. The first process considers the balance of demands to available resources in which a poor balance leads to chronic fatigue. As discussed previously, exhaustion is the central component of the burnout syndrome. However, consideration of the exhaustion component leads to a simple focus on the stress created by job demands. The effects of job demands on exhaustion are impressive, but can only provide part of the picture. A second and more complex process involves the congruence between individual versus organizational values. In this scenario, workers begin to lose interest and a sense of accomplishment in their work, which can lead to cynicism and a reduced sense of efficacy. Using a sample of 725 nurses, Leiter (2008) tested this dual process model. In addition to the strong relationship between workload imbalance and exhaustion normally observed, value congruence contributed to the predictive ability for all three dimensions of burnout. It appears that the value process, in which individuals lose a sense of meaning for their work, runs parallel to the depleting energy process leading to exhaustion. That is, employees who are physically and emotionally drained also lack the conviction that they are working for a meaningful cause.

To answer some of the more compelling questions about what specific factors lead to burnout or engagement, research incorporating the Areas of Worklife Scale (AWS) permits a more complete picture of how organizations can improve worklife for their employees (for example, Leiter & Maslach, 2004). It assesses a continuum of job-person fit to misfit within six domains: work overload, lack of control, insufficient reward, breakdown of community, absence of fairness, and value conflict. A good fit on any of these domains predicts work engagement. In contrast, poor fits between job and person on these domains predict burnout.

The first domain, work overload, refers to the situation where the demands of the job surpass human limits. It is a common complaint that employees have too few resources and too little time to meet deadlines or finish tasks. Studies have shown that heavy workload is consistently related to burnout, in particular with the dimension of exhaustion (Leiter & Harvie, 1998). Stress due to burnout is further complicated when no opportunity to recover from a period of intense work becomes available. A more sustainable workload in which individuals can confidently meet their occupational responsibilities while at the same time continuing to develop and refine their skills, cultivates the ideal work experience.

An individual's perceived capacity to influence decisions at work or the possibility of professional independence within the execution of job responsibilities characterizes what is referred to as the second domain, control. Control problems arise when there is a role-conflict which has been shown to be strongly correlated with elevations in exhaustion (Maslach, Jackson, & Leiter, 1996). Role conflict can arise when there are too many authorities with conflicting demands and incongruent values and is in fact, a good indicator that an authority problem exists in the workplace. Role ambiguity, the absence of direction in work, also appears to influence perceived control and is also associated with burnout (Cordes & Dougherty, 1993). When workers have a sense of control over their work and they are able to freely choose their actions greater job satisfaction and commitment are the result. In addition, employees who actively participate in organizational decision-making report higher levels of efficacy and lower levels of exhaustion (Lee & Ashforth, 1993).

Reward is an important factor influencing people's sense of involvement in their work; it is the daily experience of pleasure and satisfaction that results from the workflow. Enjoyment of the workflow is linked to psychological and physical well-being. A job which offers intrinsic rewards is just as important as one that offers extrinsic rewards (Leiter, 1992). Extrinsic rewards are those that are monetary or social. Lack of recognition for a job well-done by colleagues and authority figures within the organization are associated with feelings of inefficacy (Maslach et al., 1996). Neglect that comes from material and social reward systems can cause an individual to feel disconnected from the organization. Various studies have shown that an insufficient reward system (economic, organizational, or social) increases people's disposition towards burnout (Maslanka, 1996).

Community refers to the general quality of social relations and dynamics in the workplace and includes the capacity to resolve issues of conflict, to work as a team, to garner mutual support, as well as the overall emotional closeness between persons. Research looking at coworker, supervisor, and family support, has generally found that lack of supervisor support is regularly associated with exhaustion, which is mediated by workload demands (Leiter & Maslach, 1988). Coworker support is related to accomplishment or feelings of efficacy, which appears to reflect the value that employees place on their peers' evaluations of them. Social support or a sense of community is linked to higher levels of engagement (Leiter & Maslach, 1988).

Fairness at work refers to the degree to which decisions at work are perceived as being fair and the respect that is demonstrated in the work setting. Respect is also central to people's sense of community. An imbalance in workload or pay, cheating, inappropriately managed promotions, and inadequate procedures for dispute resolution are situations which can result in a sense of unfairness or injustice at work. Individuals who perceive their supervisors as fair and supportive are less likely to experience burnout (Leiter & Harvei, 1998). Fairness appears to be a value that employees consider to be indicative of genuine concern for the organization and its staff. They are confident that in circumstances of stress or difficulty they can confide in the organization to resolve problems. Employees who perceive fairness in the workplace expect that the organization will allocate resources and opportunities equitably to all members without impartiality.

The domain of values in the area of worklife represents the core of people's connection with their jobs. The values an individual holds in relationship to their job go beyond the exchange of time for money or career advancement, but rather represent the motivating force that attracted them to the job originally. Pick and Leiter (1991) found that the misalignment of

values between employees and those of the organization results in people leaving their jobs to find more fulfilling opportunities elsewhere. Leiter and Harvei (1998) found that a conflict in values between the individual and the organization is associated with all three burnout dimensions.

Burnout is a reaction to chronic mismatches and thus time is a factor in its development and subsequent manifestation. Prior conceptualizations of the job-person fit are limited in their applicability to the study of the burnout phenomenon because the individual is considered within the framework of personality characteristics and the job is considered only with regard to tasks and not in terms of the organization as a whole. The basic mediation model which considers the fit between the job and the person over a wide variety of domains offers a more complete framework for understanding burnout. Development of the Areas of Worklife Scale is a key research instrument that measures organizational factors contributing to burnout. These six areas pertain equally well to work engagement. A work environment in which these six qualities are well aligned with employees' aspirations and preferences has a strong potential for both decreasing burnout and actively supporting work engagement. It is easily applicable in a wide range of occupational settings for the purposes of applied research and intervention.

## **Cultivating Engagement**

What factors are associated with, or encourage the development of engagement? In recent years there has been active development of theories which attempt to explain the potential causes of engagement or the necessary conditions for its development. Tasks that give individuals a sense of pride and purpose, and make them feel as if they are accomplishing something are energy-giving and promote engagement. There appears to be a delicate balance between job demands, which can be health-impairing, and available job resources, which provide the motivation and energy to complete occupational tasks. Job stress is understandably low when these two factors are balanced. Theories that take into consideration a job-characteristics approach are the job-demands/resources theory (Demerouti, Bakker, DeJonge, Janssen, & Schaufeli, 2001) and the broaden-and-build theory (Fredrickson, 2001).

The job-demands/resources model (JD-R model) proposed by Demerouti and her colleagues in 2001 is the most frequently used theoretical framework applied to the study of occupational engagement. Job demands are defined as the physical, social or organizational characteristics of the job that continually deplete the physical or psychological energy of the worker and which are associated with definite physiological and psychological costs. Job resources, on the other hand, refer to the physical, social or organizational features of the job that reduce job demands and the associated physiological and psychological costs. Job resources are also those aspects which allow individuals to meet their work objectives and which stimulate personal learning, growth and development. The JD-R model predicts that when job resources are high and job demands are either high or low, engagement should also be high. However, burnout is more likely to result when resources are low and job demands are high.

Halbesleben (2010) conducted a meta-analysis of data from 74 unique samples (45,683 participants, in total) examining specific resources, demands and outcomes and how they are related to engagement. Resources examined included social support, autonomy/ control,



feedback, organizational climate, self-efficacy, and optimism. The results of this analysis confirmed the long-standing view that employee resources play a strong role in the development of interventions favoring engagement. A particularly important resource with a positive link to engagement is self-efficacy, the feeling that one is capable of completing the job tasks. Some steps to ensuring that self-efficacy is a potential part of the work experience includes the existence of challenging tasks, visible recognition of employee success in the workplace, provision of employee support and encouragement, as well as the reduction of emphasis on task completion (Maurer, 2001).

Frederickson's broaden-and-build theory (B&B) attempts to explain how positive emotions or affective states give rise to well-being. Emotions such as pride, joy, interest, and enthusiasm, to name a few, amplify or broaden individuals' momentary thought-action repertoires and build enduring personal resources spanning the physical, psychological, social and intellectual range. The resulting cognitive flexibility leads to increased behavioral tendencies, allowing people to more successfully manage and cope with future challenges. Frederickson, Cohn, Coffey, Pek, and Finkel (2008) manipulated positive affect through a loving-kindness meditation workshop. The group who attended the workshop practiced the meditational exercises, increasing daily positive emotion. Compared to the control group, who did not attend the workshop, these individuals reported more personal resources such as mastery and self-acceptance which predicted increased life satisfaction and reduced symptoms of depression.

Both of the theories outlined above identify resources as an essential factor of engagement. In addition, general work and environment resources are also important in the engagement experience. The development of more social support networks within the organization, the modification of work systems to heighten employee control and autonomy over their work, and making general changes to the organizational climate were also shown to have strong positive connections to engagement. Another important job resource is the implementation of job rotation or changing jobs in order to challenge employees, increase motivation, and stimulate learning as well as professional development. Bakker, van Emmerik, and Euwema (2006) highlight the importance of leaders in the cultivation of engagement. In particular, transformational leaders motivate employees to work beyond their own expectations by transforming their norms and values. Through inspiration and stimulation, leaders increase employees' personal resources by increasing their optimism which leads to more job engagement (Tims, Bakker, & Xanthopoulou, 2011).

Halbesleben's (2010) meta-analysis also replicated research showing that work engagement constructs were negatively associated with burnout. The theoretical and empirical strength of association between the two constructs allows action researchers to consider that interventions directed at healing burnout could also have the advantage of developing engagement.

## PRACTICAL IMPLICATIONS

Research has provided a vast wealth of knowledge about the sources and consequences of job strain, burnout, and worklife conflict but surprisingly, there is relatively little knowledge about effective long-term solutions for alleviating job burnout (Halbesleben & Buckley, 2006;

Maslach, Schaufeli, & Leiter, 2001). Interventions may focus on changing the individual or the organization but successful programs probably require modifications on both levels. It is paradoxical that most burnout reduction studies focus on individual-centered solutions (Schaufeli & Buunk, 2003) given that research points to the importance of organizational-level factors such as the availability of resources and job demands, as discussed previously.

Interventions aimed at the individual attempt to improve the person's ability to cope with stress through education. Individual-based intervention strategies include stress inoculation training, relaxation, time management, assertiveness training, rational emotive therapy, training in interpersonal and social skills, team-building, management of professional demands, and meditation. Although people can learn techniques to manage the demands of their job, there must be recognition and flexibility within the organization for individuals to employ these techniques. As well, there is mixed research about whether any changes due to individual interventions can be sustained over time.

A recent longitudinal study (Bresó, Schaufeli, & Salanova, 2011) that involved random assignment of university students experiencing burnout to an individual cognitive-behavioral intervention program aimed at strengthening and promoting self-efficacy, offers promising results towards developing engagement. Based on Bandura's Social Cognitive Theory, these researchers hypothesized that increased self-efficacy would improve students' sense of wellbeing, and their persistence in mastering academic tasks, which in turn would result in more knowledge and acquired skills. The intervention involved optimizing positive psychological states and reducing negative ones. By training students to recognize and cope with anxiety-provoking thoughts, seek realistic and alternative thoughts and then implement these cognitive and behavioral alternatives into their lives, feelings of self-efficacy were significantly improved compared to healthy and stressed control groups. As well, engagement was found to be significantly higher in the intervention group, 2 months after the intervention was completed. These results suggest that self-efficacy can affect the motivational process that leads to engagement.

As discussed earlier, extensive research has shown that burnout, conceptualized as a continuum of experience rather than as a discrete condition has practical implications for guiding researchers and practitioners in the design of burnout interventions. The burnout-engagement continuum as assessed by the MBI and the different workplace factors associated with the phenomena, as measured by the Areas of Worklife Scale, are two indispensable tools for organizational assessments. Leiter and Maslach (2000) have combined research instruments with assessments of organization-specific concerns to engage the interest and cooperation of managers towards a solution. Both the MBI and the AWS provide an "organizational checkup", identifying strengths and weaknesses in the organization and symptoms of burnout to anticipate possible future problems and develop preventative interventions (Maslach et al., 2012). These measures prove valuable for conducting ongoing self-assessments or monitoring changes over time. Longitudinal studies have shown that patterns in scores on the MBI and AWS at Time 1 predict work and organizational outcomes a year later (Maslach & Leiter, 2008).

One particularly promising line of research involves changing the qualities of the work environment at the work unit level. Organizations are designed and managed around work units where managers are held accountable for large groups of employees. Productivity, turnover rates and work unit engagement provide indications of managers' performance. When an organization displays signs of burnout, interventions are designed and implemented

across units to ameliorate its effects. Modifying the qualities of the work environment at the work unit employee may improve engagement. Leiter and Maslach (1988) found that co-worker and supervisor relationships have strong links with burnout, supporting the notion that improving those relationships would have an ameliorative effect within the workplace as a whole.

Another interesting line of research demonstrated that incivility negatively impacts the quality of work relationships (Pearson & Porath, 2009). Studies which improve civility may offer organizations an effective means for reducing job burnout, as well as increase the opportunity for workers to become more engaged. Promising research on promoting civility in the workplace is presented below.

## **CREW: APPLIED RESEARCH IN ACTION**

Civility means “being attentive to colleagues, listening to their views and concerns, accommodating each other’s preferences and anticipating the impact of one’s behavior on another” (Maslach et al., 2012, p. 298). Incivility is marked by a careless disregard for the feelings and views of those with whom one has significant interactions with and can even include demonstrations of disrespect. CREW (Civility, Respect, and Engagement at Work) is a structured intervention process that improves employee civility, possibly ameliorating burnout (Osatuke, Mohr, Ward, Moore, Dyrenforth, & Belton, 2009). It is a process conducted by facilitators who guide workgroup members during regular meetings over a six-month period. During this time, a toolkit of exercises and discussion topics are completed to reflect upon new ways of interacting. Role-playing prepares colleagues to try out new social behaviors during the workdays, and then these are reflected upon in later sessions.

In an extensive study implementing 41 units of health care workers, Leiter, Laschinger, Day, and Gilin-Oore (2011) replicated Osatuke et al.’s (2009) finding that the CREW process improves levels of civility among coworkers. Most importantly, their findings showed that improvements in civility mediated improvements on the cynicism dimension of burnout from Time 1 to Time 2 for the intervention versus control groups. There were also improvements in job attitudes among the intervention units compared to controls. CREW had a positive impact on burnout, turnover intention, commitment to the organization, absences after 6 months of the intervention, and trust in management. Reductions in incivility demonstrated that CREW encouraged positive social behavior and minimized negative ones. The fact that a reduction in cynicism was found through the CREW intervention indicates that civility is an important factor in social relationships in mediating burnout. These results suggest that burnout may be partially combatted through the improvement of social relationships in coworkers.

## **KEY POINTS**

Positive organizational behavior (POB) research has been defined as “the study and application of positively-oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today’s workplace” (Luthans, 2002, p. 59). One such research area where the benefits of

applying this approach may be gained is in the study of job burnout and its positive counterpart, work engagement.

Interventions to address burnout vary in the ways in which they balance two distinct but related agendas. On the one hand, interventions change qualities of the work environment, policies, or practices that fit more smoothly with employees' preferences or aspirations. On the other hand, interventions can strengthen employees' capacity to withstand the stains inherent in work environments that conflict with those preferences or aspirations.

## CONCLUSION

This overview of the range of experience from burnout to work engagement suggests a lively research agenda to explore these constructs more thoroughly. Although much progress has been made over the previous decades of research on these issues, much remains to be discovered.

The first major research issue lies in investigating more deeply the process through which people change their position on the complex continuum from burnout to work engagement. This research could identify the inherent stability in these qualities presents challenges to untangle the experiences and structures within worklife that have a meaningful impact on employees' experiences. Through longitudinal survey studies or multi-day diary formats, researchers can gain a perspective on events and their impact on employees. However in light of the inherent stability in the constructs, researchers may find themselves observing a steady state rather than an evolving process.

The second major research issue, intervention studies, not only increases the probability of meaningful change but increases in the depth to which one can generate testable hypotheses about the nature of change. In designing interventions and contrasting them with distinct control groups, researchers can identify factors with a potential impact on employees' energy, involvement, and efficacy. For example, the CREW intervention process tested the proposition that the quality of collegial relationships had implications for employees' access to key resources. When experiencing ongoing workplace incivility, employees encountered serious mismatches in a community, a key area of worklife. By implementing a process that improved the quality of workplace discourse not only generated change in employees' experience of their work environment, it focused the investigation on a specific dynamic for explaining that change.

Longitudinal research and especially designs that include interventions require an excellent working relationship of researchers with management and with research participants. In light of the disruptive nature of such projects, it becomes important to establish and to maintain a mutually beneficial partnership that addresses real problems within the workplace. In a changing and volatile world of the 21<sup>st</sup> century, organizations continually strive to adapt to improve their productivity and quality of worklife for employees. With this framework of alleviating burnout and building engagement, researchers are in a position to make a meaningful contribution that deepens understanding as well.

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*Chapter 4*

## **HOW TO PROMOTE POSITIVE EMOTIONS AND ADAPTATION AT WORK**

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### **ABSTRACT**

In the past ten years, many have criticized psychology for its single-minded focus on problems and mental illness rather than mental health and wellbeing. The focus on positive emotions is a result of a shift in psychological research toward positive psychology. Emotional issues in organizations have been largely neglected in management literature, but recently, an academic interest in emotions in the workplace has been encouraged. During the past few years several approaches within positive psychology focusing on worklife have emerged, for example, positive organizational behavior, positive organizational scholarship, and psychological capital. In this chapter we present some definitions and recognized taxonomies in the field of emotions and how positive emotions, with reference to empirical research, may affect work behavior and adaptation, and how stimulating positive emotions in the workplace through a framework of positive organizational behavior (POB) may enhance individual adaptation and performance, and organizational effectiveness. The research evidence reviewed in this chapter clearly suggests that the frequent experience of positive emotions is related to a wide range of work-related behaviors. Positive emotions such as joy, interest and contentment broaden the individual's thought-action repertoire, and in the long run, this will build a person's enduring personal resources (Fredrickson, 2004). The newly emerging approach of POB has provided a framework for studying the individual psychological capital - state-like but enduring personal resources (hope, optimism, self-efficacy and resilience) that may help adaptation to work and coping with workplace demands (Luthans, 2002). POB is an important theoretical contribution to the research literature on adaptation, health and well-being at work because of its focus on employee capabilities that can be changed and developed. Within such an approach, we also suggest various specific interventions that may be used to promote positive emotions and adaptation. The negative aspects of worklife have received too much attention, at the cost

of the positive aspects. One should therefore aim for a balance where positive states, traits and processes are studied to a greater extent than what has been done so far, but not at the cost of the negative. There is still a need to learn more about both positive and negative aspects of the job separately, but also what happens when positive and negative events coexist and how they interact. We would therefore support an integrated approach including both perspectives.

## INTRODUCTION

Emotional issues in organizations were largely neglected in the social sciences until around 1990, and particularly so in management literature, probably due to a rational-cognitive approach to the issue of organization and behavior (Fineman, 2003; Putnam & Mumby, 1993). However, an academic interest in emotions in the workplace has been encouraged by a more general attention to mood and affect in social psychology and biological psychology (see Lewis & Haviland-Jones, 2000), moving the interest in emotions solidly into the organizations as well (Ashkanasy, Härtel & Daus, 2002). Contrary to the prevailing views in the field of organization behavior, Fineman (1993) has labeled organizations ‘emotional arenas’, underlining the important role emotions play in all interactions at work. In fact, emotions are woven into our interactions with others, and they regulate our social affairs in a number of different ways.

The focus on positive emotions is a result of a shift in psychological research toward positive psychology. As early as 1954, Maslow introduced the concept of positive psychology and argued that future research should focus on psychological constructs such as growth, optimism, spontaneity, courage, acceptance, humility, kindness, and actualizing of potential (Maslow, 1954). In the past ten years, many have criticized psychology for its single-minded focus on problems and mental illness rather than mental health and wellbeing (see Bakker & Schaufeli, 2008; Seligman & Csikszentmihalyi, 2000). This problem-oriented approach is illustrated by the fact that the number of publications about negative questions outnumbers publications with a positive focus at a ratio of 14:1 (Myers, 2000). During the past few years several approaches within positive psychology have emerged, for example, positive organizational behavior (POB), positive organizational scholarship (POS), and psychological capital (PsyCap).

Positive psychology is defined as a science of positive subjective experiences (Nelson & Cooper, 2007), which is in contrast to the traditional negative focus within psychology. The goal of positive psychology is to shift our outlook toward the positive side of human behavior, by focusing on strengths, adaptation, development of health, wellbeing, prosperity, and the good life (Seligman & Csikszentmihalyi, 2000). However, in contrast to the many feel-good approaches that appear from time to time, positive psychology is firmly grounded in theory and research, and thus the constructs are tested before the theory can be applied in practice (Luthans, 2002). As such, positive organizational behavior represents a newly emerging and promising research area with focus on a positive approach to developing and managing human resources (Luthans, Avolio, Avey, & Norman, 2007).

There are also other subgroups of positive psychology that, like POB, concern organizations and working life. Positive organizational scholarship is one such area that focuses on what is virtuous in organizations, including an emphasis on identifying human

strengths, producing courage, enhancing vitality and cultivating extraordinary individuals (Cameron, Dutton, & Quinn, 2003). However, POS is mainly directed toward the macro level, not the individual and/or group level, and therefore it is differentiated from both POB and positive psychology. Similarly to POB, but unlike positive psychology, POS limits its focus to the workplace.

It is well established that positive emotions have an effect on a wide range of behaviors (e.g., cognitive problem solving, scope of attentions) and thought patterns which are unusual, flexible, creative and receptive (Fredrickson, 2004). There is also empirical evidence that supports the adaptive value of positive affect in promoting resilience and successful adaptation to work stress (Gloria, Faulk, & Steinhardt, 2013). In this chapter we will present some definitions and recognized taxonomies in the field of emotions, how positive emotions, with reference to empirical research, may affect work behavior and adaptation, and how stimulating positive emotions in the workplace, through a framework of positive organizational behavior, may enhance individual adaptation and performance, and organizational effectiveness.

## DEFINITIONS AND TYPES OF EMOTIONS

Emotions are specific reactions to particular events, comprising several components, such as an experiential feeling, cognitions and physiological reactions, which again may have important behavioral implications (Stanley & Burrows, 2001). Emotions direct attention to events, thoughts or stimuli and organize perceptual and thought processes, activating and motivating most aspects of human behavior (Vie, Glasø & Einarsen, 2012). Moreover, manifestations of discrete emotions may be seen as critical and vital signs that provide essential information about an individual's health and well-being (Spielberger & Reheiser, 2009), as well as how they perceive and, accordingly, react to their environment. Although there are numerous definitions of emotions, most refer to 'a feeling and its distinctive thoughts, physiological and biological states and a range of propensities to act' (Goleman, 1995).

Emotions may be distinguished from moods. Whereas moods are typically slow-changing, moderate in intensity, and do not necessarily relate to any particular thing, discrete emotions are more intense, change more rapidly, and are directed at something specific, such as an event or ongoing situation (see Briner, 1999); for instance, the anger or shame evoked in a subordinate when criticized by a superior; or the feeling of being valued, appreciated, or respected by colleagues.

### Emotion Taxonomies

Specific emotions are typically classified into categories based on a variety of aspects. The concept of primary emotions builds on the notion that there exist different "emotional cores" which are surrounded by closely related emotions. On a general level, Goleman (1995) describes eight primary emotions and their most frequently co-occurring secondary emotions: *anger* with rage, upset, annoyance, wrath, and hostility; *sadness* with grief, mourning,

melancholy, and loneliness; *fear* with anxiety, nervousness, and worrying; *pleasure* with happiness, joy, relief, and pride; *love* with admiration, acceptance, respect, and being in love; *surprise* with shock, and amazement; *disgust* with aversion, dislike, detestation, and hate; and *shame* with guilt, embarrassment, and pity.

Lazarus (1999) proposed a different classification system which consists of emotion families and their members: The *nasty emotions* such as anger, envy and jealousy; the *existential emotions* such as anxiety-fright, guilt and shame; the *empathic emotions* such as gratitude and compassion; and *emotions provoked by favorable life conditions* such as happiness-joy, pride and love (see also Lazarus & Cohen-Charash, 2002).

## Positive Emotions, Negative Emotions or Both?

Emotions may be experienced as positive (PA) or negative (NA). PA comprises basically positive feelings such as being *enthusiastic*, *active* and *alert*. NA, on the other hand, includes basically negative feelings, such as feeling *upset* or being *unpleasantly aroused* (Watson, Clarke, & Tellegen, 1988). Findings indicate that these two factors relate to different classes of variables: PA (but not NA) is related to social activity and satisfaction and to the frequency of pleasant events, while NA (but not PA) is related to self-reported stress and poor coping, health complaints, and frequency of unpleasant events (Watson et al., 1988).

Historically, more effort has been devoted to negative emotions at work (job dissatisfaction, intent to quit), negative emotions in general (e.g., depression) and negative workplace experiences (e.g., high levels of job demands and workplace stressors). Today, most researchers see well-being as including emotional and physical well-being, with well-being including positive emotions and states of optimal functioning and not just the absence of illness (Cameron et al., 2003). Pfeffer (2010) uses the term “human sustainability” to refer to the ability and capacity of humans to endure and remain productive over time, a key element in the capacity and ability of organisms to continue to successfully exist in their natural environment.

Fredrickson (2004) has developed the broaden-and-build theory of positive emotions, a theory that proposes that positive emotions produce optimal functioning, both in the present and over the long-term. Contrary to the idea that certain emotions are related to specific actions, which has been the predominant assumption when it comes to negative emotions, (for example, anger with the wish to attack, fear with the wish to escape) (Fredrickson, 2004), the broaden-and-build theory focuses on positive emotions and their ability to broaden peoples’ momentary thought-action repertoire and build their enduring personal resources (Fredrickson, 2001, 2004). Examples of positive emotions are joy, interest, contentment, love, pride and gratitude, among others. Each of these opens up several ways that positive emotions broaden habitual modes of thinking and acting. Through experiences of these positive emotions, “people transform themselves, becoming more creative, more knowledgeable, socially integrated and healthy individuals” (Fredrickson, 2004, p. 1369).

There is ample research evidence that positive emotions are related to unusual, flexible, creative, and integrative thought patterns (Isen, 1987). Fredrickson (2004) also refers to experiments in which the participants exposed to positive emotions identified more things they would like to do, compared to those exposed to negative emotions and a neutral control group. Other experiments also indicated that people who experience positive emotions

showed evidence of broadened thinking as well as high psychological resilience (Fredrickson, 2004). The theory also predicts that the experience of positive emotions over time may build psychological resilience, thus making it an enduring personal resource. The experience of positive emotion and the resulting broadened thinking are thought to constitute a complementary and reciprocal upward spiral, which over time will lead to increased emotional well-being.

Everyday decisions, policies, pressure and workplace relationships inevitably trigger some “negative” emotions in employees. However, emotions such as frustration, embarrassment, sadness, anxiety or anger are neither bad nor toxic (Glasø & Vie, 2009). Actually the opposite is sometimes true, because these emotions help us cope with difficult situations. Anxiety is felt when there is a threat to goals that are important to us, while frustration and anger lead to behaviors that are aimed at overcoming obstacles in our way. Also, fear may protect us by urging us to withdraw from a threatening situation (Glasø & Vie, 2009).

## **Emotional State versus Emotional Experiences**

A social interactionistic approach (see Felsen & Tedeschi, 1993) is critical of the view that emotions are “pushed out” or “compelled” by inner forces, such as aggressive energy, instincts, hormones, or psychodynamic aspects of the person’s personality. Instead, emotions are viewed primarily as consequences and products of a social situation, treating situational and interpersonal factors as critical in instigating emotions. Affective outcomes are therefore not predetermined but are a function of the dynamic interchange that occurs during social interactions. Accordingly, the type, quality and intensity of emotions reflect how the person in question interprets and reacts to ongoing events in his or her environment (Lazarus, 1991; Weiss & Cropanzano, 1996), as exemplified by behaviors and interactions between leaders and subordinates.

In their Affective Events Theory (AET), Weiss and Cropanzano (1996) argue that a range of daily events at work influence peoples’ emotional responses, leading to important outcomes. Aspects of the work environment and specific daily events, such as environmental conditions, roles and job design, systematically determine affective states that again may lead to attitudinal and behavioral outcomes, such as the experience of job satisfaction. Such affective states may lead to spontaneous behavior or may over time accumulate to influence work attitudes such as job satisfaction. Weiss, Nicholas, and Daus (1999) argued that job satisfaction represents a set of attitudes towards work that may or may not include affective feelings. It is such attitudes that subsequently influence cognitively-driven behaviors, such as intention to quit, engaging in pro- or anti-social activities, or conversely, a decision to work productively (Wright & Cropanzano, 1998). AET is thus unique in explicating what happens inside the “black box” between work environment and subsequent employee attitudes and behavior (Ashkanasy, Härtel, & Daus, 2002).

Another significant contributor to how individuals experience and interpret incidents at work is, according to AET, his or her individual dispositions. Aspects of personality may influence the nature of the events themselves. For example, people who present a generally positive demeanor may be more likely to have positive things happen to them, e.g., other people like them and enjoy being around them. Conversely, negative affective expressions

may elicit negative events (Weiss & Kurek, 2003). Magnus, Diener, Fujita, and Pavot (1993) showed, for example, that extraversion significantly predicted the frequency of positive events, whereas neuroticism significantly predicted the frequency of negative events over the next 4 years.

There is also considerable evidence that experiences at work affect the emotions of job incumbents. Recently attention has been devoted to the spread of emotions, a contagion effect, from job incumbents to both others at work and outside individuals, typically family members. Spillover is an intra-individual phenomenon in which emotions at work influence emotions and reactions in extra-work domains such as family and life in general. Crossover is a dyadic inter-individual phenomenon in which emotions at work lead to emotions being experienced by others at work or in one's home and family. Spillover affects an individual; crossover affects other individuals or groups (Westman, 2006). Both spillover and crossover can involve positive as well as negative emotions. Thus enhancing positive emotions of women and men in the workplace can have valuable ripple effects.

## **THE ROLE OF THE LEADER IN PROMOTING POSITIVE EMOTIONS**

Beneath the surface, the issue of emotions and the management of emotions in the workplace have implicitly been at the core of management practice and development. This view has become more explicit and the role of emotions in the leadership process has attracted increasing interest; most probably due to a change of preference concerning leadership styles from a hierarchy-oriented manager to the more sensitive relational leader (see Bass, 1990). Goleman, Boyatzis, and McKee (2003) even argue that emotions and emotional intelligence are at the heart of effective leadership. Consistent with this view, George (2000) and Dasborough, and Ashkanasy (2002) claim that leadership is intrinsically an emotional process, where leaders display emotions in order to motivate and influence, and attempt to evoke emotions in their subordinates.

In this respect, Bass (1990) describes the important role that emotions play in contemporary leadership, by contrasting 'transactional' leaders with 'transformational' leaders. While traditional transactional leaders do not give affective experiences much consideration, but rather focus on mutual transactions and the exchange of values between employee and employer, transformational leaders project a vision that the subordinates believe in, they inspire and support the subordinates, and make them feel wanted and valuable to the organization. Hence, transformational leaders in particular appear to use emotion to motivate their subordinates (Ashkanasy & Tse, 2000). Dasborough and Ashkanasy (2002) argued that in order to engage in transformational leadership, leaders need to have a clear emotional self-awareness, to be sensitive to subordinates' emotional needs, and to understand how the subordinates feel. Most importantly, however, they must possess the ability to inspire and arouse their subordinates emotionally. The specific behaviors and skills that are addressed when exerting such influence are often referred to as 'emotional intelligence', which may be defined as the ability to perceive, appraise, and express emotion accurately; the ability to access and generate feelings when they facilitate cognition; the ability to understand affect laden information and make use of emotional knowledge; and the ability to regulate

emotions to promote emotional and intellectual growth and well-being (Salovey, Bedell, Detweiler, & Mayer, 2000).

Emotional experiences may function as a mediator between followers' perceptions of employee-centered leadership and their experiences of job engagement and intention to leave the organization, respectively. The results from a study of Glasø, Notelaers, and Skogstad (2011) showed that the relationships between employee-centered leadership and job engagement, as well as turnover intentions, were fully mediated by the followers' positive emotional experiences. Negative emotional experiences yielded insignificant mediation effects, a finding that may be explained by characteristics of the leadership style studied. The study suggested that followers' emotions bridge the 'gap' between leader behavior and follower attitudinal outcomes and, hence, supports the notion that followers' emotions are essential in the study of effective leadership (Glasø et al., 2011).

## **ARE HAPPY PEOPLE SUCCESSFUL?**

The benefits of frequent positive affect were examined in a thorough review of the literature (Lyubomirsky, King, & Diener, 2005). In a meta-analytic study they investigated whether happy individuals are successful across multiple life domains, including marriage, friendship, income, work performance, and health. In their final body of literature they gathered cross-sectional, longitudinal, and experimental evidence among 293 samples, comprising over 275,000 participants. In the following we will present some of their findings which have specific relevance to working life. One of research questions of Lyubomirsky et al. (2005) was: Are happy people more successful than their less happy peers on job-related and performance variables?

The cross-sectional evidence of their study revealed that happy workers enjoy multiple advantages over their less happy peers. Individuals high in subjective well-being are more likely to secure job interviews, to be evaluated more positively by supervisors once they obtain a job, to show superior performance and productivity, and to handle managerial jobs better. They are also less likely to show counterproductive workplace behavior and job burnout. Furthermore, happy people seem to be more satisfied with their jobs.

Once a happy person obtains a job, he or she is more likely to succeed. Employees high in dispositional positive affect receive relatively more favorable evaluations from supervisors and others (Cropanzano & Wright, 1999; Wright & Staw, 1999). For example, George (1995) found that service departments with happy leaders were more likely to receive high ratings from customers, and that the positive affective tone of the sales force was an independent predictor of customer satisfaction. Positive affect at work has also been found to be directly associated with reduced absenteeism (George, 1989).

According to Lyubomirsky and colleagues' meta-analysis, job satisfaction predicts organizational citizenship behavior, that is, extra role behavior that goes beyond the requirements of the job, such as spreading goodwill and aiding coworkers. Also, positive affect predicts organizational citizenship, whilst negative affect inversely correlates with it. According to George and Brief (1992) a positive affect at work is pivotal in understanding work behavior such as helping coworkers, protecting the organization, making constructive suggestions, and developing one's own abilities within the organization.

In their study, Lyubomirsky et al. (2005) also asked the following question: Are happy people or those experiencing pleasant moods superior at resolving conflict? According to the researchers, the only study to examine conflict resolution in happy people was an investigation of the CEOs of 62 U.S. companies and their top managers. The results of this study revealed that work groups whose members were high in average trait PA were less likely to experience conflict and more likely to cooperate (Barsade, Ward, Turner, & Sonnenfeld, 2000). Furthermore, a correlational study of PA - also conducted in a work setting - found that the experience of particular positive emotions at the office is related to reduced conflict with colleagues (Van Katwyk, Fox, Spector, & Kelloway, 2000).

The experimental results in the Lyubomirsky and colleagues' meta study supported the argument that pleasant moods increase people's abilities to resolve conflicts. One study showed that people with positive affect showed a decreased preference for resolving conflict through avoidance and an increased preference for reducing conflict through collaboration. Another study found that an induced positive mood had a beneficial influence on bargaining across a variety of negotiation tasks, with individuals in pleasant moods revealing a marked tendency to be more cooperative and less competitive.

In reviewing the cross-sectional research on prosocial behavior, Lyubomirsky et al. (2005) addressed the question whether happy people, as well as those experiencing pleasant moods, are inclined to be more altruistic, generous, and charitable people. The results are supportive of such a notion because individuals who scored high on happiness or trait PA showed a relatively greater interest in helping people, a tendency to act in a prosocial or cooperative manner, and intentions to perform specific altruistic, courteous, or conscientious behaviors at work. Furthermore, students high in trait PA reported spending a relatively greater percentage of their time helping others.

Lyubomirsky and colleagues reported that research with working adults has shown similar effects. For example, positive affect experienced at work has been related to intentions to perform behaviors that are beyond the call of duty. Positive moods experienced at work have also been related to actual prosocial organizational behavior. Even after controlling for dispositional affect, positive affect in salespeople predicted more helping of customers and more customer service, as well as more extra-role prosocial behavior on the job (George, 1991). According to Lyubomirsky and colleagues, cross-sectional investigations suggest that happy people tend to be kind and charitable people. Happy and altruistic people will be liked more, will profit more from future social interactions (i.e., through the norm of reciprocity), and will have stronger and more supportive social networks.

Still another question raised in the Lyubomirsky et al. (2005) study is whether happiness precedes success or not. According to their review there exist robust correlations between happiness, as well as short-term positive affect, and numerous indicators of culturally valued success, including successful outcomes in work, relationships, and health. However, since these observed correlations offer only preliminary evidence that a causal relationship might exist between happiness and success, the researchers also investigated longitudinal studies and found support in the notion that long-term happiness and short-term positive moods might actually cause the outcomes with which they correlated (see Lyubomirsky et al., 2005, p. 814 and p. 821). A few longitudinal studies substantiating the correlational literature linking together happiness and desirable work outcomes shall be mentioned in the following.

For example, people with high subjective well-being who are interviewing for a job are relatively more likely to receive a callback second interview 3 months later (Burger &



Caldwell, 2000). Another study by Roberts, Caspi, and Moffitt (2003) is instructive regarding the causal direction between happiness and work outcomes because measures of positive affect were collected at age 18 and the work outcomes were assessed at age 26. Positive affectivity measured in early adulthood predicted outcomes such as financial independence, occupational attainment, and work autonomy eight years later. However, positive job characteristics also led to increases in positive affect, suggesting a bidirectional influence.

Furthermore, Verkley, and Stolk (1989) found that people who were happy were less likely to lose their jobs in the ensuing period. Additionally, unemployed individuals with high subjective wellbeing were more likely to be reemployed at follow-up than unhappy people. Once employed, those who show high positive affect on the job received relatively more favorable evaluations from supervisors - for example, for quality of work, productivity, and dependability - a year and a half later (Staw, Sutton, & Pelled, 1994). Happy people have also been shown to receive higher supervisory ratings over time in other studies (Cropanzano & Wright, 1999; Wright & Staw, 1999).

Happy employees were rated by their administrative officers as superior up to 3.5 years later in the four dimensions of support, work facilitation, goal emphasis, and team building (Wright & Staw, 1999). Positive affect on the job has also been found to predict reduced absenteeism 5 months later (Pelled & Xin, 1999). Finally, a construct related to positive affect, dispositional optimism, predicted the success of life insurance agents (Seligman & Schulman, 1986).

According to Lyubomirsky and colleagues, a sizable experimental literature offered strong evidence that short-term positive affect - the hallmark of a happy person - causes a range of behaviors paralleling success. The researchers claim that these data suggest that positive affect may very well be the critical mediator underlying the relationship between happiness and culturally valued success. Hence they argue that their review provides strong, albeit not conclusive, evidence that happiness may, in many cases, lead to successful outcomes, rather than merely following from them. In sum, the evidence suggests that positive affect may be the cause of many of the desirable characteristics, resources, and successes correlated with happiness.

## POSITIVE EMOTION AND ADAPTATION

Adaptation to the demands of modern worklife seems to be greatly improved with the experience of positive emotions. Fredrickson (2000) has suggested that intervention strategies that cultivate positive emotions will be useful in preventing problems rooted in negative emotions, such as anxiety, depression, aggression and stress-related health problems. She maintains that positive emotions such as joy, interest and contentment, broaden the individual's thought-action repertoire, and in the long run, this will build a person's enduring personal resources. By broadening a person's thought-action repertoire, positive emotions therefore have the effect of undoing negative emotions and the restrictions on behavioral choices (Fredrickson, 2000).

Gloria et al. (2013) did a study of public school teachers to see whether positive affect could predict successful (resilience) and unsuccessful (burnout) adaptation to stress. They investigated 267 teachers and tested survey data through regression analyses, controlling for

demographic characteristics and work stress. They found that positive affect had a direct positive relationship with both resilience and burnout, and explained 37% and 14% of the variances respectively (Gloria et al., 2013). There were no significant interaction effects between work stress and positive affect, but the results indicated that positive affect completely mediated the relationship between work stress and resilience. In other words, high positive affect will enable workers to deal with high work stress in a constructive way, to thrive despite high demands, and to perceive a challenge, make a commitment and take control in the face of high work demands. The results supported the 'broaden and build' theory of positive emotions, and suggest that experiences of positive emotions build cognitive and behavioral resilience resources, which help workers to manage stress more effectively and adaptively cope with stressful demands (Gloria et al., 2013). Contrary to what was hypothesized, the relationship between work stress and burnout was not dependent on workers' positive affect, but while work stress seemed to be associated with higher burnout, positive emotions showed the opposite relationship with burnout, suggesting that it may have a restorative effect on teacher burnout (Gloria et al., 2013). In another study it was found that self-efficacy, defined as a strong sense of competence (Schwarzer & Hallum, 2008), constitutes a personal resource factor that seems to protect against the experience of job stress. This in turn was found to be related to lower burnout among teachers, especially younger teachers.

Positive affect brought about by an intervention targeting positive emotions and thought, were shown to reduce test anxiety among college students (Nelson & Knight, 2010). In an experiment students were randomly assigned to two writing tasks, one in which they were asked to describe a situation where they mastered a challenge and felt joy, pride and elation, and one in which they were asked to write about their morning routines. The students in the positive thought task experienced higher positive affect, more optimism and lower test anxiety than the students in the control condition (Nelson & Knight, 2010). This is an example of a simple intervention which enhanced student coping with college stressors, thus suggesting that situational cues may override dispositional tendencies when it comes to the experience of positive affect. High positive affect and optimism, and low negative affect and test anxiety was associated with favorable appraisals of the test and subsequent test performance (Nelson & Knight, 2010).

In an effort to define mental health in positive terms rather than the absence of mental illness, Keyes (2002) introduced the concept of flourishing or to live within an optimal range of human functioning as an indicator of mental health. The absence of mental health (rather than pathology) was described as languishing, a disorder experienced by people who describe their lives as hollow or empty. Keyes (2002) found that among adults participating in a large US population study, those who were diagnosed with the presence of mental health (or flourishing) were considerably less at risk for depression, than those diagnosed with the absence of mental health (or languishing). Flourishing and moderate mental health were associated with reports of the best emotional health, the fewest days of work loss and work cutbacks, and they showed superior psychosocial functioning. A study by Fredrickson and Losada (2005), found that over a period of a month, the mean ratio of positive to negative affect was much higher for individuals classified as flourishing than for individuals classified as not flourishing.

Fredrickson and Joiner (2002) proposed that positive emotions not only feel good in the present, but also increase the likelihood of feeling good in the future. They tested the

prediction that positive emotions trigger upward spirals of enhanced emotional well-being. Based on the broaden-and build theory of positive emotions, they argued that since positive emotions broaden attention and cognition, they produce patterns of thought that are unusual, flexible and creative (Fredrickson & Joiner, 2002). This in turn should make people better able to cope with adversity, and improved coping should predict future experiences of positive emotions. They tested this prediction in a sample of 138 college students, measuring positive and negative affect and coping five weeks apart. They found that positive affect led to enhanced broad-minded coping, and that broad-minded coping predicted increased positive emotions over time. In other words, positive emotions triggered upward spirals toward emotional well-being (Fredrickson & Joiner, 2002).

Recently the core construct of psychological capital (PsyCap) (Luthans et al., 2007) has received attention as a positive resource to combat employee stress. PsyCap may be a key factor in understanding how employees perceive job demands leading to stress, as well as the impact of stress on various work outcomes (Avey, Luthans, & Jensen, 2009). Avey et al. (2009) suggested that human resource development strategies aimed at increasing overall PsyCap, consisting of efficacy, optimism, hope and resilience, might reduce perceptions of stress symptoms and also limit subsequent turnover.

Lazarus argued early on that people experience stress when they lack the resources to deal with difficult events (Lazarus, 2003). Stress was defined as a complex transaction between environmental demands, and intervening variables such as cognitive appraisal and coping. While he emphasized that there is considerable value in understanding how people deal with the negative events in their lives, he also suggested that efficacy, optimism, hope and resilience may be relevant mechanisms for understanding how people adapt to their everyday environment (Lazarus, 2003).

In a study of 416 working adults from various professions, the relationship between PsyCap, stress symptoms, intentions to quit and reported job search behaviors was investigated (Avey et al., 2009). Measures of PsyCap and demographics were obtained first, and a couple of weeks later, the participants completed a second survey consisting of measures of stress symptoms, intention to quit and job search behaviors. The results indicated negative relationships between positive PsyCap and stress symptoms, intentions to quit and job search behaviors. In addition, stress symptoms partly mediated the relationship between PsyCap and intention to quit and between PsyCap and job search behaviors (Avey et al., 2009).

The research on positive affect and PsyCap has already contributed much to our understanding of adaptation to the demands of everyday work life. The key mechanisms would seem to be to strengthen employees' personal resources at work. Intervention strategies that cultivate positive emotions such as joy, interest and contentment will likely counteract negative emotions and optimize health and wellbeing, also in a work setting. Fredrickson (2000) reviewed a number of intervention strategies aimed at increasing rates of pleasant activities, teaching optimism and increasing coping, and suggests that such interventions, because they broaden people's thought-action repertoire, will have the effect of building a person's enduring resources. In a work setting it is important to stimulate and train employees' PsyCap, and thus increase enduring resources through principles of positive organizational behavior.

## **POSITIVE ORGANIZATIONAL BEHAVIOR AS A MODEL TO PROMOTE POSITIVE EMOTIONS AT WORK**

Most leaders agree that the employees constitute a critical factor when it comes to innovation, organizational performance, competitiveness and the success of the company. However, in many companies the understanding of how to improve the organization's results is still rooted in traditional thinking about effectiveness and cost reduction. Positive organizational behavior represents an alternative approach in which the employees' values and motivation is front and center. The question is what organizations can do to attract and keep creative and enthusiastic employees, and what characterizes the working conditions which inspire employees to stay engaged, pull their weight, give a little extra and keep going in the face of obstacles. In today's working world it is expected that employees show initiative, that they collaborate well with others, take responsibility for their own professional development, as well as stay committed to keep a standard of high quality in their work. In order to meet these expectations, employees must feel energetic, enthusiastic and committed about their work. A central concept within POB is therefore job engagement, which is defined as a positive work related state of mind characterized by vigor, dedication and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002).

In POB research the focus of study is on "...the application of positively oriented human resource strengths and psychological capacities that can be measured, developed and effectively managed for performance improvement in today's workplace" (Luthans, 2002, p. 698). POB is also future oriented and focused on finding new ways of organizing work. The goal is to create workplaces that enhance people's resources and strengths at both individual and group levels. By combining positive psychology with an organizational perspective, the principles of positive psychology become tangible and applicable in working life (Rousseau, 2007). Luthans (2002) has suggested that relevant constructs must meet certain well-defined criteria in order to be included as a POB construct. The most important criterion is that the construct must reflect a capacity for positive results, for example more joy, life satisfaction and wellbeing, in addition to performance improvements. The constructs must also be measurable and flexible. Based on these criteria Luthans suggests four core constructs: Hope, optimism, self-efficacy and resilience. Each of these represents a positive psychological capacity which taken together constitutes an individual's psychological capital (PsyCap).

PsyCap has been defined as "an individual's positive psychological state of development and is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering towards goals and when necessary redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success" (Luthans et al., 2007, p. 542).

The criterion of performance improvement is perhaps what most differentiates POB from positive psychology and other positively oriented concepts of organizational behavior (Luthans, 2002). Even if there are many similarities, POB differs by mainly focusing on psychological resources and capacities which are state-like, which means that these capacities and resources are viewed as being susceptible to change and development (Avolio & Luthans, 2006). An important implication of this is that positive organizational behavior may be

learned, developed and changed. This may be accomplished through training programs inside or outside the work situation, and by self-development. The other directions within positive psychology describe predisposed, stable personality traits which develop over time, and which only may change through long-term professional interventions and intensive treatment (Linley & Joseph, 2004; Peterson & Seligman, 2004). These more stable personality characteristics are not easily influenced by change processes, short deadlines and limited financial resources which characterize today's workplace. The other positive approaches may therefore create an impression of defeatism. With its emphasis on theory, valid measurement and scientific research, POB is also differentiated from the increasing number of popular bestsellers that share the interest for positivity, but which are lacking in theory, measurement and empirical support.

In addition to being theory and research based and emphasizing performance improvements, the personal and social context is very important in POB. What is positive for one individual may be perceived as negative for another (Nelson & Cooper, 2007). Growth is a central aspect of POB, and is defined as a psychological condition in which an individual experiences a feeling of both vitality and learning in their work (Spreitzer, Sutcliffe, Dutton, Sonenschein, & Grant, 2005). This type of growth is related to important individual and organizational outcomes, for example learning and new forms of problem solving. The consequence of using a POB perspective in the organization is that one will see organizational leadership and decision making in a new and more positive light. At the same time, one has to change the focus from negative to positive emotions. According to Ashkanasy and Ashton-James (2007) members of an organization characterized by a positive climate may expect to work in teams with a close collaboration, where positive emotions transfer from the leader to members and between members, and where this positive affect may create conditions that promote further positive behavior (Fredrickson, 2001, 2004).

Research within POB has focused on cognitive capacity, e.g., creativity and knowledge, as well as emotional capacity, such as job engagement and humor. In addition, studies have focused on states such as self-efficacy, optimism, hope and other personal resources which are useful for dealing with organizational demands and increasing performance (Bakker & Schaufeli, 2008). Wright (2003) argued that POB also must include the study of employees' happiness and health. This view is supported by Zwetsloot and Pot (2004), who maintain that employees' health and well-being at work should be considered as an organizational value of strategic importance. They argued that health and wellbeing at work must be regarded as an investment in the employees, which in turn provides direct financial gain for the company, rather than viewing employees' needs as unnecessary costs. An illustration of this point is provided in a study of 60 management groups (Fredrickson & Losada, 2005), which indicated that positive social interaction and expressed support among members differentiated between well performing and poor performing teams. The researchers identified fifteen teams which produced high financial results, had high customer satisfaction and scored high on 360 degree evaluations by superiors, colleagues and subordinates. These teams were characterized by a positive style of communication which expressed support, motivation and recognition. Sixteen other teams with "mixed" verbal communication performed at an average level, while 19 teams that were characterized by negative verbal interaction expressed by dissatisfaction, cynicism and sarcasm, performed most poorly. Successful teams expressed more positive feelings and a wider scope of ideas and initiative, while the teams with average or poor performance were more reserved when it came to showing feelings and expressing ideas. The

teams that performed most poorly showed little creativity, flexibility and had a generally negative outlook on life (Fredrickson & Losada, 2005).

Another study (Youssef & Luthans, 2007) investigated the relationship between hope, optimism and resilience, and organizational commitment. Outcome variables such as employee performance, job satisfaction and engagement were also included. The results showed that hope and resilience were positively related to organizational commitment, and that hope, optimism and resilience were all related to job satisfaction and engagement. Only hope was significantly related to work performance. From a practical point of view it is important to document that POB has a positive effect on the company's bottom line. Results from new empirical studies indicate that psychological wellbeing moderates the relationship between job satisfaction and work performance, in other words, employees perform best when they score highly on both job satisfaction and wellbeing. The same interaction was related to employee turnover, which has practical consequences for companies. An employee who experiences high job satisfaction and wellbeing seems to have low intent to quit his/her job (Luthans & Youssef, 2007). Investing in the employees' wellbeing and job satisfaction may in other words help secure that the company does not lose valuable employees.

Recently Lilius et al. (2008) looked at the consequences of showing compassion in the workplace, based on people's fundamental needs for relatedness and belonging. They found that certain experiences at work were associated with the experience of being valued and cared for as well as the feeling of relatedness and commitment to the organization. An interesting finding was that the experience of being shown compassion from colleagues when experiencing problems was perceived as an expression of organizational values, which contributed to employees feeling support, not only from colleagues, but from the whole organization. This study opens a deeper understanding of the dynamics that create positive conditions in organizations. The focus on experienced compassion at work shows how seemingly small, but friendly acts may contribute to positive results.

Muse, Harris, Giles, and Feild (2008) used data from two organizations to study the association between POB and fringe benefits in the workplace. Examples of such benefits are assignment of daycare and having a flexible time schedule, health insurance and possibilities for physical exercise. With a basis in social exchange theory and the norm of reciprocity, Muse et al. (2008) looked at the relationship between the employees' attitudes toward the work-life benefits and work performance. The results showed that the benefits were perceived as a positive exchange between employee and employer. This exchange was positively related to the employees' perception of organizational support, affective commitment and reciprocity in terms of higher level of effort and performance behavior. The findings emphasize the importance of valuing employees and investing in their well-being at work and also in their leisure time. In other words, employers can influence the employees' positive organizational behavior with relatively simple initiatives.

Another study worth mentioning is a study of the concept of PsyCap (Luthans, Norman, Avolio, & Avey, 2008), and whether PsyCap mediates the relationship between a supportive organizational climate and employee performance. The results showed that employees' PsyCap was positively related to performance, satisfaction and commitment, and that a supportive climate was related to employee satisfaction and commitment. Employees who perceive the climate in the organization as supportive are more likely to develop their PsyCap, which subsequently may influence their performance in both service and production type jobs.

Luthans et al. (2007) studied the four components of PsyCap and whether these were associated with the experience of positive emotions, or whether they may be the result of positive emotions. In a validation study of a new PsyCap measure, the authors also investigated the relationship between the four components of PsyCap, both objective and manager rated performance and self-reported job satisfaction in two samples of manufacturing engineers and insurance service employees. The results indicated that PsyCap was positively related to both performance and job satisfaction. The authors concluded that the study adds validity for a core construct that draws on psychological resource theory and the broaden-and-build theory of positive emotions.

## **INTERVENTIONS TO PROMOTE POSITIVE EMOTIONS AND ADAPTATION AT WORK**

Much of the positive psychology literature and the literature from POB emphasize providing support, cultivating positive emotions, and training of enduring psychological resources such as hope, optimism, self-efficacy and resilience. However, few studies focus on specific interventions that may accomplish these goals. In the following we will review some specific interventions which may increase positive emotion and adaptation in the work place.

Interventions can be at different levels - individual, work unit, and total organization. Interventions can also have different targets such as aspects of individual well-being (job satisfaction, work engagement, positive emotions), the work unit (increasing workplace civility) and organizational (increasing retention). Intervention content can also vary including education and training, individual coaching and counseling, data collection and feedback for use in employee problem solving and action planning, team building, and creating a work environment supportive to individual well-being.

Interventions also include both process and context factors. Process factors refer to the ways that an intervention was carried out; which individuals undertook which actions, where, why and to what effect. Context refers to levels of top management support, perceived need for the intervention by individuals involved, and readiness of the unit or organization for change.

### **Increasing Levels of Work Engagement**

Research on antecedents and consequences of work engagement has mushroomed over the past decade (Bakker, Albrecht, & Leiter, 2011). Bakker, Oerlemans, and Ten Brummelhuis (2013) offer seven types of interventions targeted at increasing levels of employee work engagement, each of which has been shown to increase work engagement. These include the following.

- Reducing job demands and increasing employee resources. This may be accomplished through interviews to identify occupation and organization specific job demands and individual resources, which are operationalized into questionnaire scales, which are then used to identify job demands and resources associated with

work engagement. Supervisors and work teams, in a workshop format, then use these data to identify ways of reducing critical job demands and strengthening individual and team resources.

- Job crafting involves having employees redesign their jobs by identifying tasks and job content that will increase the meaning of their work.
- Increasing levels of the personal resource of PsyCap through training may produce increases in levels of work engagement.
- Strength-based interventions that address positive traits reflected in employee thoughts, feelings, and behaviors also have the potential to increase engagement.
- Happiness interventions such as enhancing feelings of gratitude, engaging in acts of kindness, and optimistic thinking has also been shown to have value in this regard.
- Encouraging new ways of working such as increasing flexibility of when employees work, telecommuting options of where they work, and choice of media they use to undertake their work have produced positive gains as well.
- Finally, interventions that make it easier for women and men to integrate work and family by increasing levels of supervisor support, senior executives that model work-family balance, changing organizational culture norms, and encouraging use of relevant work-family policies have been associated with higher levels of work engagement.

## **Increasing Flow at Work**

Csikszentmihalyi (1990) coined the term flow viewing it as a state in which individuals are intensely involved in an activity to the extent that nothing else matters. In flow, the activity seems automatic with action and thought blending into one, concentration on the task is intense, the person feels in control, time seems to fly, and high levels of enjoyment and intrinsic motivation are apparent. He thought that flow was relevant for the workplace and some research has now been undertaken to examine antecedents and consequences of flow at work. Flow is associated with clear goals, a balance between ability level and challenge, feedback on how one is progressing, a sense of personal control, merging with the activity, and a sense that the activity is intrinsically rewarding. Flow yields positive emotions.

Demerouti and Fullagar (2013) examined five interventions that organizations can introduce to increase levels of flow. These included: increasing levels of both challenge in the task at hand and increasing levels of skill of individuals in addressing their tasks, increasing levels of job resources, such as job variety, autonomy, feedback, task identity and task significance, increasing levels of self-efficacy and achievement needs among employees, supporting goal setting by employees, and allowing employees to shape their jobs, termed job crafting (Demerouti & Fullagar, 2013).

## **Increasing Passion at Work**

Some people truly love, or are in love with, their jobs (Hadley, 2008). Hadley, using theories of romantic love, writes that loving a job involves intimacy, passion and intense long



term commitment. Vallerand (2008) views passion as “a strong inclination toward an activity that people like, find important and in which they invest their time and energy” (p. 1). Vallerand, Paquet, Phillippe, and Charest (2010) write that organizations can increase passion by providing employees “with a healthy flexible, and secure working environment, one where their opinion is valued” (p. 193). Furnham (2013) suggests that passion can be fostered by the use of challenging and meaningful goals, giving employees a choice in what they do and what happens, encouraging fun and fantasy, providing feedback to employees to foster competition with themselves and others, encouraging employees to help one another, recognizing employee contributions and accomplishments, and stimulating employee curiosity through change, novelty and challenge.

Since flow, passion and work engagement are highly correlated, it should not be surprising that interventions that address each have some overlap in content and approach.

### **Increasing the Meaning in Work**

Meaningful work is a contributor to employee well-being, and meaning itself is seen as a component of individual well-being. Dimensions of meaningful work have been identified (e.g., personal accomplishment, intrinsic rewards such as autonomy, variety and task identity, feelings of control, support of supervisors and co-workers), and measures of these dimensions have been developed and validated. Redesigning work to provide more meaning has a long history in organizational behavior (Hackman & Oldham, 1980). Fairlie (2013) offers several ideas on how meaning in work can be increased. First, work can be measured using surveys and discussed with individuals and their work teams. Second, employees can understand those aspects of meaningful work they are experiencing and those that they are not. Third, employees can take part in activities that add meaning to their jobs (Wrzesniewski & Dutton, 2001). Fourth, supervisors can be trained to display more behaviors associated with higher levels of work meaning.

### **Increasing Well-Being through Employee Training and Development**

Flint-Taylor and Robertson (2013) review literature showing that resilience training not only improves employee mood and well-being it also improves job performance. Resilience training, in part, has benefits as it helps individuals cope more effectively with challenges in their workplace.

### **Increasing Workplace Civility**

Workplace incivility in the form of rudeness and bullying seems to have increased in most workplaces over the past two decades. Porath and Pearson (2013) found that 89% of professionals in the US reported they had been insulted or bullied at work and 78% said their organizational commitment declined as a result. Workplace incivility affects individuals, their families, environments in work units, and organizational success.

Leiter, Laschinger, Day, and Oore (2011) undertook a data gathering and intervention project in 45 hospitals designed to increase workplace civility, called CREW, the Civility, Respect and Engagement at Work project. First, employees rated the civility and support of managers and co-workers. Then trained staff met with groups of employees in half-hour long sessions to go over and discuss issues that were identified. Employees met weekly to discuss issues identified in the survey and how these affected their work. Emphasis was placed on identifying ways they now wanted to interact with each other. Civil behaviors were identified and included paying more attention to others, acknowledging, listening, being considerate, and giving praise. A civility workshop was developed that support nursing staff to think before acting, and consider how words and actions affected others. Ongoing reminders from senior management, the development of civility policies with spelled out accountabilities, and efforts to monitor these policies were indicated. A follow-up survey showed a drop in levels of perceived stress by 15% in groups that undertook the CREW program compared to groups that did not, a 10% increase in perceptions that nursing supervisors now behaved more civilly, and that team members treated one another with more respect, while reports of co-worker incivility dropped by 30% and absences dropped by 15%. Other intervention efforts to increase civility also reported benefits (Leiter, Day, Oore, & Laschinger, 2012).

## **Corporate Wellness Programs**

Although corporate wellness programs are more common in North America, they are increasingly being introduced in Europe and the UK. Corporate wellness programs are long-term organizational activities designed to promote the adoption of organizational practices and person behavior conducive to improving individual employee physiological, mental and social well-being (Wolfe & Parker, 1994). Berry, Mirabito, and Baun (2011) define a corporate wellness program as “an organized employer-sponsored program that is designed to support employees (and sometimes their families) as they adopt and sustain behaviors that reduce health risks, improve quality of life, enhance personal effectiveness, and benefit the organization’s bottom line”. Healthy individuals contribute to an organization’s health, and healthy organizations contribute to employee health.

The most common goals of corporate wellness programs are to improve employee health and well-being, improve work engagement, reduce preventable diseases and reduce health care costs. Most organizations that have introduced corporate wellness programs however, report that they were primarily interested in increasing employee work engagement, job satisfaction and morale, and higher levels of organizational performance. In addition, as employees commit to behavior change that improves their mental and physical well-being, these efforts can spill over to other family members. Corporate wellness programs are more common in large than small organizations, but some small organizations have implemented them as well. Common corporate wellness program offerings include smoking cessation programs, gym memberships and on-site exercise facilities, weight loss programs, access to personal health coaches, and nutrition classes.

Efforts have been made to evaluate and document the benefits of corporate wellness programs, however, evaluation research poses significant challenges and some evaluation studies have research limitations. Organizations that have adopted corporate wellness programs almost always report positive experiences. Isaac and Ratzan (2013) summarize the

development and benefits of a corporate wellness program undertaken by Johnson and Johnson. They found that for every dollar invested in wellness, Johnson and Johnson reported a reduction of nearly \$4 in reduced health care costs, lower absenteeism and improved productivity. Parks and Steelman (2008) undertook a meta-analysis of seventeen evaluation studies and reported that participation in a corporate wellness program decreased absenteeism and increased job satisfaction.

## **Individual - and Organizational - Level Interventions**

We believe that conducting and evaluating more interventions to increase positive emotions at work and in the family are warranted. Both individual and workplace factors are associated with individual mental and physical health. Distress spills over to other individuals, both at work and outside of work. We now have a greater understanding of actual benefits to individuals, their families, and their workplaces following interventions designed to address particular health and well-being outcomes. But bringing about successful outcomes is challenging. We are developing a greater understanding of factors associated with their successes. Thus there is a need to highlight interventions that have worked and why they were successful as well as learning from our failures. Interventions need to be monitored, and invigorated to prevent “fadeout”, and evaluated.

Karanika-Murray, Biron, and Cooper, (2012) noted several characteristics of successful organizational-level interventions: they integrated and combined individual and organizational-level actions with primary, secondary and tertiary emphases across all organizational levels; they used multi-disciplinary approaches; they were heavily participative; they used a well developed implementation framework; they assessed the needs of the organization and its employees with solutions tailored to specific contexts; they tied solutions to the day-to-day business practices; they used external factors to support and drive the necessary change; and they used clear, simple concepts and definitions to support both the implementation and evaluation of the intervention efforts.

## **CONCLUSION**

The research evidence reviewed in this chapter clearly suggests that the frequent experience of positive emotions is related to a wide range of work-related behaviors. The shift in organizational research toward a focus toward positive constructs such as growth, optimism, courage, acceptance, virtuousness, humility, and kindness, is not altogether new. As early as 1954 Maslow introduced the concept of positive organizational psychology, but the prevailing approach until very recently has been the problem-oriented approach.

To demonstrate that POB does not represent just filling old wine in new bottles, it needs to have unique constructs and ideas. Luthans (2002) concepts of self-efficacy, optimism, hope and resilience seem to meet these criteria. A self-efficacious person will be more likely to take challenging tasks, make more of an effort and feel more motivated to finish tasks than a person who is not self-efficacious. A self-efficacious and confident person will also contribute more when there are difficulties or problems. Self-efficacy can be developed, both

in leaders and employees, for specific tasks in any given situation (Luthans, 2002). Many researchers will agree that these four constructs meet the criteria for representing a person's psychological capacities, although there has been some disagreement about the measurement of these constructs (Little, Gooty, & Nelson, 2007). However, a study by Luthans et al. (2007) examined the reliability and validity of a new measure of these constructs and found satisfactory psychometric properties.

The newly emerging approach of POB has provided a framework for studying individual psychological capital - state-like but enduring personal resources that may help adaptation to work and coping with workplace demands. POB is an important theoretical contribution to the research literature on adaptation, health and well-being at work because of its focus on employee capabilities that can be changed and developed. The strength of POB is also that it is grounded in theory and research, which can then advise organizations how to train and develop their employees, and thus enhance individual well-being, adaptation, satisfaction and performance, as well as organizational effectiveness.

POB may be criticized for having adopted a too positive view of working life, especially considering regular reports in the media about work conflicts and destructive and unethical leaders. A positive perspective such as POB is not without risk because such an approach may promote a view of human nature that is too optimistic. For example, an overinflated view of oneself and one's own abilities may hinder further development, and an unrealistic optimism may lead to setting too high standards, which may result in defeat. Further, false hope may contribute to misuse of resources and energy, which in turn may harm both employees and the organization. POB has also been criticized for making an artificial separation between positive and negative events in the workplace. Certain positive states, when exaggerated, may lead to negative consequences, and what is considered as positive in one culture may be perceived as the opposite in another culture. It is rare to find situations which are only good or bad, and the fact that these often coexist makes it difficult to infer the causes of measured performance and change (Dess & Robinson, 1984). Based on this, Luthans and Youssef (2007) maintain that there is much to be gained by integrating the various approaches that focus on negative and positive aspects of working life respectively. This may help both researchers and practitioners to gain insight into strengths and weaknesses as well as their interactions and limitations. An integrated approach seems therefore to be necessary for a better understanding of the dynamics behind success and failure in today's worklife.

In line with Lazarus (2003), it is our opinion that the negative aspects of worklife have received too much attention, at the cost of the positive aspects. One should therefore aim for a balance where positive states, traits and processes are studied to a greater extent than what has been done so far, but not at the cost of the negative. For example, Baumeister, Bratslavsky, Finkenauer, and Vohs (2001) have shown that negative events at work have a stronger effect than positive events. There still is a need to learn more about both positive and negative aspects of the job separately, but also what happens when positive and negative events coexist and how they interact. If we take an overall perspective which integrates the positive and negative aspects, much of the criticism directed at positive psychology may be disregarded (Fineman, 2006).

Over 50 years ago, Maslow (1954) wrote that the behavior of the healthy person is less determined by anxiety, fear, insecurity, shame and guilt, and more by truth, logic, justice, reality, and beauty. Maslow and others contributed to the foundation of humanistic psychology, which may be regarded as the predecessor of positive psychology and POB.

Positive psychology gets increasing attention and increasing number of followers, even though the approach also has its critics. We do see a danger in adopting a biased view toward either positive or negative aspects of working life, and would therefore support an integrated approach including both perspectives. An integrated perspective may open up for a better and more balanced understanding of the dynamics behind both success and failure at work. POB, which is founded on Aristotle's centuries old search for eudaimonia (Greek: joy, wellbeing and success), appears to be a promising area within the tradition of positive psychology.

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## **SPORT CONTEXTS**



*Chapter 5*

## **STRESS, EMOTIONS AND ATHLETES' POSITIVE ADAPTATION TO SPORT: CONTRIBUTIONS FROM A TRANSACTIONAL PERSPECTIVE**

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### **ABSTRACT**

Stress is ubiquitous in sport, so understanding the causes and consequences of stress is an important endeavour. This chapter provides theoretical and research evidence for the transactional perspective of adaptation to sport, and is focused chiefly on the emergence of the Theory of Challenge and Threat States in Athletes (TCTSA). The TCTSA not only offers a structure for understanding how athletes react in performance situations, it also provides a framework for stress management with a view to enhancing athletic performance. We provide a historical account of the emergence of the challenge and threat concepts, then we provide a synthesis of the research relating to the TCTSA. This chapter also details a number of stress management strategies informed by the TCTSA, which involve adjustments and alterations to the athletes' environment, or the development of well supported psychological skills. Finally we introduce an effective strategy for promoting adaptation supported by past research and our consulting experience.

Nervousness took over first his mind, and then his body...The contrast between the commanding McIlroy of day three and the disconsolate McIlroy of day four came down to psychology – no more and no less. Between the first and the third day, he had convinced himself he could win; by the fourth, he feared he could not (Viner, 2011, p. 12).

### **INTRODUCTION**

The description of Rory McIlroy's psychological state during the 2011 Masters Golf tournament illustrates the capacity for motivated performance situations, such as sport competition, to generate intense stress, and for that stress to significantly influence skilled

performance. McIlroy was leading the field when he got to the 10th hole on the final day of the 2011 Masters. At the 10th McIlroy pulled his drive into the trees, chipped out of an awkward position for his second shot, but then pulled his third, and his fourth shot was a chip from under the green that rolled back towards him on landing. McIlroy scored seven in total at the 10th, and he dropped from first place to seventh, never regaining his previous form, and finished the round with 80. That McIlroy was able to win the next major golf tournament (the US Open) in such a resounding fashion, shattering the tournament scoring record and winning by eight strokes, illustrates the resilience of skilled performers under stress, and is a testament to the fact that stress is not always detrimental to performance. Sporting competition is stressful (Harrison et al., 2001; Salvador, 2005), and for elite athletes, competitive stress is intensified by the career implications of success and failure, and the scrutiny under which they perform (Jordet, 2009). The following chapter details and explores the notion that stress is a transaction between person and environment where perception plays a vital role, and crucially, that stress can help or hinder human performance depending on this perception.

The core theoretical themes of this chapter stem from the Theory of Challenge and Threat States in Athletes (TCTSA: Jones, Meijen, McCarthy, & Sheffield, 2009), which provides a framework to explore the human psychophysiological approach to motivated performance situations. Broadly, in the TCTSA a challenge state leads to superior performance compared to a threat state, and in our laboratory we have conducted a number of investigations testing the validity of the TCTSA. Our findings along with others' are explored in this chapter to provide a contemporary discussion concerning theoretical and practical developments in understanding how athletes can approach competition either adaptively (challenge state) or maladaptively (threat state). This chapter will first provide a historical account of the study of stress, then major advancements in stress research from cognitive and psychophysiological perspectives are outlined. We then focus on the sport-specific TCTSA. Finally, we outline the practical implications of theory and research for facilitating adaptation under stress.

## **THE STUDY OF STRESS: A BRIEF HISTORY**

The term stress has been used to describe a variety of negative feelings and reactions in response to adverse or taxing situations. Largely, stress has been considered a hindrance to the quality of human life and performance (Cox, 1978), but not all stress is negative. Indeed a certain amount of stress is necessary for survival and stress can be viewed as an adaptive function (Franken, 1994), involving a complex relationship between cognition, neurology, and endocrinology. Specifically, stress reactions attempt to maximise the energy expenditure/mobilisation within an individual, aiding the body in its attempt to meet demanding situations. Some people may experience adverse effects on health and or performance, while others may experience no effects on health and maintain or improve performance.

Crucially, the transactional perspective of stress indicates that stress is a process, or more accurately, a transaction between person and environment where perception plays a vital role. In other words, when an event is perceived positively, negative health and performance consequences can be assuaged. The idea that it is our perception of events that predominantly determines our stress responses is well established, and the success of such cognitive

therapies as Cognitive Behavioural Therapy and Rational Emotive Behaviour Therapy have capitalised on the notion that by altering perceptions one can alter the experience of stress. However, in the context of scientific thought, transactional ideas of stress have only been formalised in the past 50 years or so, inspired by early ideas and philosophies dating back to the ancient Greeks.

Ancient Greek philosophers explained the importance of perception on how humans interact with the external environment, and the effect this may have on the internal environment (the human body). For example, Protagoras (485–411BC) stated that “man is the measure of all things” (Hunt, 1993, p. 16) suggesting that each perception is true for each perceiver. Epictetus (60–120AD) considered that psychological and physical health may be determined by the view which humans take of events, which later helped form the basis of Rational Emotive Behaviour Therapy (Ellis, 1957). It is widely recognised that there was a great dearth in writings concerning the functions of the human mind up until the 17th century, where the writings of Descartes posed important questions about consciousness, and Robert Hooke (Hooke’s Law; Waller, 1705) proposed the analogy that the body is machine-like and is therefore also subject to wear and tear (Cox, 1978). So into stress discourse emerged ideas that stress experienced in human life may have adverse implications, and that just like a machine, the body needs energy to help it withstand this stress. As such, it was presumed that psychological dysfunction stems from depletion of nervous energy, nervous exhaustion, or a weakness of the nervous system, later posited by George Beard (1881). Echoing the mechanistic rules put forth by Hooke and Beard, Claude Bernard (1859) brought homeostatic principles to the fore by suggesting that the body’s internal fluid environment must be fairly constant in response to external changes; if not, illness and death would occur. Further, Bernard posited that external demands cause the overload of the nervous system leading to nervous exhaustion (including anxiety, fatigue, and irrational fears), with stress from the pressures of life now considered the precursor to homeostatic imbalance (Howard & Scott, 1965). It was thought that the occurrence of stress was a sign that an individual had failed to adjust to modern life (Abbott, 2001).

It was Walter Cannon that coined “homeostasis” to describe the relation of the autonomic system to the self-regulation processes (Cannon, 1939), paying tribute to its Greek roots (“homeo” and “stasis” meaning “same” and “steady” in Greek). Broadly, in response to environmental stressors, every external event must be met with an internal reaction to maintain stability, a process operated through the sympathetic arm of the autonomic nervous system (ANS). Two compensatory adjustments that are synonymous with Cannon’s work are flight and fight responses, supposedly developed through evolution for rapid service in the battle for survival (Cannon, 1929). Flight represents fear (to run and escape), and fight represents anger (to be aggressive and attack), instinctively activated in the face of a threat to survival. These two responses account for the efficient mobilisation of mental and physical resources to meet demands through the ANS in conjunction with catecholamines secreted by the adrenal medulla. The body’s needs in both flight and fight are similar (e.g., increased blood flow to the muscles, deepening respiration, pupil dilation), suggesting a typical bodily reaction to demands regardless of the relevance of the stimuli (Cannon, 1915). However, Cannon did not posit what may determine which of the flight or fight responses would be elicited in a given situation, leading to the further development of the flight or fight concept during the 20<sup>th</sup> and 21<sup>st</sup> centuries (Bracha, Ralston, Matsukawa, Williams, & Bracha, 2004).

In the mid-20<sup>th</sup> century Hans Selye developed the General Adaption Syndrome (GAS), suggesting that all stressors or demands deplete the finite adaptive energy of an organism, causing non-specific physiological reactions as an attempt to maintain a steady state (Selye, 1979), reflecting Cannon's homeostasis concept. Over time, the GAS was reconceptualised to include two distinct stress responses; eustress and distress (Selye, 1976). Eustress was framed as stress that enhances human function (physical and mental), associated with positive emotions, and essentially meant good stress. Distress was framed as unhealthy, associated with negative emotions, and emerged when the demands of a situation exceeded the body's capacity to maintain homeostasis. Distress is associated with anxiety, and was considered a reaction to a situation that could not be resolved through coping or adaption. Selye never formally recognised the part cognition plays in stress responses, apart from stating that "stressors, it should be noted, are not exclusively physical in nature" (Selye, 1982, p. 14). With the knowledge gleaned from contemporary research that the same event may produce a particular reaction in one individual and not in another (Cox, 1978), it is possible to see the inaccuracies of some of Selye's postulations regarding a non-specific stress response.

In contrast to Selye, Harold Wolff proposed that stress is the result of the way a situation is perceived (reminiscent of the ancient Greek views), indicating an interaction between the external and the internal environment in response to a demand. Wolff realised that the human response to a perceived demand, supposedly developed through evolution (e.g., Cannon, 1929), is inappropriate and can actually harm survival due to its adverse health implications (Wolff, 1953). Wolff concluded that the "common denominator in psychosomatic illness is the interpretation of an event as threatening" (Wolff, 1950, p. 1090), with the stress response providing an unsuitable protective and homeostatic function (Wolff, 1953). Wolff's most important contribution to the field of stress was the recognition that irrespective of its scale, the potential for a given event to evoke a protective reaction is dependent on its significance to the individual (Wolff, 1950, 1953).

In sum, the transactional perspective that stress, and all its psychophysiological associates, is determined by the perception of an event has been developed over centuries of philosophical thought and scientific endeavour. In more recent times, the transactional perspective has been formalised and studied empirically, and in the next section we provide an empirical background for the main themes of this chapter.

## CONCEPTUAL AND EMPIRICAL FINDINGS

To gain a full understanding of the transactional perspective, we must first begin with the ideas of Richard Lazarus, who was one of the first to formalise the transactional perspective with regards to cognition in stress and emotion research.

### The Work of Lazarus

Lazarus proposed that stress occurs when a particular situation threatens the attainment of some goal, and more importantly, that increases in stress are related to more variability in mental performance (Lazarus, Deese, & Osler, 1952; Lazarus & Eriksen, 1952). That is, some



participants experience a performance improvement while others experience a performance decline. Lazarus realised that there may be a critical point in the amount of stress beyond which disruption occurs (Lazarus & Eriksen, 1952). Moreover, performance disruption may be dependent on an individual's ability (or inability) to cope with stressful situations, which depends on the nature of the cognitive appraisal made regarding the significance of a stressor (Speisman, Lazarus, Mardkott, & Davison, 1964). Put another way, the meaning of an event determines the stress response, not the event alone (Lazarus & Alfert, 1964). To illustrate, Lazarus and Alfert (1964) found that stress responses (measured using skin resistance and heart rate) were attenuated when a film depicting primitive rituals (including footage of surgical procedure) was contextualised as harmless and benign in its introduction.

Lazarus' formative experimental works informed his first formal conception of a comprehensive appraisal theory (Lazarus, 1966). Although the appraisal concept was introduced into emotion research by Arnold (1960), Lazarus elaborated it with regard to stress (Lazarus, 1966; Lazarus & Launier, 1978). Lazarus' theory has had several revisions (Lazarus, 1991; Lazarus & Folkman, 1984; Lazarus & Launier, 1978). In the latest version (Lazarus & Folkman, 1984), stress is considered a relational concept whereby stress refers to a relationship between an individual and an environment mediated by primary and secondary appraisals. Primary appraisal is concerned with whether something occurs that is relevant to the individual's well-being, and secondary appraisal is concerned with an individual's coping options in a given situation. Importantly, particular patterns of primary and secondary appraisal lead to different kinds of stress, namely harm, challenge, and threat (Lazarus & Folkman, 1984). Harm refers to psychological damage that has already occurred, whereas threat and challenge refer to future events relevant to the individual. Challenge occurs when an individual feels confident about mastering situational demands and threat occurs with the anticipation of potentially imminent harm. For example, Lazarus (1991) maintained that for stress to be experienced, there must be some goal relevance to the encounter, goal incongruence must be high (e.g., personal goals thwarted), and ego-involvement must be concentrated on the protection of personal meaning against threats. Challenge is experienced when secondary appraisal indicates that an individual's coping potential is sufficient, thus deeming harm less likely. Therefore, threat is experienced when secondary appraisal indicates that an individual's coping potential is not sufficient, thus deeming harm potentially imminent. Therefore, for Lazarus the constructs of challenge and threat represent two distinct appraisal processes which have implications for stress responding. Lazarus' appraisal theory informed much cognitive psychology research in the mid to late 20th century, and neuroendocrine research conducted separately from Lazarus, further illuminated the variation in individuals' experiences of stress. It is to this research we now turn.

## **Psychophysiological Perspectives**

The notion that there are adaptive and maladaptive ways to respond to stressors is evidenced in neuroendocrine research. Physiological measurements of psychological stress offers insights into the mechanisms through which performance is influenced and health consequences emerge. In particular, much attention has been given to the Sympathetic Adreno Medullary (SAM) system indicated by catecholamine excretion, and Pituitary Adreno

Cortical (PAC) system indicated by cortisol excretion, by numerous investigations led by Scandinavian researchers in the second half of the 20<sup>th</sup> century.

Frankenhaeuser and colleagues have distilled two distinct possible responses to a given stressor. In stressful situations, distressed individual experience negative emotions, excrete cortisol (indexing PAC activity), and experience disrupted performance, while less distressed individuals experience positive emotions, excrete catecholamines (indexing SAM activity) and experience maintained or enhanced performance (Frankenhaeuser, Mellis, Rissler, Bjorkvall, & Patkai, 1968; Lundberg & Frankenhaeuser, 1980). In addition, increases in catecholamines are met with decreases in cortisol, suggesting the dominance of SAM over PAC in situations permitting controllable and self-paced performances (Frankenhaeuser, Lundberg, & Forsman, 1980).

Holger Ursin and colleagues undertook an extensive investigation of behavioural and physiological parameters following repeated exposure to a highly demanding situation (Ursin, Baade, & Levine, 1978). Blood and urine samples were collected from a large number of parachute trainees in the Norwegian Military prior to and after training drills of increasing fear provocation. Initially the trainees jumped from a 12m-high mock tower and slid down a long steel wire, a task that is highly fear provoking for the first several jumps (according to the officials and prior trainees). Ursin et al. highlighted that all physiological variables were significantly higher when fear level was high, with performance improving as fear diminished. Also, upon repeated exposure, all variables, except heart rate, followed the pattern that is referred to as the coping effect, signified by a reduction in activation. This indicated that the situation alone did not stimulate activation, but the subjective evaluation of it. Additionally, two consistent factors emerged through the data; the catecholamine factor and the cortisol factor. The major distinguishing feature between the two factors was that the catecholamine factor was clearly positively associated with successful performance, and the cortisol factor was associated with defence mechanisms and poor performance throughout the training program. Therefore, as well as a better understanding of the coping process, two distinct branches of the stress response were identified, one driven by PAC activation, and one by SAM activation, that related to performance in highly stressful situations.

In effect, two distinct stress responses, one adaptive and one maladaptive, had emerged within psychological research (e.g., Lazarus) and neuroendocrine research (e.g., Frankenhaeuser, Ursin) separately. However, the interaction between psychological and neuroendocrine factors had not yet been formalised into a coherent theoretical framework. Richard Dienstbier (1989) took a theory-driven approach toward explaining the cognitive elements of SAM and PAC reactivity by drawing on Lazarus' (1966) appraisal theory. Drawing from the Scandinavian research and Lazarus' (Lazarus & Folkman, 1984) work, Dienstbier distinguished between challenge and threat responses, referring to two distinct responses to a stressor characterised by cognitive appraisal and associated neuroendocrine activity.

Specifically, an individual's ability to cope is associated with the system through which arousal is elicited. Broadly, SAM activity accompanied by catecholamine release is associated with positive secondary appraisal and positive emotions, representing a challenge response. Therefore, arousal is adaptive if coping resources sufficiently outweigh situational demands. Conversely, PAC activity accompanied by cortisol release represents insufficient coping resources and therefore suggests maladaptive arousal, or a threat response. To explain, in a threat response to an acute stressor (e.g., imminent sporting competition) it is not that

cortisol directly disrupts performance, rather than PAC activity tempers the positive effects of SAM activity. Further, SAM activation is correlated with successful performance, and PAC activation is correlated with unsuccessful performance in research utilising a variety of tasks ranging from the lab to the field (Dienstbier, 1989, 1992). Dienstbier considered the challenge response to be a “toughened” response, where the energy (glucose) needed for successful performance is released into the blood, and can reach the brain efficiently due to decreased vascular resistance and enhanced blood flow. To summarise, a challenge response (toughened) is associated with increased catecholamines, decreased vascular resistance, positive emotions, and successful performance, compared to a threat response, which is associated with increased cortisol, negative emotions, and unsuccessful performance.

## Theories of Challenge and Threat

The BioPsychoSocial (BPS) model of challenge and threat (Blascovich & Mendes, 2000; Blascovich & Tomaka, 1996), built on Dienstbier's work and offers an integrative, interdisciplinary approach to the understanding of the human stress response. The BPS model builds on Lazarus and Folkman's (1984) work and is informed by the work of Obrist (1981) and Dienstbier (1989) in proposing two distinct ways that humans respond to stressors. The BPS model forms the backbone of the TCTSA (Jones et al., 2009) which adopts a transactional approach to understanding athletic performance by proposing a framework for psychological, emotional, and physiological reactions in motivated performance situations.

The TCTSA proposes that in competitive situations athletes can approach their performance either adaptively in a challenge state, or maladaptively in a threat state. At the core of the TCTSA is the notion that some athletes excel in motivated performance situations while others fail to perform, and more specifically, an athlete approaching a competition in a challenge state is more likely to fulfil his or her potential than an athlete approaching a competition in a threat state. The ability to approach performance adaptively is critical for elite athletes, with the inability to do so often a driving factor in long term performance impairments. For example, Ricky Ponting (2012; former captain of the Australia national cricket team between 2004 and 2011) on his retirement stated that “I have put a lot of pressure on myself to perform... I have not been able to deal with it as well of late as I would have liked to. Normally for me when those big moments come around I have been able to find something within and go out and score runs. I have not been able to do that for a while now and that was when the alarm bells started to ring.” The TCTSA offers a framework for understanding why some athletes thrive under pressure while some fail, and ultimately for helping athletes to approach performance adaptively in a challenge state.

In the TCTSA Jones et al. (2009) adopt the idea that a challenge state is experienced when sufficient, or nearly sufficient, resources to meet the demands of a situation are perceived, whereas a threat state is experienced when insufficient resources to meet the demands of a situation are perceived (Blascovich & Mendes, 2000; Blascovich & Tomaka, 1996). Cognitive appraisals can occur consciously and unconsciously (Blascovich & Mendes, 2000). In the TCTSA the demand appraisals comprise perceptions of danger, uncertainty and required effort in a situation, taken from the BPS model. Resource appraisals relate to perceived ability to cope with the demands of a situation. Resource appraisals in the TCTSA are more specific than the resource appraisals put forth in the BPS model (Blascovich &

Mendes, 2000) and comprise three interrelated constructs: self-efficacy, perceptions of control, and goal orientation (Jones et al., 2009). The resource appraisals are extended from the BPS model (Blascovich & Mendes, 2000), the model of adaptive approaches to competition (Skinner & Brewer, 2004), and the model of debilitating and facilitative competitive state anxiety (Jones, 1995). More precisely, self-efficacy is important in all three models, control is important in the BPS model and the model of debilitating and facilitative competitive state anxiety, and goal orientation is important in the model of adaptive approaches to competition. Jones et al. (2009) suggest that high levels of self-efficacy, high perceived control and a focus on approach goals, represent sufficient resources to cope in a motivated performance situation and are therefore indicative of a challenge state. Conversely, low levels of self-efficacy, low perceived control and a focus on avoidance goals, represent insufficient resources to cope in a motivated performance situation and are indicative of a threat state. Crucially, whether an individual perceives sufficient resources to meet demands or not is reflected in two distinct patterns of CV reactivity that distinguish challenge and threat. The TCTSA is shown in Figure 1.

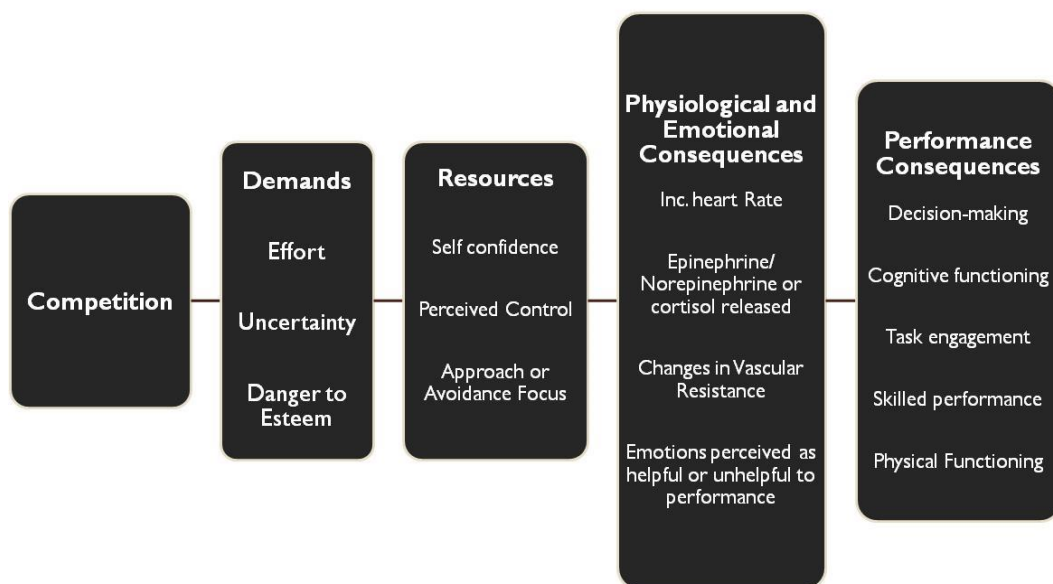


Figure 1. The theory of challenge and threat states in athletes (Jones et al., 2009).

The TCTSA adopts the psychophysiological indicators of challenge and threat as proposed in the BPS model (see Figure 2). In motivated performance situations a challenge state is accompanied by increased SAM activity accompanied by catecholamine release (epinephrine and norepinephrine). The physiological response exhibited in challenge is indexed by changes from resting baseline (reactivity) in four CV variables; increased heart rate (HR; heart beats per minute[bpm]) and cardiac output (CO; litres of blood pumped from the heart per minute[l/min]), attenuated preejection period (PEP; time interval from beginning of electrical stimulation of the ventricles to the opening of the aortic valve[ms]), and decreased total peripheral resistance (TPR; sum of the resistance of all peripheral vasculature in the systemic circulation[dyn.s.cm<sup>-5</sup>]). Increased HR and attenuation of PEP from baseline indicate motivation to engage in the task (e.g., Obrist, 1981). A challenge response is

proposed to promote efficient energy use through increased blood flow to the brain and muscles, higher blood glucose levels (fuel for the nervous system) and an increase in free fatty acids that can be used by muscles as fuel (e.g., Dienstbier, 1989).

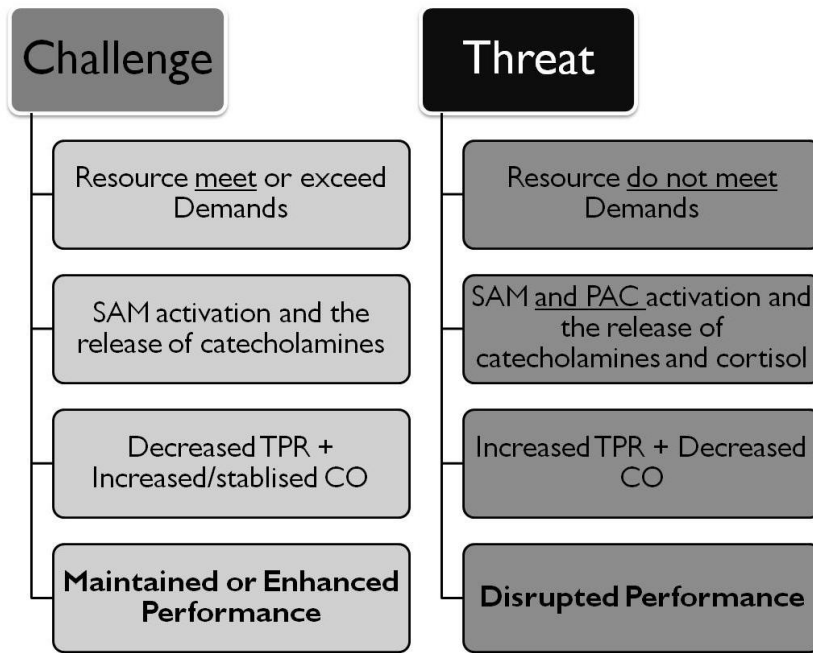


Figure 2. Psychophysiological patterns in challenge and threat states.

A threat state is similarly marked by increased SAM activity, but is also characterised by increased PAC activity accompanied by cortisol release. A threat state is also evidenced by changes from resting baseline in four CV variables, increased HR and attenuated PEP, but with a minimal change, stabilisation, or small decrease in CO, and an increase or stabilisation in TPR. Consequently, in a threat state PAC activity tempers the positive effects of SAM activity therefore the mobilisation of energy is less efficient than in a challenge state as blood flow (and therefore glucose) to the brain and muscles is restricted (e.g., Dienstbier, 1989). In short, both challenge and threat states are indexed by increased HR and decreased PEP reactivity, which are indicators of motivated performance. In a challenge state, the proposed underlying SAM activation is fast-acting and represents the efficient mobilisation of energy for action, reflected by increased CO and decreased TPR reactivity. A threat state reflects PAC (and SAM) activation and is considered a “distress system” reflected by decreased CO and increased TPR reactivity (Blascovich & Mendes, 2000). A threat state is considered maladaptive in modern motivated performance situations (e.g., interviews, exams, sports competitions), but may have served an adaptive function early in human history, for example by allowing energy production over long periods of time in order to cope with especially demanding circumstances (e.g., evading and escaping predators or natural disasters). In sum, increased HR and attenuation of PEP from baseline indicate motivation to engage in the task while changes from baseline in CO and TPR are the key indices of challenge and threat states (Blascovich & Mendes, 2000; Seery, 2011). A wealth of research has supported the CV indicators of challenge and threat states in response to motivated performance situations (see

Blascovich, Mendes, Vanman, & Dickerson, 2011; Seery, 2011; Turner & Barker, 2013, for reviews).

In the TCTSA challenge and threat states not only have their own set of physiological and psychological associates, but also have differing performance consequences and outcomes in relation to sport. In essence, a challenge state promotes efficiency of energy (glucose) delivery (e.g., Dienstbier, 1989) and is therefore proposed to facilitate improved decision making, effective and maintained cognitive function, increased task engagement, decreased likelihood of reinvestment, efficient self-regulation, and increased anaerobic power; all of which are likely to lead to successful sports performance (Jones et al., 2009). In a threat state efficiency of energy use does not occur as blood flow to the brain and muscles is not increased and the mobilisation of usable energy is slower than in a challenge state (e.g., Dienstbier, 1989). Therefore, a threat state is proposed to lead to ineffective decision making and cognitive function, decreased task engagement, increased likelihood of reinvestment, inefficient self-regulation, and decreased anaerobic power (compared to a challenge state); all of which are likely to lead to unsuccessful sports performance (Jones et al., 2009).

## **Challenge and Threat in Sport**

With the challenge and threat concepts clearly relevant in athletic contexts, Jim Blascovich and colleagues (Blascovich, Seery, Mugridge, Norris, & Weisbuch, 2004) examined the relationships between challenge and threat CV reactivity and athletic performance. Blascovich et al. (2004) had varsity baseball and softball players ( $N = 27$ ) give two speeches (baseball relevant and baseball irrelevant), with cardiovascular measures taken during the baseball speeches, and used to predict baseball/softball performance over the season. Participants who exhibited stronger challenge cardiovascular responses performed better (more runs created over a season) than those who exhibited threat cardiovascular responses (less runs created over a season). This study is of particular relevance to this chapter as it aligned the physiological patterns of challenge and threat states with competitive sport performance for the first time. This study also inspired some key predictions made in the TCTSA, that a challenge state should facilitate sports performance relative to a threat state. Therefore recent research has endeavoured to test the proposed predictive validity of challenge and threat states in a range of sport related tasks using the cognitive, emotional, and physiological indicators of challenge and threat states. We have conducted a number of investigations in our laboratory and in athletic settings to try to understand the relationship between CV indicators of challenge and threat states and performance. To record CV data we have used impedance cardiography, a well validated non-invasive method for monitoring the mechanical functions of the CV system (Sherwood, Allen, Fahrenberg, Kelsey, Lovallo, & van Doornen, 1990). Stroke volume (SV) is the actual parameter obtained via impedance cardiography, which measures thoracic electrical impedance changes, with CO a product of SV and HR ( $CO = SV \times HR$ ), and TPR derived from mean arterial pressure (MAP; average blood pressure) and CO ( $TPR = [MAP/CO] \times 80$ ). The protocol we have utilised is to collect baseline CV data before informing participants that they will be performing a task under pressure, that is, under conditions where their performance will be evaluated by coaches and peers, compared to other athletes, and in which they must exert high amounts of effort in order to prevail. The participants CV reactions to being informed about the pressured

performance, and mentally preparing for the performance, is then compared to their baseline level to form CV reactivity values. We then examine the relationship between this CV reactivity and actual task performance. In our research investigating performance, we have not oriented participants to challenge or threat states using between groups methods, but rather have exposed participants to a stressor (description of an upcoming competitive situation) and have recorded self-reported resource appraisals (self-efficacy, perceived control, and goal orientation) and CV reactivity, as would typically occur in actual sports performance.

In one paper (Turner, Jones, Sheffield, & Cross, 2012) we conducted two studies to examine the relationships between challenge and threat states and changes in performance from baseline. In Study 1 participants completed baseline Stroop Tests after which we induced pressure using ego-threatening instructions and asked participants to complete the Stroop Test once again, but under competitive circumstances. Similarly, in Study 2 we had 21 female varsity netball athletes perform a netball shooting task at baseline (no pressure induced), after which we induced pressure and collected CV data. The athletes then completed the netball shooting task under competitive circumstances. In both studies we were able to calculate changes in performance from normal (baseline) levels. We found that CV reactivity was related to changes in performance from base levels in both studies. Specifically, challenge CV reactivity (decreased TPR and increased CO) was related to increased performance from baseline, and threat CV reactivity (increased TPR and decreased CO) was related to decreased performance from baseline. So challenge CV reactivity was related to increased motor skill performance and cognitive performance. In other words, we were able to predict performance changes using CV reactivity.

More recently, we examined the relationship between CV reactivity and the performance of 42 elite male cricketers in a pressured Batting Test (Turner, Jones, Sheffield, Slater, Barker, & Bell, 2013). The Batting Test required the cricketers to score 36 runs from 30 deliveries from a pace bowling machine set at 80mph. Athletes scored runs by playing shots between cones that marked out a typical field used in cricket, with the exact amount of runs allocated by a national coach. After baseline CV recording athletes were informed that their performance would be compared to all other cricketers, seen by all coaching staff, and that their score will be considered when future team selection is being made. The athletes' CV reactivity to being informed about the Batting Test was recorded as with the netball athletes. As previously found, challenge CV reactivity was related to superior performance compared to threat CV reactivity. That is, athletes who exhibited challenge CV reactivity recorded a better score in the Batting Test than athletes who exhibited threat CV reactivity.

Interestingly, there were some cricketers who responded in threat state but still managed to perform well in the Batting Test ( $N = 5$ ), and some who responded in a challenge state but performed poorly ( $N = 6$ ); opposite to the general data trend and counter to what we would expect. Interestingly, cricketers who responded in a threat state but performed well had significantly greater self-efficacy than those who responded in a threat state and performed poorly. In addition, cricketers who responded in a challenge state but performed poorly had significantly greater performance avoidance goals than those who responded in a challenge state and performed well (see Figure 3). That is, it would appear that the resource appraisals may be of particular importance in mediating the relationships between challenge and threat CV reactivity and sports performance in athletes. This finding is consistent with previous research outlining the interplay between psychological states and emotional responses such as

Jones' (1995) model of debilitating and facilitative competitive state anxiety and Hardy's butterfly catastrophe model (Hardy, 1990). It is also consistent with previous challenge and threat research (Hoyt & Blascovich, 2010) which suggests that individuals who exhibit threat CV reactivity but report high self-efficacy may be reacting to the threat of the situation in a way that allows maintained or improved performance.

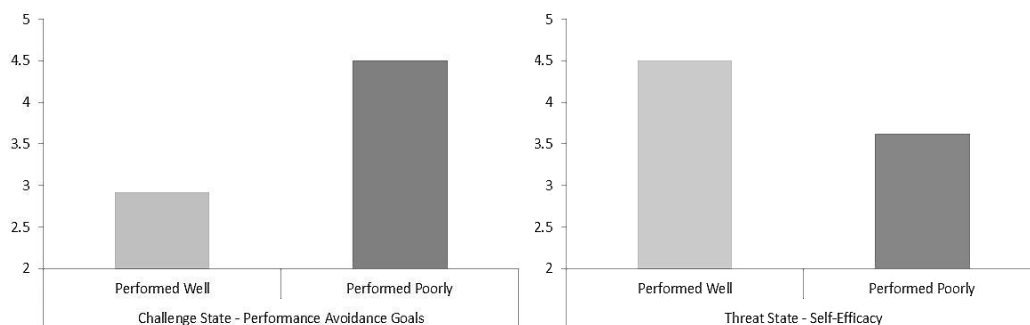


Figure 3. Performance avoidance and self-efficacy split by challenge and threat states and performance. Graphs illustrating the differences in self-efficacy between athletes who exhibited threat but performed well and athletes who exhibited threat and performed poorly, and the differences in avoidance goals between athletes who exhibited challenge and performed well and athletes who exhibited challenge but performed poorly.

Other researchers have also started to investigate challenge and threat states in relation to sport performance. A recent study (Moore, Vine, Wilson, & Freeman, 2012) assessed the cognitive appraisals, emotions (anxiety), CV reactivity (CO and TPR), visual gaze, putting kinematics, muscle activity, and golf putting performance of novice golfers. Moore et al. allocated participants to either a challenge or a threat condition (using instructional sets) and asked them to perform a golf putting task while the physiological measurements were taken (Moore et al., 2012). In line with the BPS model, participants in the challenge condition exhibited greater challenge CV reactivity and challenge appraisals compared to participants in the threat condition. Further, participants who exhibited challenge CV reactivity reported more favourable emotions, displayed more effective visual gaze, putting kinematics, and muscle activity, and performed more accurately in the golf putting task than participants who exhibited threat CV reactivity. Moore et al. concluded that the kinematic variables may be potential mechanisms for the relationship between challenge and threat CV reactivity and motor performance as posited in the TCTSA.

## Summary

In summary of the main conceptual and empirical findings that have informed this chapter thus far, the TCTSA has been drawn upon as a framework that describes and explains how individuals, and in particular athletes, react psychophysiological in competitive situations. Predominantly building on the theoretical developments and research of Lazarus and Folkman (1984), Dienstbier (1989), and Blascovich and Mendes (2000), the TCTSA



offers a transactional perspective in understanding how athletes adapt in competition situations, that encompasses cognitive, emotional, and physiological elements, captured in two distinct approaches to motivated performance situations: challenge and threat states.

## PRACTICAL IMPLICATIONS

The TCTSA predicts that an athlete in a challenge state should perform better than when in a threat state (Jones et al., 2009), an assertion based on previous theoretical approaches (e.g., BPS model) and empirical research findings (e.g., Blascovich et al., 2004). Emerging research has supported the link between a challenge state and superior sport performance in sub-elite (Moore et al., 2012; Turner et al., 2012) elite (Turner et al., 2013), and non-athletes (Seery, Blascovich, Weisbuch, & Vick, 2004; Seery, Weisbuch, Hetenyi, & Blascovich, 2010). Therefore, ways in which a challenge state can be promoted are valuable, and would be useful for psychology practitioners, coaches, and of course athletes. Research has identified various ways that a challenge state can be promoted, some methods represent psychological strategies that can be developed by athletes, some represent environmental alterations that can be employed by practitioners and coaches, and some reflect the often overlooked human capability to naturally adapt to demanding situations. In addition, using the TCTSA as a framework, we propose strategies that can enhance the resource appraisals that have not been tested in relation to the TCTSA, but are existing techniques that can be applied in motivated performance situations to promote a challenge state.

### Environmental Adjustments

In this section we outline how adjustments within an athlete's performance environment can be manipulated with a view to promoting challenge states. By environmental adjustments, we refer to factors external to the individual approaching a motivated performance situation that can be modified usually by significant others supporting the athlete's progress (e.g., sport psychologist, coach, parent). This section outlines the use of instructional sets and inoculation training.

**Instructional Sets.** Instructional sets have been used in research to manipulate challenge and threat states, which involves the use of audio instructions about an upcoming motivated performance that either promote perceived resources compared to perceived demands (challenge), or promote perceived demands compared to perceived resources (threat). Alternatively, research has focused challenge task instructions on potential reward for successful performance, and threat instructions on potential loss for unsuccessful performance (Hemenover & Dienstbier, 1996; Taylor & Scogin, 1992). Instructions have been adopted because previous research has validated a causal direction from challenge and threat appraisals to challenge and threat cardiovascular reactivity (Blascovich, Kibler, Ernst, Tomaka, & Varga, 1994; Tomaka, Blascovich, Kelsey, & Leitten, 1993; Tomaka, Palacois, & Lovegrove, 1995). This suggests that, in order to manipulate challenge and threat cardiovascular states, cognitive appraisals need first be manipulated. There is a consistent body of research demonstrating that modifying perceptions can alter psychophysiological

responses to potentially stressful stimuli (e.g., Allred & Smith, 1989; Holmes & Houston, 1974; Koriat, Melkman, Averill, & Lazarus, 1972; Nisbett & Schachter, 1966; Speisman. et al., 1964) and specifically that it is possible to modify perceptions of challenge and threat (e.g., Hemenover & Dienstbier, 1996; Taylor & Scogin, 1992).

In some studies, modifying the perceived importance of an upcoming task has been shown to manipulate challenge and threat appraisals. In one study (Alter, Aronson, Darley, Rodriguez, & Ruble, 2010) participants in a threat condition were instructed that an upcoming maths test would “show how good [they] were” and that “it would be able to measure [their] ability at solving math problems” (p. 167). In contrast, participants in a challenge condition were instructed that they “would learn a lot of new things” and that “working on these problems might be a big help in school because it sharpens the mind” (p. 167). Participants appraised the test (measured on a 7-point likert scale where 1 = challenging and 7 = threatening) in line with the instructions, and furthermore participants in the challenge condition performed better than those in the threat condition. In four studies Feinberg and Aiello (2010) used challenge instructions focusing on participants’ abilities to perceive a cognitive task “as a challenge to be met and overcome”, to perceive themselves as someone “capable of meeting that challenge,” and to try hard to do their best (p. 2079). Threat instructions focused on the difficulty of the task and the importance of working “as quickly and efficiently as possible” (p. 2079). Challenge instructions led to challenge appraisals and performance increments, while threat instructions led to threat appraisals and performance decrements. In short, four previous investigations have shown that task instructions can influence challenge and threat cognitive appraisals.

While the studies previously mentioned found that instructions can manipulate challenge and threat appraisals, they did not measure cardiovascular reactivity, a vital indicator of challenge and threat states. One study has examined CV reactivity alongside cognitive appraisals to test the assertions of the BPS model. Prior to a mental arithmetic task Tomaka, Blascovich, Kibler, and Ernst (1997) used threat instructions which emphasized the importance of completing the task “as quickly and accurately as possible” and that responses would be “scored for speed and accuracy” (p. 72), and challenge instructions which encouraged participants to “think of the task as a challenge” and to “think of yourself as someone capable of meeting that challenge” (p. 72). Participants given threat task instructions experienced threat CV reactivity and cognitively appraised a mental arithmetic task as threatening. Conversely, participants given challenge task instructions experienced challenge CV reactivity and cognitively appraised the task as challenging. This is an important study as it suggests that challenge and threat states can be manipulated and further validated the causal relationship between cognitive appraisals and cardiovascular reactivity.

Moore and colleagues (2012) also used instructional sets to create challenge and threat conditions, similar to Tomaka et al. (1997), but explicitly examined the performance effects of this manipulation. As in previous research, participants who received challenge instructions appraised an upcoming golf putting task as challenging and displayed challenge CV reactivity, compared to those who received threat instructions. However, the really interesting findings were that participants who received challenge instructions displayed more effective visual gaze, putting kinematics, and muscle activity, aiding performance in the putting task, compared to those who received threat instructions. This study further rationalises the benefits of promoting challenge states in performers, detailing the precise

mechanisms through which performance may be enhanced, encouraged using instructional sets.

Past research has successfully manipulated challenge and threat states using a range of instructional sets that focus either on altering perceived demands of an upcoming task, or in one study, altering perceived demands and perceived resources (e.g., Tomaka et al., 1997). In addition, the differing tone in which instructional sets are delivered may have contributed to the manipulation of challenge and threat states in some studies (e.g., Tomaka et al., 1997). In our own research (Turner, Jones, Sheffield, Barker, & Coffee, under review) we have also adopted instructional sets to manipulate challenge and threat states, but have done so differently to past research. The instructional sets we used only altered the resource appraisals from the TCTSA to differentiate challenge and threat instructions, while maintaining task demands between conditions. Therefore, challenge instructions promote high self-efficacy, high perceived control, and a focus on approach goals, and threat instructions promote low self-efficacy, low perceived control, and a focus on avoidance goals. Both sets of instructions increase perceptions of danger, uncertainty, and effort, thus maintaining perceived demands and only altering perceived resources. For example, prior to completing a climbing task participants receiving challenge instructions were informed that “you can feel confident that you will be able to climb effectively” (high self-efficacy), “you have control over the skills required to climb well” (high perceived control), and to “try your best to stay on the wall and get as high as you can” (a focus on approach goals). Participants receiving threat instructions were informed that “you obviously can’t be sure that you will climb the wall effectively” (low self-efficacy), “how well you do on the task may be related to factors outside of your control” (low perceived control), and to “try your best not to fall off the wall at any point” (focus on avoidance goals). Results supported previous research and showed that challenge instructions led to challenge CV reactivity and threat instructions led to threat CV reactivity. Importantly, unlike past research (e.g., Tomaka et al., 1997) we showed that a challenge can be promoted using only the resource appraisals, maintaining task demands, reflecting actual motivated performance situations in which the task is usually considered important, effortful, and dangerous to esteem.

The findings from research showing that challenge states can be promoted using instructional sets have implications for stress management and leadership in motivated performance settings. In addition, we showed that a challenge state can be promoted without altering the importance and difficulty of an upcoming task, an important finding because influencing the task demands in actual performance settings is difficult. For example, convincing an academy athlete approaching a first team debut that they have worked hard for and may determine their career progression that it is not important is unrealistic and would require a significant amount of cognitive restructuring. In contrast, convincing them that they have the skills to succeed, have control over their performance, while encouraging them to focus on success, is simple and logical. From a leadership perspective this means that creating the climate for success under pressure could involve using challenge-framed instructions directly prior to an important event. It is well established that leaders can have an important influence on their subordinates’ responses to stressful situations (e.g., Baker, Côté, & Hawes, 2000; Smith, Smoll, & Weichman, 1998). For example, a coach could lead her team talk with references to confidence, control, and approach goals to promote a challenge state in her athletes, while retaining references to the importance of the occasion. Indeed, research suggests that speeches with high instructional content increase athletes’ functional emotions

(Vargas-Tonsing, 2009). Importantly, as well as encouraging effective stress management, the promotion of challenge states may facilitate sport performance (e.g., Blascovich et al., 2004; Moore et al., 2012; Turner et al., 2013).

**Inoculation Training.** “I thrive on pressure now...In the past, maybe, the pressure might have got to me...But now it’s more exciting. You want to play in big games. You want to test yourself against the best in the world.” - James Anderson (cricketer who has represented England in over 50 Test matches and over 100 One Day Internationals; Brenkley, 2012).

Another way that challenge states could be promoted is by harnessing athletes’ ability to adapt to demanding situations by exposing them to controlled pressure in training. As the quote from England cricketer James Anderson highlights, many athletes find it difficult to handle the pressure of performing early in their careers, but through facing pressure many develop a resiliency allowing them to thrive when it matters most. In our research and consultancy work with elite athletes we have used “pressure testing” which involves setting up a highly evaluative, technically difficult, and well controlled scenario in which athletes must achieve a certain goal. For example, in cricket (Turner et al., 2013) we set up a Batting Test where athletes must reach a runs target of 30 runs off 36 deliveries from a pace bowling machine set at 80mph (technically difficult), with a set field (controlled). The athletes are video recorded, observed by coaching staff who will make selection decisions, and informed that their performance score will be seen by all other players (highly evaluative). Our research indicated that those facing the test in a challenge state perform better than those facing the test in a threat state, but also that athletes who had high self-efficacy and low avoidance goals performed well regardless of whether they were “challenged” or “threatened”. Given that the most powerful source of self-efficacy is past performance accomplishments (Bandura, 1997; Feltz & Lirgg, 2001), previous success under pressure, and the ability to draw on those experiences before future events, may allow even those who experience a threat state to still maintain their performance levels.

The use of pressure testing like the Batting Test may be a useful way of introducing athletes to pressure in a training context when used regularly and systematically. Desensitisation research suggests that repeated exposure to these types of activities could help athletes to adapt to stressful situations more easily (Wolpe, 1973), thus becoming better prepared for actual competitive pressure. To explain, as the athlete is subjected to stress regularly and systematically, they acclimatise to the experience of stress and develop or learn personal and often implicit resources for performing under pressured conditions. To allow the assessment of challenge and threat states the athletes’ progress through desensitisation could be measured using CV reactivity. Hypothetically, one would expect repeated exposure to a stressor, and more importantly multiple experiences of successfully coping under pressure, to promote challenge CV reactivity as demand appraisals, particularly uncertainty, become weaker compared to resource appraisals, accelerated by the addition of stress management techniques. In fact previous research has shown that prior exposure to stressful conditions which promote self-consciousness (explicit monitoring of task processes and procedures), help to inoculate against future stress, resulting in maintained and even improved performance (golf putting; Beilock & Carr, 2001). The notion that through stressful experiences one could better adapt to future stressors is akin to the idea of resiliency, a concept put forth in relation to challenge and threat states by Mark Seery (2011). In brief, resiliency is evidenced by the experience of a challenge state, and potential positive (or less negative) outcomes, during motivated performance situations. Importantly, Seery makes it

clear that individuals with a history of *some* adversity should exhibit greater resiliency than individuals with either a history of no or high adversity. Therefore it is important to bear in mind that pressure testing should not be too traumatic for athletes, and does not need to be, in order to help enhance resiliency for future performance situations.

So, creating training environments that are highly evaluative may be a useful strategy in helping athletes to cope in motivated performance situations. In a study exploring challenge and threat states, participants either performed a learned task or a novel task, in front of an audience (Blascovich, Mendes, Hunter, & Salomon, 1999). Participants performing the learned task, thus having knowledge of their abilities, exhibited challenge CV reactivity, whereas participants who performed the novel task, thus having no knowledge of their abilities, exhibited a threat CV reactivity. The evaluative nature of having an audience most likely increased the perceived demands, with perception of danger, uncertainty, and required effort all potentially augmented beyond perceived resources. Similarly, a within-subjects analysis was used to examine how challenge and threat appraisals change over multiple tasks (Quigley, Barrett, & Weinstein, 2002). Results indicated that the repeated exposure to the task led to participants becoming more challenged, with changing cognitive appraisals determining changing physiological responses. Thus, a situation that becomes more familiar is purported to promote a challenge appraisal and challenge CV responses due to enhanced coping perceptions (Blascovich et al., 1999; Quigley et al., 2002). These findings echo Ursin et al.'s (1978) research where repeated exposure to stressful tasks led to the development of a coping response.

In sum, there are environmental adjustments that can alter challenge and threat states. In particular, instructional sets can be used by significant others to promote challenge states, and the use of training that exposes athletes to stressful situations can help athletes to inoculate against the influence of threat states on performance. The strategies discussed thus far require the explicit influence of coaches, parents, and sport psychologists, on the training and or performance environment, but there are ways in which athletes can promote a challenge state through developing personal psychological skills.

## Psychological Skills

In this section we outline psychological skills that athletes can develop in order to promote a challenge state. By psychological skills, we refer to existing techniques and strategies that can be used by athletes prior to or during motivated performance situations. This section outlines the use of reappraisal and imagery.

**Reappraisal.** Reappraisal has emerged as an important strategy for regulating emotions (see Gross, 1998, for review). Reappraisal typically refers to an antecedent-focused strategy where an individual attempts to construe a potential emotion-eliciting situation in non-emotional terms (Gross, 2002). For example, some of the instructional sets discussed previously (e.g., Tomaka et al., 1997) encouraged participants to perceive a task to be low in difficulty thus removing the stressful nature of the situation. Indeed, Lazarus' early studies where a film was rendered harmless using instructions (e.g., Lazarus & Alfert, 1964), thus leading to less stress reactivity, is also relevant here. Recent research (see Jamieson, Mendes, & Nock, 2013) suggests that reappraisal can also be considered a response-focused strategy where an individual attempts to alter emotional responding once the emotion has been

generated (Gross, 2002). That is, a student approaching an examination may experience feelings of anxiety. A response-focused re-appraisal strategy would encourage the student to perceive this anxiety as potentially beneficial for their performance. In contrast, an antecedent-focused re-appraisal strategy would encourage the student to perceive the exam as less threatening thus attenuating the generation of anxiety.

The central theme of this chapter is the idea that cognitive appraisal (unconscious or conscious) determines the experience of challenge and threat states (cognitive change; Gross, 2002). However, individuals can reappraise their emotional and physiological reactions to stressful situations as more helpful for performance, reflecting a response-focused strategy (Gross, 2002), subscribing to the idea that perceptions of bodily signals influences psychophysiological responses to acute stress (Gross, 2002; Hofmann & Smits, 2008). Two recent studies have used the BPS as a framework to examine the use of reappraisal on challenge and threat states. In one study (Jamieson, Mendes, Blackstock, & Schmader, 2010), participants in a reappraisal condition were told prior to an exam that “recent research suggests that arousal doesn’t hurt performance” and that “people who feel anxious during a test might actually do better.” They were also encouraged to “simply remind yourself that your arousal could be helping you do well.” (p. 2). In this response-focused strategy participants were encouraged to perceive their anxiety as helpful, in contrast to an antecedent-focused strategy, requiring the individual to perceive the situation as non-stressful. Participants in the reappraisal condition exhibited higher catecholamine levels, indicative of SAM activity, perceived their anxiety as helpful, were more confident about performance, and performed better in the subsequent exam compared to a control group.

In a second study (Jamieson, Nock, & Mendes, 2011), prior to a speech task participants in a reappraisal condition were educated about the functionality of physiological arousal during stress and informed that increased arousal during stressful situations has evolved to help humans successfully address stressors and therefore increased arousal actually aids performance in stressful situations. Again, participants were not encouraged to perceive the speech task as any less demanding or stressful. Results showed that participants in the reappraisals condition reported higher perceived resources, and exhibited higher increases CO as well as lower increases in TPR compared to the control group; indicating a more psychophysiological adaptive response.

The two studies by Jamieson and colleagues offer partial support for the notion that reappraisal can promote a challenge state in motivated performance situations, and that reappraisal may facilitate motivated performance. Importantly, Jamieson et al. (2013) point out that the aim of reappraisal is not to decrease or dampen arousal, but rather to reshape how arousal is construed. Therefore, in contrast to the instructional sets discussed previously which promoted challenge appraisals over threat appraisals via an antecedent-focused strategy (Gross, 2002), reappraisal as used by Jamieson et al. encourages individuals to perceive their reactions to stress as helpful, a key characteristic of a challenge state (Jones et al., 2009), via a response-focused strategy (Gross, 2002).

Emotion regulation strategies such as reappraisal are evidently useful ways to promote challenge states and ultimately help individuals to better cope in stressful situations. However, a growing body of research suggests that one should exercise caution when attempting to employ emotion regulation strategies that include self-regulation under stressful conditions. That is, research consistently shows that after an initial bout of self-regulation (the process by which individuals consciously attempt to constrain unwanted thoughts, feelings

and behaviours), subsequent self-regulation is disrupted, regardless of the sphere (Baumeister & Tierney, 2011). In other words, it matters little whether the initial bout of self-regulation task involves the control of thoughts, feelings, or behaviours; subsequent self-regulation in the same or different sphere is disrupted. Therefore, there may be a cost attached to regulating emotions via reappraisal which is yet to be fully explored in sport (Beedie & Lane, 2012; Jones & Turner, in press).

**Imagery.** Another way to promote a challenge state is to use a psychological skill such as imagery. Imagery involves realistically and usually intentionally (though it can occur involuntarily) recreating or creating events in the absence of physical practice. Imagery can be used to practice skills, for motivational purposes (e.g., Callow & Hardy, 2001), to regulate emotions (e.g., Hecker & Kaczor, 1988), to enhance self-confidence (Callow, Hardy, & Hall, 2001), and to promote coping under stress (e.g., Vadocz, Hall, & Moritz, 1997; for reviews, see Cumming & Ramsey, 2008; Martin, Moritz, & Hall, 1999). The mechanisms through which imagery is proposed to work has been debated for decades in literature, with Neuromuscular, Attention-Arousal, Self-Efficacy, and Bio-informational theories, being put forth to explain imagery (Moran, 2004). In brief though, by using imagery future performance is facilitated by allowing the individual to achieve a desired psychophysiological state, and by allowing the rehearsal of skills whilst avoiding fatigue.

Although the mechanisms may still be under debate, imagery is a well-known and well researched psychological strategy with a host of benefits for use prior to and during motivated performance situations (Durand, Hall, & Haslam, 1997). In addition to the well-established benefits of using imagery, three studies (Hale & Whitehouse, 1998; Williams & Cumming, 2012; Williams, Cumming, & Balanos, 2010) have used directed imagery to manipulate challenge and threat cognitive appraisals and CV reactivity in line with the BPS model (Blascovich & Mendes, 2000) and TCTSA (Jones et al., 2009). In Hale and Whitehouse (1998), a within-subjects' design was adopted in which 24 experienced soccer players randomly received an imagery-based video and audio-taped manipulation of their appraisal of taking a hypothetical match-winning penalty kick under either a "pressure" or "challenge" appraisal emphasis. That is, the video was identical in both conditions apart from the accompanying caption "pressure situation" or "challenge situation." Results revealed that the challenge condition produced less cognitive anxiety, less somatic anxiety, and more self-confidence, but in line with the TCTSA's predictions, symptoms were perceived as facilitative for the challenge situation and debilitating for the pressure situation.

In Williams et al. (2010) some athletes received a challenge imagery script, that emphasized that athlete's resources met demands of the situation (challenge appraisals), and promoted high self-efficacy (e.g., "you have confidence in your own ability to perform") and perceived control (e.g., "demonstrating your sporting competence"), and emphasized potential gain (e.g., "there is real potential to achieve everything"; p. 347). The other participants received a threat imagery script that emphasized a threat appraisal, low self-efficacy, low perceived control, and emphasized potential loss. It was found that challenge imagery led to less threat appraisals, positive emotion perceptions, and higher confidence, while threat imagery led to more threat appraisals, negative emotion perceptions, and lower confidence. However, CV data revealed no differences between challenge and threat imagery conditions. Similar scripts were used by Williams and Cumming (2012) who found that the challenge script led to challenge appraisals and the threat script led to threat appraisal. CV data were not recorded, but it was found that those who received the threat script reported

their emotional responses as more debilitating for performance compared to those who received the challenge script.

In sum, imagery may be a useful strategy through which athletes can promote a challenge state prior to motivated performance. In particular, athletes able to realistically rehearse events in their minds while focusing on high self-efficacy, high control, and approach goals (the resource appraisals in the TCTSA) may be able to engender a challenge state, leading to adaptive emotional and physiological reactions to stress. Therefore sport psychologists and coaches may wish to promote the systematic use of imagery in their athletes, for particular use in pressure situations.

## **Concluding Remarks on Practical Implications**

The agents of stress management can be both individuals approaching the motivated performance situation, and individuals responsible for a performer's training and performance environment. That is, environmental adjustments made by individuals responsible for a performer's training and performance environment can promote challenge states, primarily by exerting an influence on the performer's cognitive appraisals. The use of instructional sets aimed at either reducing the significance of the event, or preferably increasing perceived resources while maintaining the significance, can be adopted by leaders, team mates, and significant others (e.g., parents, coaches). Inoculation training can also be driven by parents and coaches, but ideally in consultation with psychology practitioners who can ensure that the performer is exposed to controlled pressure and supported with stress management skills, for example by encouraging the athlete to reflect on the experience of succeeding in these pressured situations.

Whilst the promotion of successful adaptation can be driven by others, the most powerful agent of change is obviously the individual approaching the motivated performance situation, namely the athlete. Therefore, helping athletes to develop psychological skills such as reappraisal and imagery ensures that the athlete is able to self-regulate across situations regardless of changing support networks (e.g., coach, psychologist). Allowing athletes to have autonomy over the psychological skills required in order to cope with stressful situations may also add to the control aspect of the resource appraisals. For example, by developing personal psychological strategies to cope with stressful situations athletes can experience a sense of control over their psychophysiological responses to pressure. In all, employing strategies that mediate the transaction between stressor, perception, and response is key to promoting adaptation in motivated performance situations. By exerting an influence on the transactional process outlined in the TCTSA, challenge states can be promoted. More specifically, by increasing resource appraisals concerning motivated performance situations through the use of environmental adjustments and psychological skills, adaptive reactions to stress can be promoted.

## **Key Points to Enhance Adaptation**

I am always fascinated to watch how a guy handles a pressure situation... the true greats keep their self-belief, trust themselves and continue to work away, knowing that if the



foundations have been established, good form will come - Steve Waugh (in his 2005 Autobiography).

In this chapter we have adopted the TCTSA as our core framework through which a transactional perspective of stress in performance settings has been explored. The quote by Steve Waugh highlights the importance of maintaining self-belief amongst other things, which throughout this chapter has emerged as a key psychological component of positive adaptation. From the research concerning challenge and threat theory (TCTSA, BPS model, model and adaptive approaches to competition) and the investigations in to the factors that can promote a challenge state, the resource appraisals within the TCTSA are critical. Having high self-efficacy, high perceived control, and a focus on approach goals can set into motion not only particular adaptive CV reactivity, but also a host of psychological and emotional consequences known to facilitate performance in competitive settings. In addition, as practitioners in the field working with high-level performers, we see the resource appraisals emerge again and again as the key factors in determining performance when it counts. Therefore, we suggest that the decisive ways to encourage a challenge state, and subsequent positive adaptation, are strategies aimed at promoting high self-efficacy, high perceived control, and a focus on approach goals. A challenge state reflects an adaptive psychophysiological approach to motivated performance situations, associated with more efficient physiological reactivity, more efficient attentional deployment, more effective kinematics, and of course, superior performance. So promoting the resource appraisals is highly important for athletes to fulfil their potential, especially under pressured performance circumstances.

To promote perceived control, from the research and our applied work, we would advocate the use of a pre-performance strategy that helps the performer to focus only on the things they can and need to do to perform well, that are under their control. We call this a "Challenge Strategy" and it encompasses imagery as way to first evoke feelings of confidence, but chiefly to facilitate an intense focus on key aspects of the performance. In practice, the athlete is encouraged to recognise what they need to do in the first five minute of a performance that can allow them to build momentum and perform with confidence. For a soccer athlete this might be: (a) make one positive run down the wing, (b) make one strong tackle, and (c) make one positive pass up field (e.g., through ball or long ball). Then, the athlete strongly harbours the intention to carry out these aspects and only focuses his mind on achieving this in the lead up to performance. To achieve this focus, the athlete engages in imagery to visualise performing the key aspects successfully, drawing on past performance accomplishments. The important thing here is that the key aspects are aspects the athlete has done before successfully, and are controllable by them. We sometimes call this "The Michael Johnson Approach" which is based on a quote from Johnson's (2012) book, where he said prior to a race "I started my automatic default mechanism of visualising myself running the race... I thought about the things I needed to do in the race." Johnson also make another good point that relates to the challenge strategy that "It's not enough to say 'don't think negative thoughts', you have to replace them with something else." The challenge strategy works not only because it allows the athlete to focus on what they need to do, but also because while they are visualising, they are not thinking about failure or dwelling on the importance of the occasion.

## CONCLUSION

In this chapter we have given a historical account of the theoretical and research underpinnings of the transactional perspective with regards to stress in sport. In doing so, we explored the notions of challenge and threat and in particular, we have detailed the TCTSA and supporting research conducted by us in our laboratory and by others. We have also provided well supported psychological strategies and techniques for promoting adaptation for use with, and by, athletes. Lastly, we have given an account of the key strategies we feel can enhance adaptation, used in our consultancy work and supported by research presented previously in the chapter.

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*Chapter 6*

## **BURNOUT IN SPORT: FROM THEORY TO INTERVENTION**

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### **ABSTRACT**

The pursuit of excellence requires a great deal of motivation and can potentially be stressful due to the demands inherent in training and competing. Consequently, athlete burnout has received considerable recognition in the sport community. In this chapter we describe the nature of athlete burnout and review theory and research stemming from stress (overtraining and social-psychological models) and motivation (achievement, commitment, and self-determination) perspectives on this issue. In recent years, dispositional factors associated with burnout have garnered a considerable empirical attention, so we review that literature. While recognizing the importance of dispositional factors, we also note the importance of environmental factors with a specific focus on addressing the need for cross-cultural research. We then describe strategies that potentially reduce the risk of burnout and also result in adaptive outcomes that facilitate athlete motivation and well-being. These include (a) targeting factors identified in theory/research that may increase burnout vulnerability aligned with an evidence-based practice approach, (b) recognizing that burnout potentially is best prevented by creating a strong athlete-sport culture fit, and (c) structuring sport to promote engagement, the conceptual opposite of burnout. Preventing burnout not only minimizes maladaptive outcomes associated with sport participation, but also facilitates positive human functioning and athlete well-being.

## **INTRODUCTION**

Spectators marvel at the feats of highly skilled athletes and what the human body/mind can accomplish. Indeed, sport participation can result in positive physiological adaptations and psychological development that are critical in the pursuit of excellence. The pursuit of excellence itself can be an energizing force that facilitates human functioning and enhances well-being. However, positive adaptations associated with intense sport involvement do not always occur and there is a fine line between sport experiences that enhance human functioning and those that result in maladaptive outcomes. One such maladaptive outcome is burnout. To gain insights on how to structure sport to minimize its occurrence and facilitate human functioning and well-being, it is important to recognize the nature of this phenomenon, along with factors that increase burnout risk.

## **NATURE OF BURNOUT**

The burnout construct as a psychological syndrome has its origins in the human service literature where it gained notoriety in the 1970s based on Freudenberger's (1974) and Maslach's (1976) descriptions of a state of exhaustion resulting from chronic stress that is accompanied by a loss of motivation and commitment. Shortly thereafter, athlete burnout began to receive attention in the sport community due to concerns raised by sport organizations, sport psychologists, coaches, parents and athletes themselves. Interest in this issue has subsequently proliferated as the modern sport culture is replete with qualities thought to make athletes vulnerable to burnout (Malina, 2010). Not only does the quest for excellence demand a great deal of motivation, it is also potentially stressful due to high training volumes, intense competitive demands, near year-round training, sport specialization at young ages, and many other psychosocial stressors.

## **DEFINING BURNOUT**

Early descriptions of athlete burnout were not based on a well-delineated conceptual definition. Because of that, the term was used in a variety of ways. In everyday discourse, it was at times used interchangeably with the term sport dropout. However, this is an incorrect use of the term because athletes can discontinue sport participation for a variety of reasons. Burnout is only one possibility. In addition, not all athletes who experience burnout discontinue sport. At other times, burnout was used in the context of overtraining. Although overtraining likely plays a role in the burnout process at times, and there is overlap between burnout and the overtraining syndrome, they should not be viewed as identical constructs.

When burnout first received attention in the human service literature, Maslach and Jackson (1984) operationally defined it as a syndrome of (a) emotional exhaustion characterized by extreme fatigue and emotional overextension due to chronic occupational demands, (b) depersonalization in which the provider developed a negative and detached attitude toward recipients of one's care, and (c) a reduced sense of accomplishment in terms of job performance and one's ability to effectively provide adequate care. This definition was

inherently limited to occupations where the provider-recipient relationship was of central importance. Raedeke (1995, 1997) highlighted the need to modify this conceptualization to adjust for contextual differences between the role of an athlete and that of human service providers. The provider-recipient relationship does not capture the most central features of the athlete role.

Consequently, Raedeke (1995, 1997) adapted the syndrome-based burnout conceptualization to fit the athlete role. Emotional exhaustion was extended to include physical fatigue stemming from training and competition. Reduced sense of accomplishment was cast in terms of sport performance, skills, and ability rather than in terms of relationships and was characterized by feelings of inefficacy and a tendency to evaluate oneself negatively in terms of sport performance and accomplishments. Finally, Raedeke posited devaluation rather than depersonalization. Depersonalization represents devaluation of and detachment from what is important in the human service domain, namely clients. For athletes, devaluation is represented by developing a negative attitude, cynical outlook on sport, and psychological detachment from sport to the point of developing a resentful attitude toward involvement. This resentful attitude reflects a devaluing what was previously highly valued by the athlete. The conceptualization of athlete burnout as a syndrome of emotional and physical exhaustion, a reduced sense of accomplishment, and sport devaluation is the most widely accepted definition of athlete burnout today.

Support for this burnout conceptualization is consistent with research across a wide variety of sport and nonsport contexts. About the same time of Raedeke's (1995) burnout conceptualization, Maslach and colleagues developed a General Survey version of the Maslach Burnout Inventory (MBI) (Maslach, Jackson, & Leiter, 1996; Schutte, Toppinen, Kalimo, & Schaufeli, 2000). Emotional exhaustion was extended to include physical exhaustion similar to the ABQ. The perceived accomplishment scale was recast as inefficacy, conceptually similar to a reduced sense of accomplishment. Paralleling devaluation, depersonalization was reconceptualized as a broader construct of cynicism, depicted by a negative and detached attitude toward one's job. Additional support for the multidimensional conceptualization of athlete burnout stems from qualitative studies sampling athletes from various sport types, cultures, and contexts (Cresswell & Eklund, 2006, 2007; Dubuc, Schinke, Eys, Battocchio, & Zaichkowsky, 2010; Goodger, Wolfenden, & Lavalley, 2007; Gustafsson, Kenttä, Hassmén, Lundqvist, & Durand-Bush, 2007b) as well as coach perspectives on this issue (Raedeke, Lunney, & Venables, 2002).

Since early burnout conceptualizations, there has been widespread agreement that burnout is a reaction to chronic stress resulting in exhaustion. Consequently, exhaustion is viewed as the core and most widely accepted burnout dimension. However, defining burnout in multidimensional terms enhances conceptual richness (Maslach, Schaufeli, & Leiter, 2001; Schaufeli & Taris, 2005). A multidimensional conceptualization also helps differentiate burnout from other constructs in sport psychology that are characterized by fatigue such as depression, hopelessness, chronic fatigue, and overtraining syndrome. Defining burnout in multidimensional terms is particularly important as each dimension may be tied to distinct antecedents and consequences. For example, exhaustion is clearly stress related whereas the other dimensions are more attitudinal in nature. Thus, a multidimensional conceptualization provides a nuanced description of burnout and may offer a better understanding of the burnout process and potential targets of intervention than simply viewing burnout in terms of exhaustion.

Given that burnout is a multidimensional construct, there has been some debate as to whether the burnout dimensions develop in a sequential order, and if so, in what order (Maslach & Goldberg, 1998; Maslach et al., 2001). Although strong evidence on this issue does not exist in the sport setting, it is entirely possible that there is a reciprocal relationship between the burnout dimensions. For example, a reduced sense of accomplishment could result in athletes training harder, and thereby feeling more exhausted. Feeling exhausted could trigger sport devaluation and a reduced sense of accomplishment. Devaluing sport might result in athletes feeling exhausted and questioning their sport accomplishments. Thus, the burnout dimensions may progressively fuel one another rather than unfolding in an invariant sequential sequence.

## EPIDEMIOLOGICAL SIGNIFICANCE

Although athlete burnout is thought to be of epidemiological significance, its prevalence is not well understood (Eklund & Cresswell, 2007; Gustafsson, Kenttä, Hassmén, & Lundqvist, 2007a). Unlike qualitative investigations that have specifically targeted athletes thought to have experienced burnout (e.g., Gould, Tuffey, Udry, & Loehr, 1996b; Gustafsson et al., 2007b; Tabei, Fletcher, & Goodger, 2012), most large scale survey studies have sampled current athletes. Surveying current athletes may underestimate its prevalence because some athletes who experience burnout will have left sport. Those who remain in sport may decline study participation or be absent when the questionnaire is administered. Sampling actively participating athletes reflects what is referred to as the “healthy worker effect” (Schaufeli & Enzmann, 1998), where those experiencing burnout are likely underrepresented.

Notwithstanding the limitation of sampling current athletes, one approach to estimating burnout prevalence has been to interpret scores on a self-report burnout questionnaire relative to the scale’s response set options. For example, one common measurement approach is based on the Athlete Burnout Questionnaire (ABQ) in which athletes respond to a series of 15 items that assesses the frequency of experiencing thoughts and feelings tied to the respective burnout dimensions. Response options are “1 = almost never”, “2 = rarely”, “3 = sometimes”, “4 = frequently”, and “5 = almost always.” Assuming a score of at least four across all burnout dimensions is indicative of high burnout, the prevalence is low (see Eklund & Creswell, 2007; Gustafsson, et al., 2007a). Specifically, less than 1% of athletes meet this threshold of scores, with approximately 8% having such scores on exhaustion, 3% on sport devaluation, and 2% on reduced sense of accomplishment (Raedeke & Smith, 2009).

Establishing the prevalence of burnout is complex because burnout is multidimensional, making it difficult to ascertain whether athletes need to score high on a single versus multiple dimensions to be categorized as experiencing burnout. Although the finding that few athletes have high scores on a burnout measure might suggest that few athletes experience burnout, it is also possible that this approach underestimates its prevalence. Using response set options is a reasonable approach in interpreting questionnaire data; however, it must be done with caution. Scores are likely affected by a variety of factors including social desirability, sport culture influences, and personality differences. This makes it difficult to interpret what constitutes a high or low score in an absolute sense. It could well be the case that scores lower

than 4 in reality reflect relatively high burnout. Higher than prevalence estimates based on ABQ scores of 4 or greater, Raedeke (1997) found approximately 11% of a sample of age-group swimmers to fit in a profile based on psychological characteristics theoretically consistent with burnout. This subgroup also scored higher on burnout than the rest of the sample; however, across burnout dimensions the scores were approximately 3.0 to 3.5 on a 5-point scale. Thus, targeting only those athletes who endorse burnout perceptions “frequently” and “most of the time” may result in underestimating the prevalence of burnout.

Within the organizational psychology literature, an alternative approach to examine prevalence has been to compare sample scores relative to norms developed by Maslach et al. (1996). Population norms were initially developed by dividing the distribution into thirds. Scores in the upper third were defined as high burnout, those in the middle third as average burnout, and those in the bottom third as low burnout. By definition, 33% of the population falls into each of the categories. A shortcoming of this approach, which is shared with approaches employing cutoffs based on response set options, is that what is labeled high burnout may or may not be of sufficient magnitude to result in debilitating burnout consequences.

Diagnostic criteria for interpreting the meaningfulness of athlete burnout scores relative to debilitating consequences do not exist. Thus, any existing estimates of prevalence are based on somewhat arbitrary criteria. A valuable direction for research on athlete burnout prevalence would be to link burnout scores to consequences such as dropout, maladaptive immunological responding, and other markers (e.g., behavioral, physiological, or psychosocial) consistent with a debilitating burnout state.

Assuming that athlete burnout is fairly rare, it nonetheless may have epidemiological significance due to the millions of sport participants across the globe and the negative impact it potentially has on athletes sport experiences and well-being. Although few studies have examined its consequences, burnout can negatively impact all spheres of an athlete’s life. Within sport, burnout is thought to result in performance decrements, decreased quantity and quality of motivation, and possibly sport discontinuation. Outside of sport, burnout can be associated with diminished physical and psychological well-being as well as less effective interpersonal relationships.

## **STRESS, BURNOUT AND ADAPTIVE FUNCTIONING**

It is widely accepted that burnout is a reaction to chronic stress. However, the sources of stress that trigger burnout may vary greatly depending on individual characteristics (e.g., dispositions) and situational factors (e.g., sport type, culture). Within the sport psychology literature, researchers recognize that high training volumes may be one potential cause of burnout in conditioning-intensive sports. Social psychological stressors also figure prominently in athlete burnout.

## Overtraining

Well before scientific inquiry on overtraining and burnout became prominent, the potential for excessive training to result in maladaptive outcomes was recognized. Ernie Hjertberg, the first professional coach in Sweden was hired to prepare athletes for the 1912 Olympics in Stockholm. He viewed overtraining as a consequence of the athlete pushing close to maximum physical capacity too frequently, resulting in impaired performance including decreased power and endurance. Poor diet and inadequate sleep were considered additional risk factors. He argued that treatment required large amounts of rest, a good diet, fresh water, clean air, and avoiding temptations that could disturb the inner balance of a clean soul (Yttergren, 2012).

Since the 1980s, sport scientists have acknowledged considerable overlap between the “overtraining” and “burnout” constructs. In fact, the terms are sometimes used synonymously (e.g., Brenner, 2007; Budgett, 1998). Reflecting their overlap, exhaustion plays a strong role in both. It is also commonly acknowledged that excessive physical training *and* non-training stressors (social psychological stress) contribute to the burnout and the overtraining syndromes. Beyond these two basic categories, a myriad of other variables are thought to be involved in both of these maladaptive syndromes, including coping resources, personality, motivation, and social-environmental factors (Goodger, Wolfenden et al., 2007; Gould et al., 1996b; Gustafsson, Kenttä, & Hassmén, 2011; Kenttä & Hassmén, 1998; Meeusen et al., 2013; Rushall, 1990; Smith, 1986).

After nearly 30 years of research, few attempts have been made to bridge the overtraining and burnout syndromes. Research on the respective syndromes proceeds in separate directions. To illustrate, in a recent consensus statement on the overtraining syndrome by the European College of Sports Science and the American College of Sports Medicine, the word burnout appears only once and parenthetically (Meeusen et al., 2013). Within the overtraining literature, which is most often published in sports medicine journals, physical training and recovery are given most attention with a secondary inclusion of social-psychological variables. In contrast, the athlete burnout literature, which is most often published in sport psychology journals, tends to focus on social psychological factors with secondary emphasis on training/recovery related variables. This division might be explained by the different origins of the constructs as burnout has its origins in social psychology and the human service literature and overtraining has its origins in exercise physiology/sports medicine. Despite their overlap, it remains difficult to synthesize the respective overtraining and burnout syndromes and associated research findings into an encompassing theoretical model (Kenttä, 2001).

In essence, the overtraining syndrome is characterized by sustained decreased performance and a persistent state of exhaustion resulting from an accumulation of training and/or non-training stress in which restoration may take months (e.g., Fry, Morton, & Keast, 1991; Kuipers, 1998; Kuipers & Keizers, 1988; Meeusen et al., 2013). Although training stress gets the most attention in the overtraining literature, it is recognized that non-training stressors such as sleep disturbance, exposure to environmental stressors, occupational/school pressures, financial problems, change of residence, and interpersonal or family difficulties may add to the stress of physical training for athletes. If athletes are experiencing high amounts of stress outside of sport, it will be more difficult for them to handle high training demands.

Insufficient recovery also plays a critical, but often overlooked, role (e.g., Budgett, 1998; Kellmann, 2002; Kenttä & Hassmén, 2002) in the overtraining process. A functional recovery process represents the mechanism by which a higher level of function is achieved following intense training. It serves to enable athletes to reduce fatigue and regain vitality. Physical rest and time away from sport are central to recovery as are more active strategies including light activity, adequate nutrition and hydration, mental and physical relaxation, stretching and warm-down. Beyond these, recovery can also involve activities that bring life balance and feelings of vitality. Athletes who are physiologically overtraining and who have insufficient recovery may experience the maladaptive syndrome of burnout. Despite the overlap, overtraining and burnout are distinct constructs. Overtraining is one potential cause of burnout, but not a requisite condition. A variety of social psychological factors may trigger burnout as well.

## **Social Psychological Stress**

One of the first conceptual models that became influential for understanding athlete burnout was proposed by Smith (1986). Drawing on the stress literature, Smith conceptualized burnout as a consequence of chronic stress. Stress occurs when athletes perceive an imbalance between task demands and their resources to meet those demands. Consistent with a stress perspective, research has consistently shown a strong relationship between stress and burnout (Goodger, Gorely, Lavalley, & Harwood, 2007).

Demands involve all the stressors in sport. They can stem from the physical demands of training and competing as well as the time requirements associated with sport. They can also stem from external or interpersonal sources such as pressure from coaches and parents. Coaches can play a central role in burnout (Price & Weiss, 2000; Rad, & Ghalenoei, 2013; Vealey, Armstrong, Comar, & Greenleaf, 1998; Zardoshtian, Hossini, & Mohammadzade, 2012). They can be a source of stress through their leadership style, coaching behaviors, and interactions with athletes. Overinvolved parents may create excessive pressure by setting high standards for their children while being overly critical of their children's achievement striving. In a more subtle way, parents who are supportive of their children's sport experience, but whose family life centers around sport, may also create burnout vulnerability (Raedeke et al., 2002). Finally, high perceived sport demands and chronic stress can stem from dispositional characteristics such as perfectionism and contingent self-worth/low self-esteem that predispose athletes to burnout.

Although elevated demands are important in stress perspectives on burnout, resources are also important. Broadly defined, resources are all the internal and external factors athletes have available to effectively manage task demands. Example factors include coping strategies, self-regulatory skills, and social support. To illustrate, Raedeke and Smith (2004) found that effective coping resources including lifestyle management (e.g., sleep and eating habits) and social support mediated the relationship between stress and burnout. Thus, stress related processes, including both demands and resources, play an important role in burnout. However, burnout is more than a stress related phenomenon, motivational processes also play a role and should be carefully considered when seeking to understand athlete burnout.

## MOTIVATIONAL PERSPECTIVES AND ATHLETE BURNOUT

Early descriptions depicting highly committed individuals who lose motivation (e.g., Freudenberger, 1974) suggest that burnout is an inherently motivational phenomenon. Although strong motivation is central to achieving excellence, it can in certain settings fuel behaviors that are counterproductive and increase susceptibility to burnout. The hallmark features of this experiential syndrome also highlight burnout as a motivational phenomenon. Although exhaustion has its roots in stress, reduced sense of accomplishment and devaluation are motivational in nature (Raedeke, 1997; Raedeke & Smith, 2001). A reduced sense of accomplishment is inversely related to the inherent need of individuals to feel competent, a need that is a central feature of numerous motivational theoretical perspectives (see Weiss & Amorose, 2008). Devaluation likewise represents a motivational threat in that athletes stop caring and become detached from previously held concerns about sport and performance quality. Indeed, burnout has been described as “motivation gone awry” by Gould (1996) and others have called for close examination of motivational theories to garner an increased understanding of burnout (see Lemyre, Hall, & Roberts, 2008). In this section we overview three motivational perspectives that have been applied to the examination of athlete burnout. Specifically, we summarize the knowledge base on burnout as examined from achievement goal, sport commitment, and self-determination theory perspectives.

### Achievement Goal Theory

Achievement goal theory (Nicholls, 1984, 1989) is among the most popular theoretical frameworks that have been employed to study sport motivation (see Roberts, Treasure, & Conroy, 2007). This theory suggests that achievement goals influence cognitions, affect, and behavior. When athletes conceive of achievement in self-referent terms, emphasizing task mastery and improvement, they are said to be task-involved. When athletes conceive of achievement in normative terms, emphasizing demonstration of ability or avoiding the appearance of lacking ability compared to others, they are said to be ego-involved. Task-involvement generally links with adaptive motivational outcomes, whereas ego-involvement renders athletes vulnerable to maladaptive motivational outcomes when they perceive ability as inadequate. Whether athletes are more task- or ego-involved in a specific situation (i.e., goal involvement) depends in part on dispositional influences (i.e., task/ego orientation) as well as the achievement climate. Ames (1992) refers to a mastery or task-involving climate and to a performance or ego-involving climate. A task-involving climate emphasizes and rewards self-referenced criteria for success, a learning focus, effort, and cooperation, whereas an ego-involving climate emphasizes and rewards social comparison and evaluation, within-group competition, and punishment of mistakes. Based on this theoretical perspective, factors that foster task-involvement should be protective against burnout whereas factors that foster ego-involvement can increase vulnerability to burnout.

Two illustrative studies offer support for these theoretical contentions. Lemyre et al. (2008) assessed various social cognitive motivational variables in elite winter sport athletes at the start of a season and examined associations with end-of-season burnout perceptions. Stronger burnout perceptions were associated with higher performance climate perceptions as



well as lower mastery climate perceptions, task goal orientation, and perceived ability. Appleton, Hall, and Hill (2009) found that task goal orientation of junior-elite male athletes showed an inverse association with a reduced sense of accomplishment and sport devaluation and that satisfaction with goal progress inversely associated with all burnout dimensions.

Other work has specifically targeted the motivational climate as a potential predictor of athlete burnout perceptions (e.g., Reinboth & Duda, 2004; Smith, Gustafsson, & Hassmén, 2010; Taghavi, Sheikh, & Hemayattalab, 2012). For example, in adolescent male soccer and cricket players, Reinboth and Duda found perceptions of an ego-involving climate framed primarily by the coach to be positively associated with the exhaustion dimension of burnout (the other dimensions were not measured). This suggests that what coaches emphasize and how they choose to reward athletes can have bearing on burnout perceptions of athletes. Other work shows that the motivational climate as initiated and reinforced by peers similarly can have implications for burnout. Smith and colleagues found burnout perceptions to be positively associated with peer initiated ego-involving climate (i.e., perceived intra-team conflict) and inversely associated with peer initiated task-involving motivational climate (i.e., perceived improvement, relatedness support as reflected in feelings of social acceptance and belonging, and effort). Overall, existing athlete burnout research framed within achievement goal theory suggests that the perceived climate fostered by others as well as dispositional achievement goal orientations play a role in burnout processes.

## Sport Commitment

Schmidt and Stein (1991) developed a commitment based perspective on sport involvement that explains why some athletes may be vulnerable to burnout in comparison to those who continue to be involved in sport or who drop out without experiencing burnout. Based on research examining commitment in close relationships and in organizational settings, they noted athletes prone to burnout are committed to sport for reasons that differ from those who are not. An adaptive type of commitment is characterized by increasing enjoyment/satisfaction reflected by increasing benefits along with decreasing costs. Concomitantly, athletes invest a great deal of time, energy, and resources into sport and perceive that alternative options are less attractive than sport involvement. An alternative form of commitment associated with burnout is characterized by decreasing sport attraction reflected by decreasing rewards and increasing costs. Despite this, athletes maintain involvement because they have too much invested to quit, perceive low alternatives to sport involvement, and experience increasing social constraints in which athletes maintain involvement because of social pressures. This profile differs from one characterizing dropouts, who would have increasingly attractive alternatives, decreasing investments and decreasing social constraints. The profile consistent with burnout risk has been referred to as *entrapped* because athletes with this profile would continue sport involvement because they “have to” rather than because they inherently “want to”.

The commitment perspective aligns with Coakley's (1992) sociological model of burnout among adolescent athletes. In this model, burnout occurs when athletes begin to question the meaning of sport in their lives and feel stifled by the role of being an athlete. Athletes feel stifled because of constraints on identity development and personal control that are imposed by the social organization of sport. Specifically, organizational constraints prevent the

development of a multifaceted identity in athletes. Unlike typical adolescent development, exclusive involvement in sport results in young athletes being unable to explore and develop other aspects of their identity. Consequently, they experience identity foreclosure and develop a unidimensional identity. At a developmental time when athletes seek autonomy, sport constricts the athlete's sense of autonomy because much decision-making is placed with others. In short, when athletes are entrapped such that alternative identities are not explored and they have limited control over their lives, they are vulnerable to burnout. Integrating this with a commitment perspective, a unidimensional identity and low control can be considered additional sources of entrapment-based commitment.

Raedeke (1997) supported a commitment perspective on athlete burnout in a study of adolescent swimmers. He adopted an ideographic approach, assessing the potential to distinguish profiles of swimmers based on key commitment constructs (i.e., enjoyment, benefits, costs, alternative attractiveness, investments, social constraints, swim identity, and perceived control). He observed four profiles of swimmers labeled enthusiastic, malcontented, obligated, and indifferent. Those in the malcontented and obligated profiles showed characteristics of entrapment, with the former group showing the highest scores across all three burnout dimensions compared to the other swimmers. In another study of adolescent swimmers, Black and Smith (2007) showed perceived control of swimming participation to inversely predict exhaustion and devaluation aspects of burnout after controlling for perceived stress and weekly swimming yardage. More research is warranted on the commitment perspective on athlete burnout, as the limited work to date shows the perspective to hold promise for understanding this phenomenon.

Based on this work, a key aim is to cultivate passion in athletes for sport while staving off elements of involvement tied to entrapment. Much like commitment, passion is not something athletes have or do not have, rather there are different types. One type is an obsessive passion for sport that is associated with higher burnout scores, at least in some research. The other type (i.e., harmonious passion) is characterized by a more intrinsically motivated type of passion associated with lower burnout scores (Gustafsson, Hassmén, & Hassmén, 2011; Schellenberg, Gaudreau, & Crocker, 2013). Cultivating such adaptive passion is challenging in structured, highly-controlled settings (Coakley, 2009), but if it can be accomplished it is expected to protect against burnout by fostering self-determined motivation (Curran, Appleton, Hill, & Hall, 2011). We further discuss the importance of self-determination and its tie to burnout in the next section.

## **Self-Determination Theory**

The motivational perspective most frequently employed to study athlete burnout is self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000, 2002). This theory holds that humans have an innate tendency toward psychological growth and that the fulfillment of competence, autonomy, and relatedness needs underlies optimal psychological functioning and development. The competence need is fulfilled when athletes feel effective or successful, the autonomy need is fulfilled when choices and behaviors are personally and freely driven, and the relatedness need is fulfilled when experiencing a sense of acceptance and belonging. The fulfillment of these needs is expected to link to higher levels of well-being than when

these needs are thwarted, which can foster conditions of ill-being. Accordingly, this perspective suggests that inability to fulfill basic human needs can result in burnout.

Need fulfillment also is tied to how goals are pursued, with greater fulfillment driving more self-determined behavioral regulation which is conceptualized on a motivational continuum. Intrinsic motivation is at the most adaptive end of the continuum (Deci & Ryan, 2000). Intrinsically motivated behavior is performed for the inherent pleasure, satisfaction, and knowledge that the behavior provides. Extrinsically motivated behavior comes in various forms, some relatively self-determined and regulated by acting in line with personal values and identity and other forms more ostensibly controlled, driven by sense of obligation and external rewards. Amotivated behavior lacks underlying motivation, with individuals perceiving no reason to participate and no connection between behavior and outcomes. Athletes with less self-determined behavioral regulation, or absence of motivation altogether, are expected to have greater burnout susceptibility.

Early efforts focused predominantly on relating behavioral regulations on the self-determination continuum with burnout status or burnout perceptions. For example, Gould, Tuffey, Udry, and Loehr (1996a) examined a group of athletes who had burned out of junior tennis, finding higher amotivation scores to most strongly discriminate them from comparison players. Subsequent studies examining athletes from a variety of sports and competition levels corroborated this finding, showing a positive relationship between all three burnout dimensions and amotivation (Cresswell & Eklund, 2005b, 2005c; Holmberg & Sheridan, 2013; Raedeke & Smith, 2001). These studies also showed burnout dimensions to be inversely correlated with intrinsic motivation. Lemyre, Treasure, and Roberts (2006) extended these early efforts, examining self-determined motivation in high-level college swimmers every three weeks across a competitive season. They found a negative motivational trend (less self-determined over time) to be linked to higher scores on burnout dimensions at the end of the season. In line with this finding, other longitudinal work has supported the theoretically expected connection between self-determined motivation and burnout (Cresswell & Eklund, 2005a; Lemyre, Roberts, & Stray-Gundersen, 2007; Lonsdale & Hodge, 2011). Research is needed that strengthens support for a causal tie between self-determined motivation and burnout as well as how controlled behavioral regulations link with burnout (see Li, Wang, Pyun, & Kee, 2013; Lonsdale & Hodge, 2011). However, the findings overall support that more self-determined motivation makes an athlete less susceptible to burnout.

Fewer research efforts have examined the link of basic need fulfillment with athlete burnout, though this has been of recent interest to sport psychology researchers. Early efforts that were not explicitly grounded in self-determination theory, but that incorporated perceived competence or perceived control, showed these constructs to negatively associate with burnout perceptions (Price & Weiss, 2000; Raedeke, 1997). Subsequent studies grounded within self-determination theory also showed expected associations between basic psychological needs and athlete burnout perceptions in cross-sectional (Hodge, Lonsdale, & Ng, 2008; Perreault, Gaudreau, Lapointe, & Lacroix, 2007) and longitudinal (Amorose, Anderson-Butcher, & Cooper, 2009; Quested & Duda, 2011) research. Though findings vary somewhat across studies, a meta-analytic summary of extant work by Li et al. (2013) found the three basic needs to show relationships of comparable magnitude with the burnout dimensions. Also, there was a trend for weaker relationships with exhaustion compared to the reduced accomplishment and devaluation burnout dimensions. The findings overall suggest

that fulfillment of the needs for competence, autonomy, and relatedness reduces burnout susceptibility in athletes.

Researchers have also examined integrative models with self-determined motivation mediating the association of basic psychological needs with burnout (Isoard-Gauthier, Guillet-Descas, & Lemyre, 2012; Lonsdale, Hodge, & Rose, 2009). As the database from these studies builds, various motivational antecedents (e.g., coaching styles, teammate relationships) are incorporated into the work, and self-determination theory tenets are integrated with other motivational perspectives used to understand burnout, a deeper understanding of athlete burnout should emerge that guides strategies for prevention and treatment. The motivation-based work on athlete burnout to date clearly suggests that burnout is an inherently motivational phenomenon and that such efforts are warranted.

## **DISPOSITIONAL FACTORS ASSOCIATED WITH BURNOUT AND ADAPTIVE FUNCTIONING**

Since early investigations, researchers have recognized that burnout is a consequence of a complex interaction between situational and personal factors (e.g., Gould et al., 1996b). Although a common belief is that situational factors are more strongly associated with burnout than individual characteristics (e.g., Maslach & Goldberg, 1998, Maslach et al., 2001), examining dispositional characteristics associated with this syndrome has been a popular approach in the sport domain. Concomitant with the recognition that burnout has roots in both stress- and motivation-related processes, researchers have examined the relationship of dispositional factors linked to those processes such as perfectionism, hope, and optimism. Of the myriad of dispositional factors potentially associated with burnout, perfectionism has received the most empirical attention.

### **Perfectionism**

Perfectionism is a multidimensional personality characteristic involving a specific constellation of cognitions, affect, and behavior that result in unrealistically high personal standards and tendencies for overly critical self-evaluation (Flett & Hewitt, 2002, 2005; Frost, Marten, Lahart, & Rosenblate, 1990). It is widely recognized that perfectionism can be associated with a variety of negative outcomes. In fact, Hall, Hill, and Appleton (2012) note that perfectionism may condemn achievement-obsessed athletes to a life of sporting purgatory. However, other researchers suggest that some perfectionism dimensions are associated with positive outcomes and may underpin adaptive motivational characteristics that enhance performance and well-being (Gotwals, Stoeber, Dunn, & Stoll, 2012). The potentially maladaptive nature of perfectionism, along with the controversy as to whether it can be adaptive in some circumstances, has led sport psychology scholars to assess the relationship between perfectionism and burnout.

In an early athlete burnout study, Gould and colleagues (1996a) examined the perfectionism-burnout relationship in a sample of young American tennis players. Athletes thought to be suffering from burnout scored higher than control athletes in four of the six

dimensions of Frost and colleagues' (1990) Multidimensional Perfectionism Scale, specifically perceived parental criticism, perceived parental expectations, need for organization, and concern over mistakes. The two groups of athletes did not differ on personal standards or doubts about action. Subsequent research has found that personal standards show a weak relationship with burnout (Gotwals, 2011). However, athletes who strive to reach flawless performance standards based on internalized standards and engage in overly critical self-evaluative processes (i.e., evaluative concerns) appear to be at risk of burnout (Lemyre, et al., 2008; Chen, Kee, Tsai, 2009).

Though some researchers (e.g., Frost et al., 1990) differentiate personal standards and evaluative concerns (i.e., concern over mistakes and doubts about action) when operationalizing perfectionism, another common approach is to differentiate self- and socially-prescribed perfectionism (Flett & Hewitt, 2002). Self-oriented perfectionism is characterized by inwardly directed self-critical evaluative processes associated with striving to reach flawless, internalized performance standards. In contrast, socially-prescribed perfectionism is characterized by the perception that important others impose extremely high standards and are overly critical of achievement strivings. This form of perfectionism is associated with athletes seeking recognition, reinforcement and approval from important others. In a series of studies by Hill, Hall, Appleton and colleagues socially-prescribed perfectionism has been found to positively associate with burnout (e.g., Appleton et al., 2009; Hill & Appleton, 2011; Hill, Hall, Appleton, & Kozub, 2008; Hill, Hall & Appleton, 2010; Hill, Hall, Appleton & Murray, 2010). Correlations between self-oriented perfectionism and burnout are generally lower in magnitude than those found for socially-oriented perfectionism and often are negative in direction (see Gotwals et al., 2012). Thus, while socially-oriented perfectionism is consistently debilitating in terms of its relationship with burnout, some research suggests that self-oriented perfectionism is not necessarily debilitating, but may be considered a vulnerability factor through its association with a variety of potential mediators.

Hill and colleagues have evaluated mediation models to understand individual characteristics that may help explain the perfectionism-burnout relationship. For example, Hill, Hall, and Appleton (2010) found that socially-prescribed perfectionism was positively related with avoidant coping. In contrast, self-oriented perfectionism was positively associated with problem-focused coping and negatively associated with avoidant coping. Problem-focused coping was inversely related with athlete burnout and avoidant coping was positively related with athlete burnout. Other work has shown that the relationship between perfectionism and burnout may be mediated by motivation type (Appleton & Hill, 2012; Jowett, Hill, Hall, & Curran, 2013).

In addition, perfectionism may be associated with burnout in part through sense of self-variables such as contingent self-worth, unconditional self-acceptance, and validation seeking (Hill et al., 2008; 2010). For example, Hill et al. (2008) found that unconditional self-acceptance partially mediated the relationship of both socially- and self-oriented perfectionism with burnout. Although self-oriented perfectionism was negatively associated with burnout, it also had an indirect association through unconditional self-acceptance. Higher self-oriented perfectionism was associated with lower unconditional self-acceptance. In turn, lower unconditional acceptance was associated with higher burnout. It is also plausible that when self-worth is contingent on performance, both socially- and self-prescribed perfectionism may be associated with burnout. In addition to the aforementioned mediators, the impact of self-oriented perfectionism may depend on the extent to which

athletes are making progress toward their goals. Self-oriented perfectionism may create vulnerability in times of adversity that is not apparent in times of success (Hall et al., 2012). In addition to examining mediators, longitudinal research evaluating the impact of self-oriented perfectionism on burnout may shed greater insights on its relationship with burnout. It is possible that self-oriented perfectionism, while negatively and weakly related with burnout based on cross sectional research, may nonetheless create long term vulnerability.

To date, most research on perfectionism and burnout has taken a variable-centered approach in which the relationships of individual dimensions of perfectionism with burnout are examined along with potential mediators of that relationship. When considered in isolation, perfectionism dimensions reflecting a commitment to high standards are associated with positive motivational outcomes whereas dimensions reflecting evaluative concerns are associated with negative outcomes. However, this disaggregated approach does not capture the composite of perfectionism dimensions experienced by individual athletes. By definition perfectionism is a multidimensional personality construct. Considering facets of perfectionism in isolation of others provides a limited and somewhat artificial view that may not reflect the essence of perfectionism. Consequently, researchers have advocated a person-centered approach where the focus is on the pattern and interaction between individual dimensions or features that collectively describe perfectionism (e.g., Gotwals, 2011; Lundh, Saboonchi, & Wångby, 2008).

In effort to provide an integrative understanding of this multi-faceted personality disposition, Gaudreau and colleagues (Gaudreau & Thompson 2010; Gaudreau & Verner-Filion, 2012) and Stoeber and Otto (2006) have identified overarching perfectionism profiles. Although using differing terminology, both groups describe what they label (a) mixed/unhealthy perfectionism (high personal standards and high evaluative concerns), (b) personal standards/healthy perfectionism (high personal standards and low evaluative concerns), and (c) low perfectionism (low personal standards and low evaluative concerns). Gaudreau and colleagues additionally highlighted a fourth evaluative concerns perfectionism profile (low personal standards and high evaluative concerns). Conceptually, mixed perfectionism and especially evaluative concerns perfectionism are considered maladaptive. Although results have not been entirely consistent with predictions, several studies adopting a person-centered approach (e.g., Cumming & Duda, 2012; Gotwals, 2011; Hill, 2013) have supported, at least in part, that mixed perfectionism is associated with elevated burnout scores. In addition, athletes characterized by evaluative concerns perfectionism report the highest burnout scores. Athletes with low perfectionism or personal standards perfectionism report relatively low burnout scores.

Although high evaluative concerns (with or without high personal standards), along with socially oriented perfectionism, are predictors of burnout, it is still widely debated whether perfectionism can be adaptive under certain circumstances. Part of the controversy surrounding the potentially adaptive nature of perfectionism stems from the fact that the distinction between perfectionism and striving for excellence is blurred (Hall et al., 2012). Confusion may stem from using terms such as personal standards perfectionism, perfectionistic strivings, or healthy perfectionism to describe adaptive achievement strivings defined by high personal standards. It is certainly plausible that the pursuit of high standards, a central feature of perfectionism, is potentially a powerful energizing force necessary to achieve excellence and may lead to positive motivational outcomes. However, perfectionism involves more than the pursuit of high standards. By definition, perfectionism also involves

an overly critical self-evaluation and self-worth tied to achievements. Athletes with high personal standards devoid of evaluative concerns are not perfectionists in the multidimensional sense of the term. Similarly, it is unclear whether athletes characterized by high evaluative concerns and low personal standards should be categorized as “evaluative concerns perfectionism”. By possessing low personal standards, they lack a defining feature of perfectionism. In short, when perfectionism dimensions are viewed in isolation of other defining features, researchers may be describing different psychological constructs. Perfectionism, viewed as a multidimensional construct that involves striving for exceedingly high standards and engaging in overly self-critical self-evaluation, is generally positively associated with burnout. Having high personal standards, in and of itself, is not strongly associated with burnout.

## **Optimism**

Optimism is most commonly defined as a unidimensional personality trait ranging from optimism to pessimism (Scheier & Carver, 1985). Optimism refers to generalized positive expectations of a favorable nature while pessimism refers to generalized expectations of an unfavorable nature (Ferrando, Chico, & Tous, 2002). Conceptually, optimism should create less burnout vulnerability and pessimism greater risk. Few studies have examined the optimism-burnout relationship; however optimistic athletes appear to be at less risk of suffering burnout than pessimistic ones. This relationship is fairly weak and is mediated by perceived stress. Optimistic athletes perceive less stress and, in turn, report lower burnout (Chen, Kee, & Tsai, 2008; Gustafsson & Skoog, 2012).

## **Hope**

Another dispositional factor that may be linked to burnout is hope. One of the most widely accepted conceptualizations of hope was developed by Snyder and colleagues (1991), who include the two primary components of agency thinking and pathway thinking. Agency thinking is belief in possessing the ability or capacity to reach personal goals. Pathway thinking is the perceived capacity to find alternative routes or pathways to goals when facing adversity or when habitual pathways are blocked. Individuals with high levels of hope believe in their ability to succeed and ability to plan successful alternative routes when facing obstacles and difficulties. As a consequence of their positive perceptions, these individuals are dedicated and energized in the pursuit of excellence. In contrast, those individuals with low hope lack these beliefs and consequently devote less energy to attaining their goals and are more vulnerable to burnout. Although sport psychologists have highlighted the importance of hope in the quest to achieve excellence (e.g., Curry, Snyder, Cook, Ruby, & Rehm, 1997; Gould, Dieffenbach, & Moffett, 2002), few studies have examined the relationship between hope and burnout. In one study to do so, Gustafsson, Hassmén, and Podlog (2010) used a state, rather than trait, hope measure and found a statistically significant negative correlation between the beliefs that underpin hope and burnout. Their findings suggest that the development of agency and pathway thinking could potentially reduce the risk of burnout.

The examination of dispositional constructs has increased understanding of athlete burnout. However, the relationship between those constructs and burnout is often relatively low in magnitude, presumably because situational or contextual factors also play a role in burnout processes. Thus, developing an increased understanding of the role that dispositional factors play in the burnout process may be developed by examining their interaction with situational factors. For example, the association of individual factors such as perfectionism with burnout may be impacted by situational factors such as the coach leadership style and the team motivational climate. Although a variety of situational factors exist that may create burnout vulnerability such as identified in the stress and motivation sections of this chapter, often overlooked situational factors that may affect burnout processes relate to culture. Culture can be viewed on global terms associated with ethnicity and nationality as well as on a more local level related to the sport culture or team climate. Given that several situational factors associated with burnout have been discussed in earlier sections of this chapter, the next section will focus on culture with a focus on nationality.

## **NEED FOR CROSS-CULTURAL RESEARCH TO UNDERSTAND BURNOUT AND POSITIVE FUNCTIONING**

Culture is broadly defined as a shared pattern of cognitions, affect, and behavior that is developed through the socialization process and that identifies the members of the group while also distinguishing them from other groups. Given that culture likely influences burnout processes, there is value in cross-cultural research aimed at understanding human functioning. Cross-cultural research involves comparative research aimed at understanding similarities and differences in psychological phenomena across multiple cultures. Although athlete burnout has garnered worldwide research interest, Goodger, Gorely, et al. (2007) report that 46% of published studies have sampled athletes from the United States. Of the studies sampling athletes from elsewhere, most were from English speaking countries such as New Zealand and Great Britain. Though these respective countries have distinct cultures, it is sometimes assumed that findings will generalize across them and other cultures. There have been few distinct efforts to pursue cross-cultural comparisons. Such efforts are important because cultural factors may influence psychological processes (e.g., Berry, Poortinga, Segall, & Dasen, 2002; Shiraev & Levy 2010; Triandis & Brislin, 1984). Consequently, once a psychological process has been identified and defined in a given sociocultural setting, its differences and similarities in other cultural and ethnocultural groups need to be studied. This step should not be considered secondary; rather, it should be viewed as an essential step in developing generalizable scientific theory. Echoing advocates of sport-based cross-cultural research (Duda & Hayashi, 1998; Ryba, Schinke, & Stambulova, 2012; Schinke & Hanrahan, 2009), cultural factors may influence burnout-related processes on multiple levels. These levels include the (a) conceptual underpinnings and associated measurement, (b) prevalence, and (c) potential antecedents and consequences. Thus, examining cultural influences on burnout processes has the potential to meaningfully advance the knowledge base.

Few studies have evaluated whether conceptualizing athlete burnout as a syndrome characterized by exhaustion, devaluation, and reduced sense of accomplishment is germane cross-culturally (e.g., Tabei et al., 2012). Rather, it is typically assumed that burnout is



conceptually equivalent across cultures and that items from an English burnout measure that are translated/back translated will enable successful study of burnout in non-English speaking countries. The most commonly used measure of athlete burnout is the Athlete Burnout Questionnaire (ABQ; Raedeke & Smith 2001; 2009). This measure has been translated and used in sport burnout research across several continents including the Americas (Brazil, Canada, USA), Asia (China, Japan, Iran, Taiwan), Australasia (New Zealand) and Europe (France, Germany, Norway, Portugal, Spain, Sweden, UK). To this end, it has been translated or adapted to other languages and cultures, including, but not limited to, Arabic (Altaheyneh, 2005; Heidari, 2013), Chinese (Chen & Kee, 2008; Lu, Chen, & Cho, 2006), French (Perreault et al., 2007), German (Ziemainz, Abu-Omar, Raedeke, & Krause, 2004), Japanese (Tabei et al., 2012), Norwegian (Lemyre et al., 2007, 2008), Portuguese (Pires, Brandão, & Silva, 2006), Spanish (Arce, de Francisco, Andrade, Arce, & Raedeke, 2010), and Swedish (Gustafsson et al., 2007b; Smith et al., 2010). As is common in the organizational psychology literature, psychometrics associated with the translated scales are not always examined.

In studies examining construct validity in other nationalities, researchers have generally supported the conceptual foundation of the ABQ (e.g., Arce et al., 2010; Heidari, 2013; Smith et al., 2010). However, there is a need to assess whether psychometric properties of scores derived from the ABQ are invariant across cultures. Beyond evaluating the nature of burnout across cultures, establishing the psychometric invariance of burnout scores across cultures is critical in facilitating cross-cultural comparison of research findings. Assuming such invariance, it is also possible that mean scores for each burnout dimension vary across cultures. This may suggest differences in the magnitude of burnout perceptions and its prevalence in certain cultures. This issue has not been directly examined in the sport domain; however, organizational psychology research has shown mean score differences in burnout dimensions across nationalities (Maslach et al., 1996).

It is also possible that specific antecedents of burnout may vary across cultures. For example, while burnout as a stress response is potentially similar cross-culturally, the specific sources of stress that trigger burnout may vary across cultures. Cultural differences in the manner in which athletes interpret sources of stress, employ coping strategies, and experience social factors associated with stress and coping processes may also exist. To illustrate, Cresswell and Eklund (2006; 2007) interviewed rugby players in New Zealand and the United Kingdom to evaluate the extent to which the multidimensional conceptualization of burnout reflected the experience of athletes from different organizational cultures. They concluded that the experiential characteristics associated with burnout, including exhaustion, devaluation, and reduced sense of accomplishment, are robust across organizational cultures despite varying situational and environmental demands associated with burnout. Thus, even if the experiential syndrome of burnout is similar across cultures, the specific antecedents and consequences associated with it may vary.

## **INTERVENTION STRATEGIES FOR PREVENTING BURNOUT AND ENHANCING POSITIVE FUNCTIONING**

Although correlational and qualitative studies on athlete burnout have proliferated in the past few years, few studies have evaluated interventions designed to prevent or treat burnout

(e.g., Jouper & Gustafsson, 2013). Thus, the knowledge base on intervention strategies is not well developed. One of the challenges in developing interventions is that burnout is a relatively chronic state. In fact, there are no known widely supported effective treatments for treating burnout once it occurs. Therefore, interventions designed to prevent burnout by eliminating or modifying factors that potentially cause it are critical (i.e., primary prevention focus). Interventions designed to help athletes manage or cope with conditions that might lead to burnout (i.e., secondary prevention) are likely more effective than interventions for athletes already suffering from burnout (i.e., tertiary prevention). In light of the chronic nature of burnout, clearly there are advantages of pursuing proactive prevention strategies over a reactive treatment approach.

The relative absence of empirically tested intervention strategies requires that recommendations for burnout prevention be viewed with some caution. One viable strategy to prevent burnout is to target theory-based variables associated with it in intervention design. These can range from individual characteristics (e.g., perfectionism) to the social structure of sport (e.g., coach and parent behaviors, training demands/recovery). Given the complexity of burnout, interventions that are multi-modal in nature will be the most effective. In the next section we provide theory-based practice principles that can be used to guide interventions to prevent burnout.

## **Stress-Recovery Intervention Strategies**

It is widely recognized both within overtraining and burnout research that stressors associated with sport participation are varied and originate from outside and within the sporting environment. In addition, athlete responses to stress depend to a large degree upon the capacity to manage and cope with each source of stress. Given the conceptual overlap between overtraining and burnout, several themes for preventing and treating these maladaptive states emerge from a position paper developed by the European College of Sports Science and the American College of Sports Medicine on the overtraining syndrome (Meeusen et al., 2013) and a recent professional practice review on athlete burnout (Goodger & Kenttä 2012).

The first theme centers on monitoring training stress, performance, psychosocial stressors, and the availability and use of recovery resources. Aligned with this, training load should be individualized based on training background and the daily physical and mental status of the athletes. Adjusting daily training intensity/volume, or allowing a day of complete rest, when performance declines or when the athlete complains of excessive fatigue is appropriate. With this in mind, it is helpful to assure a full rest day every week with high quality recovery. Excessive monotony of training can be avoided by promoting cross-training (i.e., enhance variation by using other training disciplines and systems). At early stages of overtraining, a brief period of recovery such as a week or two may be sufficient. Chronic exhaustion should be treated with extended rest and time away from sport. It is not possible for an athlete to 'train through' a long lasting performance slump caused by excessive training and inadequate recovery. This might even require that an athlete does not compete.

Another theme pertains to the importance of recovery from a holistic perspective. Basic recovery strategies such as rest, sleep, optimal nutrition, and hydration status should be emphasized. It is also valuable to teach, promote, and emphasize the importance of

psychosocially oriented recovery strategies that increase energy and vitality. These include social support, relaxation exercises (mindfulness, meditation), mentally uplifting/energizing activities, non-demanding creative activities and nature experiences that provide a mental break from sport. Non-competitive physical exercises such as low intensity forms of yoga and stretching can also promote recovery.

A program for elite orienteering athletes highlights how some of the above guidelines were implemented to minimize stress and enhance recovery, thereby facilitating adaptive response to high volumes of physical training during a competitive season. Ever since the very first burnout conceptualizations, there has been widespread agreement that burnout is a reaction to chronic stress resulting in exhaustion. For this reason, the intervention specifically targets non-training stressors perceived to cause fatigue or exhaustion and employs psychosocially oriented recovery strategies (Kenttä & Svensson, 2008).

At the first session, athletes were provided a theoretical review of stress, overtraining, burnout and recovery and then provided an in-depth description of non-training stressors. Then they were requested to think about their life as an elite athlete and reflect on *“What makes you tired in your daily life besides your normal training routine? Write down your personal top-three list with ‘issues’ that make you tired on a daily basis.”* Athletes discussed their response in small groups and generated consensus on a top-three list, which was then shared in merged groups as well as the entire team. Key themes emanating from this discussion dealt with strained relationships, outside obligations, and balancing sport with work or school. Athletes reflected upon how frequently the listed non-training stressors occur during a normal week. They also reflected on the potential to delete any one stressor, reduce the intensity and/or frequency of the stressors, and better cope with the stressors. Lastly, athletes made a decision to target one stressor the next day.

A second session was formatted the same way and was devoted to examining psychosocially oriented recovery strategies. Athletes were asked to consider *“When you are exhausted and tired in your daily life what do you do to recover outside of training, beyond the very basic recovery strategies such as sleep, nutrition and hydration? Write down your best three recovery strategies that work for you by enhancing recovery and/or regaining energy.”* After discussion and consensus on potential recovery strategies was obtained, athletes discussed the influence recovery strategies had on both physiological and mental recovery, whether the strategies enhanced unwinding and relaxation as well as created positive energized feelings, affective responses during the recovery activity, and ease of performing the recovery activity. Lastly, athletes made a decision to engage in one recovery activity the following day. Common strategies identified included spending time in supportive relationships, planning for personal time with no obligations, engaging in low intensity exercise, enjoying spa, sauna and massage treatments, and changing the environment and/or activities. Finally, in a third session, athletes were provided tools (e.g., self-reflective logbook, emotional recovery questionnaire, Lundqvist & Kenttä, 2010) to monitor nontraining stressors and recovery strategies to complement the monitoring of training. They were encouraged to use these tools and developed a plan to use the information obtained from the program for the full season.

Given that psychosocial stressors associated with sport involvement play a central role in burnout, developing athletes' stress management skills may be useful for burnout prevention and treatment. These skills might involve traditional stress management strategies such as effective goal setting, stress inoculation training, relaxation/meditation, assertiveness training,

and interpersonal and social skill training. However, teaching general stress management skills is likely less effective than tailoring stress-based interventions to an athlete's specific stressors.

Interventions with the goal of removing salient stressors may more effectively prevent burnout than simply having individuals learn to cope with stressful sport environments. Although burnout, at least in part, is a consequence of chronic stress, it is premature to conclude that teaching athletes stress management skills geared at the individual will be the most effective intervention approach. In fact, some scholars argue that social-environmental factors have a larger role in burnout than individual factors, at least in work settings. If that is also true in sport, interventions that target the sport environment will be more efficacious than those that target the individual. Taken one step further, some scholars suggest that teaching athletes how to cope with stress is analogous to treating burnout with a band aid (e.g., Coakley, 1992). Those strategies do not address the underlying cause of burnout, which is how sport is structured, and only address symptoms of the deeper problem. Thus, in addition to teaching stress management as part of life skill development, social-environmental modifications that are informed by theory and designed to create more positive sport experiences for athletes are needed as highlighted by motivation theory

## **Motivation Theory Intervention Strategies**

The motivational perspectives overviewed earlier in this chapter (i.e., achievement goal theory, sport commitment, self-determination theory) have received some degree of empirical support and can offer guidance for efforts to prevent athlete burnout. These perspectives suggest that central concerns in burnout prevention efforts should be the motivational climate fostered by significant others, the degree to which athletes recognize the rewarding features of their sport involvement, the degree to which athletes maintain some level of control of their sport involvement, and basic psychological need fulfillment. Collectively these matters are addressed by attending to the athlete–sport culture fit. A good fit is one that meets the needs of the athlete relative to both performance development and well-being. Fortunately, both of these ends can be pursued with thoughtful attention to what is emphasized in the sport context. Well-being need not be promoted at the expense of performance or vice versa.

Fostering a task-involving climate where coaches, parents, and teammates reward improvement, effort, and valuing of others, while also de-emphasizing ego-involving elements such as normative comparison and social conflict would be expected to temper burnout perceptions (Lemyre et al., 2008; Reinboth & Duda, 2004; Smith et al., 2010). Communicating the availability of social support among teammates also may help prevent burnout. In college athletes DeFreese and Smith (2013b) found that perceived support availability from teammates, regardless of actual received support, associated inversely with burnout and positively with self-determined motivation. Thus, knowing that a support network is available can be meaningful whether or not the network is put to use. Athletes also should be encouraged to reflect on the benefits of their participation and sport structured in a way that allows athletes to achieve desired benefits. They should also be offered opportunity to make or collaborate on decisions about their sport participation. In addition, sport could be structured in a way that empowers athletes to develop multi-faceted identities, encourages them to maintain life balance where they pursue activities outside of sport, and gives them

control over their sport experiences. Finally, enhancing enjoyment-based commitment and minimizing feelings of entrapment should be central components of interventions. Entrapped athletes will continue to invest in their involvement in circumstances that are motivationally maladaptive, which increases burnout risk (Raedeke, 1997).

Developing a sport context that fosters task-involvement and adaptive commitment should also help meet, fundamental needs that undergird self-determined motivation. Such contexts direct athlete attention to skill development and effort and thereby contribute to enhanced competence perceptions. Such contexts also afford a sense of autonomy, in that athletes have greater control over their efforts than normative outcomes, the benefits of the present activity are focal rather than the absence of attractive alternatives, and decision-making is shared. Finally, because such contexts are encouraging and collaborative in nature, emphasize the availability of support, and attend thoughtfully to the conflicts that will naturally arise in sport, they fuel a sense of belonging that fulfills the fundamental need for relatedness. In fulfilling fundamental needs, self-determined motivation is promoted (Deci & Ryan, 2000).

Preventing athlete burnout by addressing the athlete-sport culture fit is very much in line with the job-person fit model of burnout and engagement that appears in the organizational psychology literature (see Maslach & Leiter, 1997; 1999). This model is concerned with the perceived congruence of resources that are both personally desired and (potentially) organizationally provided. Burnout is more likely when personal desires and organizational provisions are incongruent, whereas positive human functioning, including engagement, is more likely when the organization meets personal needs. Accordingly, the greater the misfit between the person and the sport culture, the greater the likelihood of burnout. This approach has potential to offer insights on burnout and engagement antecedents as well as strategies to promote adaptive outcomes because it focuses attention on the interaction of the person and sport environment rather than either the person or the sport environment in isolation of the other.

Aligned with tenets of positive psychology, engagement is often viewed as the conceptual antithesis of burnout. In fact, Maslach and Leiter (1997) suggest that burnout is the erosion of engagement. Athlete engagement has been recently explored and is characterized by confidence, dedication, vigor, and enthusiasm (see Lonsdale, Hodge, & Jackson, 2007; Lonsdale, Hodge, & Raedeke, 2007). Engagement and its distinguishing characteristics are strongly inversely associated with the corresponding burnout dimensions. This suggests that interventions can be designed to achieve two ends. Distinct intervention strategies to reduce burnout and promote engagement, respectively, are not required. Thus, developing an understanding of the nature of engagement itself and the processes underlying it might provide the underpinnings for developing effective intervention strategies for increasing athlete engagement and thereby preventing burnout.

In a recent study of collegiate American football players, DeFreese and Smith (2013a) found support for the job-person fit model of burnout and engagement. They looked at the perceived congruence of athlete and team on six 'areas of worklife' (Leiter & Maslach, 2004), specifically with regard to workload demands, control, rewards, sense of community, fairness, and values. Each of the areas of worklife correlated with all burnout and engagement dimensions, such that greater perceived congruence was associated with higher engagement scores and lower burnout scores, respectively. Overall, this study suggests that the areas of worklife are meaningful within the athletic context and warrant attention in intervention

efforts designed to prevent burnout and foster engagement. Indeed, the job-person fit model of burnout and engagement interfaces nicely with the stress and motivational frameworks overviewed in this chapter. These frameworks can be leveraged to help prevent chronic stress, fulfill basic psychological needs, orient athletes toward the team in adaptive ways, and ultimately foster healthy commitment over entrapment.

## CONCLUSION

Understanding the burnout syndrome and how it can be prevented to facilitate positive adaption and functioning is indeed complex. The complexity of burnout is reflected in the challenge of identifying and integrating the myriad of stress- and motivation-related processes that may contribute to its development. Reflecting its complexity, research on athlete burnout has proliferated in recent years from a variety of conceptual frameworks, which has contributed to an enhanced understanding of individual and situational factors that play a role in athlete burnout. This knowledge provides insights on potential strategies for preventing its occurrence as well as structuring sport to result in positive functioning. However, minimal research has empirically tested the feasibility and effectiveness of interventions designed to prevent or treat burnout as well as enhance engagement in sport settings. As a starting point in developing interventions designed to prevent burnout and promote adaptive sport outcomes, theory-based constructs could be targeted in a way that creates an optimal athlete-sport culture fit.

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*Chapter 7*

## **EMOTIONAL EXPERIENCES AND COPING IN SPORT: HOW TO PROMOTE POSITIVE ADAPTATIONAL OUTCOMES IN SPORT**

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### **ABSTRACT**

Adaptation in athletic contexts refers to an ongoing process of continual adjustment to changing physical, social, and psychological conditions in the sport environment. Athletes' physical, social, psychological, and emotional functioning is never static or fixed, but instead these outcomes are always dynamic and changing. In this chapter we review definitions of adaptation within the sport psychology literature, in addition to related concepts such as resilience, mental toughness, and stress-related growth. We then focus on the role of emotions in athletes' process of adaptation, elaborating on how emotions arise and how they impact sport performance. Throughout the chapter we provide suggestions for future research to advance theory in this area, and we also provide practical suggestions for promoting positive adjustment among athletes.

### **INTRODUCTION**

Successful athletes are frequently characterized by their dedication to pursuing their goals, yet athletes are confronted with challenges in sport and must continually adjust to these challenges for optimal performance. Athletes face many obstacles in their pursuit of excellence including injury, performance plateaus, performance setbacks, superior opponents, relationship issues, financial hardships, and organizational politics (Hanton, Fletcher, and

Coughlan, 2005; Hoar, Kowalski, Gaudreau, and Crocker, 2006; Mosewich, Kowalski, and Crocker, 2013). These challenges and potential threats to personal and social goals can trigger a range of positive and negative emotions that influence subsequent cognitive, behavioural, and emotional regulation. Emotional regulation through coping is critical for successful performance and positive adaptation (Crocker, Kowalski, and Graham, 2002; Uphill and Jones, 2012). The purpose of this chapter is to review literature regarding adaptation, emotions, and coping among athletes. We will begin by discussing the concept of adaptation and related constructs and what it means to promote positive adaptational outcomes in sport. We then discuss the importance of emotions in athletes' adaptation process and how components of the emotion process can influence performance and social functioning. In particular, we review contemporary theory and evidence of how negative and positive emotions can influence athlete adjustment. This is followed by a discussion of how coping can help regulate emotions by presenting various intervention studies using cognitive and behavioural skills to promote positive outcomes among athletes. Finally, we conclude by examining some future areas for research and by identifying key factors to promote positive functioning among athletes.

## **CONCEPTUAL AND EMPIRICAL FINDINGS**

### **Defining Adaptation**

Definitions of adaptation within a sport context have been largely informed by physiological perspectives examining overtraining, staleness, and burnout among athletes. Within models of athletic training and recovery, adaptation is described as performance gains which result from the athlete's training program, while maladaptation refers to performance losses due to excessive training (Kenttä and Hassmén, 1998). However, traditional conceptualizations of adaptation focus heavily on athletes' physiological gains or losses and they have been criticised for not fully integrating the athlete's psychological and emotional responses to training which could contribute to negative outcomes (Tenenbaum, Jones, Kitsantas, Sacks, and Berwick, 2003). Athletes face multiple demands and challenges in sport, including performance concerns, conflicts with teammates, opponents, or coaches, pressure to perform, poor referee calls, and injuries (Hoar et al., 2006; Nicholls and Polman, 2007). These demands and challenges can contribute to athletes' positive or negative adjustment in sport and a definition of adaptation should address athletes' physical, emotional, behavioural, and cognitive responses to those conditions.

Recently, researchers within the field of sport psychology have argued for an expanded view of the concept of adaptation. Tenenbaum and colleagues (2003) forwarded a model of stress response among athletes which incorporated appraisals, stressors, coping, personality characteristics, and dispositional states which contribute to states of adaptation. Tenenbaum and colleagues described athletes' states of adaptation as occurring along a continuum from failed adaptation to successful adaptation, with athletes exhibiting varying physiological, emotional, cognitive, and behavioural responses depending on their state of adaptation. They used the term failure adaptation to refer to "a state of physiological, behavioural, emotional, and/or cognitive malfunction due to inadequate adaptive responses towards the situation"



(Tenenbaum et al., 2003, p. 20) occurring as a result of inadequate responses to stressors. Athletes in a state of failed adaptation have failed to cope with a situation effectively, and they may exhibit physiological exhaustion, behavioural avoidance or withdrawal, negative cognitive responses (e.g., negative self-talk, learned helplessness), and performance decrements. Successful adaptation was defined as “a physiological, behavioural, emotional, and/or cognitive return to an overcompensated state of homeostatic functioning” (Tenenbaum et al., 2003, p. 20), resulting from the athletes’ employment of appropriate coping responses within the situation. Although Tenenbaum et al. (2003) used the term homeostasis to describe athletes’ adaptation states, the authors acknowledged that athletes in a state of successful adaptation should not only adapt to a stressor, but athletes should also acquire the ability to function more effectively when faced with similar situations in the future. This is consistent with the notion that adaptation does not consist of a return to a neutral set-point or to a previous level of functioning, but rather adaptation is a process of continual adjustment to changing physical, social, and psychological conditions, and that “successful adaptation fosters new resources” (Hobfoll, 2001, p. 358) which contribute to an ongoing process of acquiring, maintaining, and fostering resources to deal with future stressors. Indeed, it is necessary for athletes to constantly improve or develop new physical, cognitive, behavioural, and emotional skills to successfully meet the demands of increasingly more difficult athletic competitions (Hanin, 2000).

The term adaptation has been used at times to refer to both a process and an outcome or as homeostasis (Schinke, Tenenbaum, Lidor, and Battocchio, 2010), which can be problematic for researchers attempting to conceptualize and investigate adaptation among athletes (Tamminen and Crocker, in press). In order to avoid confusion regarding the definition of adaptation as an outcome or as a process, we use the term adaptation to refer to a process and adjustment to refer to various outcomes related to athletes’ functioning. Thus, drawing on the literature in sport (Cerin, Szabo, Hunt, and Williams, 2000; Mellalieu, 2003; Tenenbaum et al., 2003) and in the broader field of psychology (e.g., Lazarus, 1991; Lucas, Clark, Georgellis, and Diener, 2003), we suggest that adaptation in sport is *an ongoing process of continual adjustment to changing physical, social, and psychological conditions*. The process of adaptation involves athletes’ appraisal of stressors, emotional, cognitive, behavioural, and physiological responses, and adjustment to appraised conditions through automatic self-regulatory processes as well as through rational, planned behaviors and coping responses. Various personal and social/contextual factors influence athletes’ process of adaptation, including age, competitive experience, perceived resources and support, attentional processing, competitive demands, constraints, and opportunities.

In terms of assessing athletes’ successful or unsuccessful adjustment, we suggest that positive or negative functioning may be determined by various adaptational outcomes such as positive or negative physiological, emotional, and behavioural responses (Tenenbaum et al., 2003), psychological wellbeing or happiness, life satisfaction, (e.g., Diener, Lucas, and Scollon, 2006; Gaudreau and Antl, 2008), sport satisfaction, positive emotions (e.g., Blanchard, Amiot, Perrault, Vallerand, and Provencher, 2009), and peak performance or subjective goal attainment (Nicolas, Gaudreau, and Franche, 2011). Adaptational outcomes could also include physical fitness, confidence, self-esteem or self-concept, as well as improved morale, physical health, social functioning, and reduced emotional distress or dysfunction (Lazarus, 1993). Thus, successful or unsuccessful adjustment to changes in the

athlete's environment could be determined with a number of different indicators, depending on which outcomes are relevant for the athlete.

Since adaptation is a process of continual adjustment to changing conditions, athletes' physical, psychological, social, and emotional functioning is never static or fixed as an end-point to be achieved. Rather these outcomes are always dynamic and changing. Thus, individuals are continually in a 'dynamic process' (Lucas et al., 2003) of appraising and adjusting to stressors and environmental conditions, reaching new set-points or levels of functioning with each challenge they face.

### **Related Concepts: Resilience, Mental Toughness and Stress-Related Growth**

It is worthwhile to briefly address some concepts which are related to adaptation processes in sport. Resilience has been defined as "a dynamic process encompassing positive adaptation within the context of significant adversity" (Luthar, Cicchetti, and Becker, 2000, p. 435). Research among high-performance athletes suggests that athletes' psychological factors (e.g., positive personality, motivation, confidence, focus, and perceived social support) serve as protective factors against potential negative effects of stressors by influencing athletes' challenge appraisal and meta-cognitions, resulting in facilitative responses and optimal sport performance (Fletcher and Sarkar, 2012). Responses which contributed to peak performances among Olympic champions who were considered to be 'resilient' athletes included cognitive evaluations of situations which emphasized the athletes' taking personal responsibility for their thoughts, feelings, and actions, increasing effort and commitment to their decisions (Fletcher and Sarkar, 2012).

Recently, researchers have suggested that beyond the individual level, groups of athletes can develop team resilience, which is defined as "a dynamic, psychosocial process which protects a group of individuals from the potential negative effect of stressors they collectively encounter" (Morgan, Fletcher, and Sarkar, 2013, p. 552). Team resilience is proposed to be a process whereby team members use individual and collective resources to positively adapt when experiencing adversity. Four general dimensions or resources which characterized resilient teams were group structure, mastery approaches, social capital, and collective efficacy. While the concept of team resilience is relatively new within the sport psychology literature, it is theoretically similar to conceptualizations of communal coping, whereby stressors are appraised and acted upon in the context of close relationships, and it describes the efforts of individuals in a group as they cope collectively with stressors (Afifi, Hutchinson, and Krause, 2006; Lyons, Mickelson, Sullivan, and Coyne, 1998). Resilience and team resilience are therefore similar to the idea of adaptation as a process of continual adjustment to changing physical, social, and psychological conditions as an individual or as a team.

Mental toughness is another concept which is similar to athletes' successful adjustment. Jones, Hanton, and Connaughton (2002) defined mental toughness as having the natural or developed psychological edge that enables athletes to cope better than their opponents with multiple competitive, training, lifestyle demands, and to be more consistent and better than opponents in remaining determined, focused, confident, and in control under pressure. Mental toughness research has been criticized for being conceptualized and defined inconsistently across studies (Connaughton and Hanton, 2009). However, the concept of mental toughness is

related to emotion regulation and athletes' ability to respond adaptively to physical and psychological stressors in order to perform well in sport (Nicholls, 2011).

Additional research has examined coaches' and athletes' perspectives of stress-related growth following injury (e.g., Podlog and Eklund, 2006, 2009; Wadey, Clark, Podlog, and McCullough, 2013), which is thought to consist of personal growth (e.g., beliefs), psychological growth (e.g., sporting qualities), social growth (e.g., social support), and physical growth (e.g., strength). Researchers have also investigated the concept of adversarial growth, which is defined as a process of struggling with adversity which promotes higher levels of functioning than that which existed prior to the adverse event (Linley and Joseph, 2004). Adversarial growth can occur in different domains, including changes in perceptions of self (e.g., enhanced self-efficacy, personal strength), changes in relationships with others (e.g., appreciation of friends and family), and changes in philosophy about life (e.g., seeing new possibilities in life) (Joseph and Linley, 2005; Sheldon, Kasser, Smith, and Share, 2002). Thus, adversarial growth refers to changes which occur as a result of struggling with stressors which have the potential to interfere with an individual's normal functioning (Wang and Gordon, 1994). Researchers have investigated adversarial growth among high-performance athletes (Tamminen, Holt, and Neely, 2013), while aspects of positive psychological growth and posttraumatic growth have also been investigated among breast cancer survivors participating in dragon boating programs (McDonough, Sabiston, and Ullrich-French, 2011; Sabiston, McDonough, and Crocker, 2007). Adversarial growth can be conceived as a process of struggling with adversity that propels an individual to a higher level of functioning than that which existed prior to the event (Linley and Joseph, 2004).

## **Adaptation and Emotions**

Many theorists believe emotions are a critical feature of the adaptation process in humans (Cosmides and Tooby, 2000; Izard, 2009; Lazarus, 1991) and models of athlete adaptation processes and outcomes would be incomplete without an understanding of emotions and emotion regulation (Tamminen and Crocker, *in press*). Within the sport context, emotions are ever present when events are judged to be important and when personal and social goals are engaged. An athlete feels anger when an opponent is thought to be cheating, whereas joy is experienced when a valued goal is achieved. An athlete often senses anxiety before a championship match, sadness after an unexpected loss, pride when overcoming and accomplishing a difficult or challenging goal, and guilt or shame after violating an idealized standard of behaviour. Emotions are not only experienced by athletes, but by all engaged in the sporting event including support staff, coaches, and fans. We know from major sporting events like the Olympics that emotions can be experienced worldwide. These emotions are not just phenomenological subjective experiences, but rather they strongly influence actions, performance, decision-making, and social functioning in sport and life (Hackfort, 1999; Hanin, 2010; Smith and Lazarus, 1990).

Most emotion theorists agree that emotions have the power to motivate and regulate cognitions, physiology, and behaviours in sport and other domains (Ekman and Cordaro, 2011; Hanin, 2010; Izard, 2009; Vallerand and Blanchard, 2000). Emotions are a response to situations that are automatically or reflectively interpreted by the person as potentially threatening, harmful, or beneficial (Moors, 2013; Smith and Lazarus, 1990). Emotions are

more than just a positive or negative feeling state; they consist of complex psycho-neuro-physiological reactions that involves basic and higher level cognitions, subjective feelings, action tendencies, and physiological changes (Izard, 2009; Levenson, 2011; Smith and Lazarus, 1990). There is an ongoing debate about whether all of these features are involved in all emotions, but this discussion is beyond the scope of this chapter (see Izard, 2009; Prinz, 2004). It is clear, however, that successful adaptation in sport requires that athletes effectively regulate these emotion processes (Uphill and Jones, 2012). But how do specific emotions influence adaptive behaviour in sport and are some emotions more adaptive than others? To address these issues, the following sections will consider the characteristics of emotions and how emotions arise in sport, the interface between emotions and higher order cognitive processes, and the role of positive emotions in adaptation.

### *Characteristics of Emotions*

A simple characteristic of emotion is based on valence – whether the emotional feeling state is considered positive or negative. Typical positive valence emotions can include happiness, joy, pride, and hope. Negative valence emotions may consist of anger, shame, guilt, fear, anxiety, sadness, and disgust. It may be intuitive to think that negative valence emotions would be associated with negative outcomes, and thus positive valence emotions would be more adaptive. But this is not necessarily the case. Negative valence emotions may be highly adaptive in some situations in sport, whereas positive valence emotions may also be maladaptive (Crocker, Kowalski, Hoar, and McDonough, 2004; Hanin, 2000, 2010). For example, fear may be adaptive in some cases when it stops an athlete from engaging in a potentially dangerous action. A positively valence emotion such as contentment could be maladaptive if it leads the athlete not to continue to make changes in physical, tactical, and psychological skills that are required for continued success. On the other hand, some theorists have argued that positive emotions might be more adaptive than negative emotions over time. Fredrickson (2001) proposed that positive emotions like joy, pride, interest, and contentment allow individuals to broaden their thought-action repertoires, which then facilitate the building of physical, psychological, and social resources. We will consider Fredrickson's model in more detail later in the chapter when considering the interaction of cognition and emotion.

When a specific emotion is triggered, a cascade of cognitive, neural, and physiological processes are unleashed (Ekman, 1999; Levenson, 2011). Some theorists believe that specific basic or primary emotions like fear, anger, disgust, anxiety, sadness, and happiness/joy tend to have specific functionality to enhance survival and are activated rapidly in response to a survival-critical situation (Levenson, 2011). However, most theorists believe that the responses associated with these basic emotions can be modified over time by social learning. Izard (2007, 2009) argued that most basic emotions experienced by adolescents and adults actually involve dynamic emotion-cognitive interactions that he terms emotional schema. These schemas develop over time and are shaped by individual differences, learning, and social and cultural contexts. Some emotions such as guilt, shame, and pride are contingent on higher order cognitive processing that considers self-awareness, self-representations, and social and moral standards (Lazarus, 1991; Tangney and Tracy, 2012). We believe that emotions can influence adaptive processes in sport through multiple means including physiological activation that influences motor behaviour, activation of action tendencies, cognitive effects on decision-making and attention systems, the expression of emotions to

significant others in the sporting environment, and activation of learned cognitive and behavioural action plans (Hanin, 2010; Izard, 2009; Jones and Uphill, 2012). Although many of these processes have been described in detail elsewhere (Ekman, 1999; Izard, 2007; Uphill and Jones, 2012) we will provide a brief description to clarify these processes.

Many emotions are associated with a change in physiological activation through the autonomic nervous system. Fear, anxiety, and even joy are associated with elevated levels of arousal and associated changes in respiration, heart rate, blood flow, and pupil dilation. These changes may be beneficial for anaerobic or power activities in sport involving low cognitive demands such as lifting, jumping, and striking (see Jones and Uphill, 2012; Parfitt, Hardy, and Pates, 1995). However, high arousal activation may interfere with fine motor control, complex movement, and make athletes prone to over-reaction to opponents' deceptive movements (Hardy, Jones, and Gould, 1996). On the other hand, some emotions, such as sadness and shame, are typically associated with low activation levels. Such emotions are likely to be dysfunctional in many sporting situations requiring high energy levels (Hanin, 2000).

A key feature of many emotions is an action tendency which automatically prepares the person for action (Frijda, 2007; Lazarus, 1999). When afraid an athlete wants to avoid; when anxious an athlete tends to inhibit actions; when angry an athlete wants to strike out; when happy an athlete desires to be with others; when guilty an athlete has a need to engage in reparative behaviour. Such action tendencies may be functional in some sporting situations if the actions help the athlete to gain performance or social goals or if they serve a protective function. However, these action tendencies, if not suppressed and transformed, may prevent the athlete from attaining valued goals. For example, if an athlete is angry and strikes out at an opponent or official, the negative consequences could be serious. Even the action tendencies associated with positive emotions can be dysfunctional. Premature celebration associated with happiness may cause an individual or a team to lose focus at a critical period of a match. For example, during the women's snowboard cross competition in the 2006 Torino Olympics, Lindsey Jacobellis prematurely celebrated her apparent gold medal victory in one of her last jumps, only to lose her balance and fall, losing the race.

Emotions are not only felt at an individual level, they are also expressed through verbal and nonverbal means. Evolutionary perspectives suggest that nonverbal expressions for basic emotions are universal; that is there are prototypical expressions for specific emotions that are expressed and recognized across all cultures (Ekman, 1999). Most of this work has focused on facial expression. For example, when an athlete is angry, the characteristic facial expression would include eyebrows furrowed towards the nose, lips pulled back, and teeth bared. In contrast the facial expression of mouth drawn back at the corners, relaxed facial muscles, wrinkles under the eyes often signals happiness. These expressions of emotions are important in sport for social functioning, and possibly team performance, because they can signal significant information to others. For example, when an athlete is angry, with corresponding facial and bodily expression signals, others such as opponents, teammates, fans, and coaches are automatically alerted about possible potential consequences. It also sends information to others that their behaviour may not be appropriate and needs to be modified.

Although there is some disagreement in the literature about universal expression and recognition of specific emotions, most theorists agree that emotional expression can be modified or acquired through social learning in specific culture settings (Ekman, 1999). Thus

how athletes express emotions facially, bodily, and verbally in sport might not only depend on the wider social culture but also the specific sporting culture. Professional hockey players in North America are likely to express anger towards officials differently compared to Olympic gymnasts. Sporting persons will also regulate these expressions depending on the influence they wish to have on others (Hackfort, 1999; Hanin, 2010; Tamminen and Crocker, 2013). Hackfort has argued that athletes can regulate emotional expressions to mislead opponents and officials about their true emotional state.

Emotional expression may also induce a similar emotion in teammates watching the expression. This induction or catching of others' emotions is termed emotional contagion (Hatfield, Cacioppo, and Rapson, 1994). Emotional contagion appears to involve both automatic and conscious processes through which emotional expressions influence others' emotions, leading to a convergence of emotions in a group (Parkinson, 1996). Moll, Jordet, and Pepping (2010) argued that the celebratory behaviour of a teammate during a penalty shoot-out in soccer induced positive emotions in teammates, and subsequently led to the successful performance of the team. In another study related to the contagion of more general affective states, Totterdell (2000) reported that the collective positive mood of athletes on cricket teams was related to better performances. However, it should be noted that both of these studies did not provide any direct evidence of emotional contagion in teammates. It is also unclear what role higher order cognitions in relation to team and personal goals played in athletes' emotional experiences and performance.

### ***Emotions and Cognition***

When considering emotions in sport, it is critical to consider the role of cognition (Crocker et al., 2004; Vallerand and Blanchard, 2000). Many emotion theorists recognize that emotions require some form of cognition that processes the meaning of the situation in terms of significance for personal well-being (Frijda, 2007; Izard, 2007; Moors, 2013). Well-being not only involves basic survival and physical safety factors but also personal and social goals, values, beliefs, and social attachments (Moors, Ellsworth, Scherer, and Frijda, 2013). The cognitive processing required for emotions might range from very basic biologically primed perceptual representation processes to more complex high order cognitions (Ekman, 1999; Izard, 2007, Moors, 2013). The appraisal process is often automatic but can also involve reflective conscious processes. Indeed, Izard argues that most emotions are the results of an interface between emotion centers and higher order cognitive systems involving memories and thoughts related to self-representations, values, and beliefs. Emotional episodes are not only triggered by cognitive processes but can be maintained by continued rumination involving these cognitive systems.

The involvement of higher order cognitions helps to explain the varied emotional reactions within and across sport. The meaning of a particular sporting situation-athlete transaction is driven in large part by the athlete's memories, self-representations, goals, and values associated with the sport. For example, the joy of a baseball player after hitting a home run to win a championship game can only be understood by considering the meaning of the event for that athlete. The same holds for the opposing team's emotional reaction of sadness. Thus, Smith and Lazarus (1990) would suggest that most emotional experiences and reactions are meaning centered, which has resulted in emotions having greater flexibility and adaptational power in modern social settings such as sport.

There is a general consensus that cognition plays a role in the triggering and maintenance of emotional episodes, and these emotions are associated with a cascade of physiological and neural responses, as well as action tendencies. It is also thought that these components can feed back and affect the regulation of each other and subsequently influence motivated behaviour in athletes (Hackfort, 1999; Moors et al., 2013). But it begs the question about whether specific emotions are adaptive in today's sporting world. It is our view that it often depends on the situation encountered by an athlete. Many negative emotions produce physiological responses and action tendencies that might have been necessary from an evolutionary perspective. As Fredrickson (2004) noted, negative emotions often cause a person to narrow their thought-action repertoire by creating a neuro-physiological state that is geared to act in a specific way. This state might be beneficial if faced with some immediate danger that threatens one's survival. In many but not all sporting situations, however, such negative emotion processes are likely to interfere with the attainment of athletic achievement goals. For example, experiencing a 95 mph fastball zip by you in a baseball game might trigger fear, especially if it activates memories of other athletes being injured by such pitches. The emotional response of high physiological arousal, blood shunting away from hand and toward legs, facial and bodily expressions, and the urge to flee might be adaptive in terms of preserving your physical safety. However, such a response and associated avoidance-motivated behaviours would be maladaptive in terms of obtaining valued achievement goals. Some may argue that aspects of the fear (or any negative emotion) response could be harnessed and redirected towards achieving athletic goals but this would also require suppressing or transforming the fear components that obstruct goal achievement. Thus, negative emotions are not necessarily maladaptive for sport performance, although athletes must be able to recognize their negative emotions and engage in emotion regulation or coping behaviours or cognitions to overcome action tendencies which would inhibit successful sport performance.

### ***Positive Emotions***

Given that negative emotion episodes are likely to result in action tendencies which are counterproductive for an athlete's sport performance, does it follow that positive emotions are likely to be adaptive? Possibly. There is evidence that positive affective states are often associated with positive motivated behaviour in sport (see McCarthy, 2011). For example, enjoyment is linked to intrinsic motivation, sport commitment, flow experiences, and performance (Jackson, 2000; McCarthy and Jones, 2007; Orlick and Partington, 1988; Scanlan, Russell, Beals, and Scanlan, 2003). However, most research has failed to establish whether enjoyment causes these positive outcomes and not vice versa. Furthermore, Hanin (2000) has argued that specific positive emotions might prevent athletes from peak performance if experienced at the wrong time. For example, being content before a competition might lead to lack of preparation and low energy levels that hinders performance. Thus, positive emotions could have both facilitative and debilitating impacts on performance depending on the match of specific emotional reactions and accompanying cognitive/behavioural actions with the specific sporting demands.

Positive emotions could facilitate long-term positive adaptational outcomes in sport through a 'broaden and build' process that increases personal resources, leading to emotional and physical well-being, which over time could energize optimal functioning (Fredrickson, 2001, 2004). Unlike negative emotions that cause athletes to narrow their thought and action

options, positive emotions are thought to facilitate a variety of behaviours that build resources through a broadening of thought-action repertoires (Fredrickson, 1998). Action tendencies or ‘urges’ are identified by Fredrickson (2004) for specific positive emotions that have important implications for sport. Joy creates the urge to play, push the limits and be creative. Interest produces an urge to explore and take in new information and experiences. Contentment generates an urge to savor and produce new insights about oneself in relation to the world. Many sport psychology studies have identified the importance of play, exploration and interest in facilitating intrinsic motivation and the building of physical skills and social attachments (see Côté, Baker, and Abernethy, 2007; Vallerand, 2004). Engaging in these broadening thought-action repertoires should allow athletes to build their physical, social, and psychological resources. These resources should therefore produce durable changes and enhance the attainment of performance goals, as well as social goals. Fredrickson (2004) suggests that by broadening one’s mindset and building resources, people should be able to develop better psychological resiliency to cope with adversity. All these changes should enhance long-term adaptation to the constantly changing challenges of sport.

Positive emotions might also help in controlling the undesirable effects of negative emotions through two processes. First, positive emotions might undo or correct the after-effects of negative emotions (Fredrickson and Levenson, 1998). The thought-action processes associated with a specific positive emotion might be able to dismantle or change the component processes activated by a negative emotion. Second, positive emotions might facilitate the changing of meaning appraisals associated with a particular stressful athletic transaction. Since appraisal of meaning influences the generation of many emotions, any process that increases the likelihood of associating positive meanings with an event would likely produce positive emotions and associated broaden and build processes. Fredrickson (2001) argues that there is often a reciprocal relationship between positive meaning and positive emotion. Since positive emotions lead to a broadening of thought (and building of resources) this should increase the probability of finding positive meaning in future athletic situations. This ‘upward spiral’ should lead to increased physical and social well-being and better adaptation over time (Fredrickson, 2004).

The broaden and build theory of positive emotions suggests enhancing positive emotion in sport could facilitate better performance, social functioning, and physical and emotional well-being in athletes. Although several sport researchers have noted the potential importance of the broaden and build theory (e.g., McCarthy, 2011; Moll et al., 2010), there is little systematic research in sport that directly supports the tenets of this theory. Nevertheless, the emotion literature suggests sport organizations should reduce negative emotions and increase positive emotions among athletes whenever possible. The next section discusses emotional regulation, and specially how effective implementation of cognitive and behavioural skills (coping) may enhance the adaptation process in sport.

## **PRACTICAL IMPLICATIONS: EMOTION REGULATION AND COPING**

Up to this point, we have outlined how athletes’ emotional states may facilitate or hinder adaptational outcomes. This leads to the question of which strategies are effective in assisting athletes in achieving an optimal emotional state to attain their performance and social goals in



sport? To answer this question, sport researchers and practitioners have been interested in a variety of cognitive and behavioural approaches to assist athletes with emotion regulation and stress management (Bishop, Karageorghis, and Loizou, 2007; Cumming, Olphin, and Law, 2007; Hanton and Jones, 1999; Hoar et al., 2006; Turner and Barker, 2013). These approaches have been primarily centered on athletes' use of mental skills such as self-talk, imagery, goal setting, rationalizing and restructuring thoughts, relaxation techniques, and attentional control to regulate their emotions (Adie, Duda, and Ntoumanis, 2008; Conroy and Metzler, 2004; Kudlackova, Eccles, and Dieffenbach, 2013; Turner and Barker, 2013; Williams, Cumming, and Balanos, 2010). Other strategies used by athletes include situation selection and modification (problem focused strategies), where athletes actively chose their environment to invoke particular emotional states (Uphill, McCarthy, and Jones, 2009), and listening to music to elicit or change the intensity of emotions experienced (Bishop et al., 2007).

The various strategies athletes use to manage the demands associated with their sport may be considered as emotion regulation strategies or as coping strategies. Emotion regulation refers to "processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions" (Gross, 1998, p. 275). Emotion regulation considers the ways in which athletes decrease, maintain, or increase their own emotional experiences, and also how emotions are displayed and the effects of emotional expression on others. Coping is a part of emotional regulation and is defined as "constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding" one's resources (Lazarus and Folkman 1984, p. 141). Coping generally excludes involuntary or non-deliberate responses (e.g., yelling, crying) that are part of athletes' emotional experience and expression which could impact others' reactions or emotional experiences (Crocker et al., 2004; Hoar et al., 2006; Jones, 2012). Thus, coping is one part of an athlete's overall emotional regulation repertoire, and is a process of conscious efforts to manage demands that are appraised as taxing or exceeding an individual's resources (Lazarus, 1999).

Athletes' use of coping strategies in sport contexts have been categorized into various coping functions (Nicholls and Thelwell, 2010). One way researchers have examined coping function is by using Lazarus' problem- and emotion-focused coping categorization (see Lazarus, 1999; Lazarus and Folkman, 1984). Problem-focused coping is aimed at managing or altering the reason for which the athlete is experiencing stress (Lazarus and Folkman, 1984). For instance, a soccer player who has recently received reduced playing time may speak to his coach about ways to improve his game. In comparison, an athlete using emotion-focused coping will try to regulate their emotions stemming from the problem, such as using relaxation techniques to reduce his anxiety about the reduced playing time. Another popular coping function classification in sport is task-oriented, disengagement-oriented, and distraction-oriented coping orientations (Gaudreau and Blondin, 2002). Task-oriented coping strategies target the stressful situation directly (e.g., cognitive reappraisal, effort expenditure), whereas an athlete using disengagement strategies will physically or mentally withdraw herself from the situation (e.g., behavioural disengagement, denial). Finally, athletes using distraction-oriented strategies will focus her attention away from the stressful situation and onto other internal and/or external elements (e.g., mental distraction; Gaudreau, Nicholls, and Levy, 2010). There are numerous specific types of coping strategies that can serve various

coping functions depending on the sport context and intention of the athlete (Hoar et al., 2006; Nicholls and Thelwell, 2010).

Intervention programs targeting adaptive emotion regulation and coping often combine techniques to assist athletes in altering the intensity of the emotion experienced or to cognitively change the meaning of the situation (see Jones, 2003, 2012; Thomas, Mellalieu, and Hanton, 2009). For example, in an intervention conducted by Neil, Hanton, and Mellalieu (2013) a cognitive behavioural approach was employed to assist four national level golfers to interpret their perceived debilitating emotions as facilitative to their performance. The study was implemented over four phases in which participants were encouraged to acknowledge and understand the situation, their cognitions and emotions, to cognitively restructure their appraisals and emotions, and to direct their attention to the present task (Neil et al., 2013). This cognitive behavioural change technique resulted in participants perceiving previously debilitating emotions as facilitative or unimportant to their golf performance. In addition, participants improved in both their subjective and objective sport performance.

Other interventions have sought to provide athletes with protective resources such as self-compassion in advance of stressful situations. Self-compassion (Neff, 2003) has recently received attention within sport psychology as a promising resource to assist athletes with stress management, in particular when athletes must cope with negative events (Mosewich, Crocker, Kowalski, and DeLongis, 2013; Mosewich, Kowalski, Sabiston, Sedgwick, and Tracy, 2011). Mosewich et al. (2013) examined the effect of a self-compassion intervention for women collegiate athletes who self-identified as being overly self-critical in sport. The intervention consisted of writing and psycho-educational components that outlined self-compassion and its three main components of self-kindness, common humanity, and mindfulness (Neff, 2003). Results indicated that athletes who received the self-compassion intervention reported a decrease in self-criticism, rumination, concern over mistakes, and an increase in self-compassion compared to an attention control group. These findings suggest that enhancing athletes' self-compassion may assist them in positively adapting to stressful demands within sport.

Another area of growing interest in sport psychology is the impact of interpersonal relationships on athletes' development of positive adaptational outcomes (e.g., Langan, Blake, and Lonsdale, 2013; Smith, Smoll, and Cumming, 2007; Tamminen and Holt, 2012). This is an important area for future investigation as current research suggests that parents and coaches can create a supportive context for athletes to learn about coping and can engage in specific strategies to assist athletes in learning about coping and emotion regulation (Tamminen and Holt, 2012). Specifically, Tamminen and Holt (2012) proposed that parents and coaches may facilitate coping development in adolescent athletes through supportive contexts where the athlete feels at ease to discuss stressors and coping. Their findings suggested that parents and coaches can create supportive contexts by listening and monitoring their own reactions, reading the body language and responsiveness of the athlete, fostering the athlete's independence in coping with stressors, and developing trust and respect in the athlete-coach relationship.

Parents and coaches employed specific strategies to help athletes learn to cope by posing questions about potential coping options, reminding athletes about coping strategies available to them, putting the stressor into perspective, sharing experiences, limiting exposure to stressful experiences, initiating informal conversations about stressors and coping, creating opportunities to learn about coping, and providing direct instruction about coping with stress

in sport (Tamminen and Holt, 2012). It would be worthwhile for future work to determine whether intervening at the parent and coach level can assist athletes in building the skills necessary to adapt to the challenges associated with sport participation and competition.

Interpersonal aspects of emotion regulation within sport contexts are also receiving increased attention in sport psychology research (see Tamminen and Crocker, 2013; Wagstaff, Fletcher, and Hanton, 2012; Wagstaff, Hanton, and Fletcher, 2013). For instance, Wagstaff and colleagues (2012, 2013) examined how interpersonal emotion regulation affects the functioning of sport organizations. Their findings suggest that individuals' intra- and inter-personal emotion regulation abilities can impact the functioning of sport organizations (Wagstaff et al., 2012; 2013). In an intervention to try to improve the daily functioning of members of sport organizations by facilitating the development of emotion regulation strategies, Wagstaff et al. (2013) found that there were significant increases in the use of adaptive emotional regulation strategies among participants, in addition to more positive perceptions of relationship quality and closeness. The use of emotion regulation strategies has also been associated with adaptive outcomes in high performance curlers (Tamminen and Crocker, 2013). Tamminen and Crocker (2013) found that athletes were aware of how their emotions and their own emotion regulation could impact their teammates and the athletes engaged in self-censorship of body language and discussions of concerns regarding strategy decisions in order to avoid negatively impacting their teammates' performance. Additionally, participants employed several strategies to try and regulate their teammates' emotions, including providing positive and/or technical feedback, using humour, cuing teammates about their emotions, and using prosocial and indirect actions. Prosocial actions involved taking into consideration the needs of others and accommodating others' needs by adjusting or altering one's own behaviours, and indirect actions included actions to protect teammates from potential stressors or direct criticism. While this emerging body of literature provides important insights into interpersonal aspects of emotion regulation, our understanding of this phenomena requires further development.

### **Emotion and Adaptation: Key Points to Promote Positive Human Functioning**

- 1 Athletes' functioning is always dynamic and changing. This means that athletes who may be experiencing poor physical, emotional, psychological or social functioning can change for the better and adjust positively to their environment.
- 2 Negative emotions are not necessarily maladaptive for sport performance, but negative emotions are associated with motor behaviours, action tendencies, decision making and attention consequences which can be detrimental for performance. Athletes must be able to recognize their negative emotions and engage in emotion regulation or coping behaviours or cognitions to overcome these behaviours and tendencies which would inhibit successful sport performance.
- 3 Positive emotions could promote positive adaptational outcomes among athletes by facilitating behaviours which build physical, social, and psychological resources. These resources should allow athletes to attain their goals and help to develop resiliency to cope with adversity in the future. Athletes should embrace positive

emotions in sport and identify ways in which positive emotions can help improve sport performance.

- 4 Using mental skills such as self-talk, imagery, goal setting, rationalizing and restructuring thoughts, relaxation techniques, and attention control can assist athletes in changing cognitions and behaviour in order to regulate their emotions and cope with stressors. Mental skills are often employed in combination and are usually associated with an increase in performance or indicators of well-being.
- 5 Self-compassion is a promising resource that athletes may use to manage stressful situations, particularly negative events. Evidence suggests that an increase in self-compassion may lead to adaptive outcomes in sport such as decreases in self-criticism, rumination, and concern over mistakes.
- 6 Coaches and parents can impact the environment in which adolescent athletes learn to cope and they can help athletes in developing adaptive coping strategies. Additionally, high performance athletes should be aware of how their emotions and emotion regulation strategies can impact their teammates and actively engage in strategies to regulate their own and their teammates' emotions to promote positive performance outcomes.

## CONCLUSION

Adaptation in sport is an ongoing process of continual adjustment to changing physical, social, and psychological conditions. Measures to determine an athlete's adjustment in sport should include a variety of outcomes, including physiological, cognitive, emotional, behavioural, and sport performance indicators. Emotions are an integral part of adaptation processes, however emotional experiences typically interface with higher order cognitions. The emotional process can influence movement coordination, cognitive and attention mechanisms, and subsequent performance and social functioning. Successful adaptation often requires effective emotion regulation, and athletes can develop and employ various coping strategies to regulate cognitive processes and neural and somatic reactions. Effective coping at both the individual and team level can help to promote positive human functioning at all levels of sport.

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## **ADAPTATION CONTEXTS**



*Chapter 8*

## **POSITIVE HUMAN FUNCTIONING IN STRESS SITUATIONS: AN INTERACTIVE PROPOSAL**

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### **ABSTRACT**

Understanding human adaptation to stressful situations is a fascinating and complex topic. Most of this complexity derives from the ambiguity of the concept of stress, the factors that explain human functioning when exposed to stress conditions, and the characteristics of the situation that can be associated with stress reactions. However, the actuality of the phenomenon and the increasing effects on human well-being in a broad set of living contexts demands answers and solutions from science to mitigate the negative consequences of stress. One of the major areas that can help reach this goal is proposing or refining conceptual models that explain human adaptation to stress.

Taking as a starting point the cognitive-motivational-relational theory of emotions of Lazarus (1991, 1999), this chapter proposes an interactive model of human adaptation, discussing six aspects: (a) the importance of the stressful event during the process of human adaptation to stress; (b) the influence of antecedent factors (situational and personal characteristics) on human adaptation to stress events; (c) the central role of cognitive appraisal in human adaptation to stressful events; (d) the levels of responses implicit to a stressful situation; (e) the interactive process between the first level of cognitive appraisal, the responses, and the second level of cognitive appraisal; and (f) the event outcomes. The chapter terminates by discussing the mediating role of cognitive appraisal in the relation between stressful events and the event outcomes and by proposing some questions for future research.

Considering all aspects, the interactive model of human adaptation is a tentative proposal to explain how individuals adapt to stressful situations that needs further investigation to confirm its utility.

## INTRODUCTION

One of the most accepted ideas about living contexts, particularly the ones where individuals have to perform a certain task (e.g., work, sport, arts), is that they are becoming more and more stressful. The sources of stress are also becoming broader and more intense, thereby making it necessary to use efficient ways of coping that promote positive human adaptation. However, the relationship between stress and human adaptation is far from simple, implying the understanding of situational and personal factors involved in the ways humans perceive and respond to their performance contexts<sup>1</sup>. One method of understanding the complexities of human adaptation to stress is by proposing conceptual models that can help understand how individuals achieve their best performance in their living contexts and how they can use these same contexts to be realized as human beings.

The purpose of this chapter is to discuss the factors that are implicated in human adaptation to stress, being proposed the Interactive Model of Human Adaptation to Stress that relies mainly on the cognitive-motivational-relational theory of stress and emotions of Lazarus (1991, 1999) and the subsequent adaptations proposed by Fletcher, Hanton, and Mellalieu (2006) and Folkman (2008). In addition, concepts related to the sources of stress (Occupational Stress Model; Cooper & Marshall, 1976), the fit between the person and the environment (Person–Environment Fit; Edwards, Caplan, & Van Harrison, 1998), and the importance of personal control over work (Job Demands-Control model; Karasek, 1979; Karasek & Theorell, 1990) were also considered in the model.

More specifically, the chapter progresses from the analysis of the main dimensions included in the interactive model (e.g., characteristics of the stressful events, antecedent factors, cognitive appraisal, responses, and event outcomes) to discuss the mediating role of cognitive appraisal in the relation between stressful events and event outcomes and proposes questions for future research.

## THE INTERACTIVE MODEL OF HUMAN ADAPTATION TO STRESS

There are some main prepositions of the interactive model that should be described now because they will be the basis for explaining this proposal along the chapter.

- The comprehension of human adaptation to stress is best achieved by adopting a process-oriented approach that assumes the dynamic nature of the relationship between the individual and the environment.
- The capture of this dynamic process implicates the analysis of the temporal sequence of demands (e.g., stressful events), the antecedent factors at the situational and personal levels, the cognitive appraisal at the first and second levels, the responses, and the event outcomes of human adaptation. By focusing on one or more of these variables alone results in a partial vision of the factors that explain human adaptation to stress.

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<sup>1</sup> Throughout the chapter, terms like “performance contexts”, “performance situation”, and “performance settings” will be used interchangeably when referring to the cases where there is a specific and demanding task that the individual has to accomplish.

- The model, as proposed by Lazarus (1991), assumes that stress is not a property of the individual or the environment but resides in the transaction between the two. Several aspects can characterize both the individual and the environment (as will be discussed later), but the important point is that the dynamic experience of stress is best understood when both factors are analyzed in conjunction.
- The model is interactive because it proposes that human adaptation is an ongoing process that can be made by advances and setbacks in the process of coping with stress, assuming interactive influences between the first level of cognitive appraisal, the responses, and the second level of cognitive appraisal in a bidirectional way, as such: first level of cognitive appraisal ↔ responses ↔ second level of cognitive appraisal.
- Stress is an ongoing transaction between environmental demands and personal resources. Strain (*negative human functioning*) is a consequence of an imbalance between these demands and resources (Cox, 1985; Lazarus, 1999; McGrath, 1970); by the contrary, well-being (*positive human functioning*) is a consequence of a balance between these demands and resources.
- The concept of human adaptation assumed in the interactive model shares the definition proposed by Tamminen, Crocker, and McEwen (this volume); these authors understand adaptation in sports as an ongoing process of continual adjustment to changing physical, social, and psychological conditions. In this way, for the interactive model the process of adaptation involves the processes of cognitive appraisal, the responses (at the emotional, cognitive, behavioral levels), and the adjustment to the appraised conditions.
- The central factor to comprehend human responses during stressful events is cognitive appraisal; it is not only involved in the onset of psychological, physiological, and behavioral responses but also involved in how these same responses will be interpreted and managed.
- The process of human adaptation does not need to go through all the steps proposed in the model; on the contrary, it can end when the individual does not attribute importance to the stressful event or when the person has achieved an event outcome of positive or negative human functioning.
- There is no reason to believe that human adaptation to stress finishes after primary and secondary cognitive appraisals; further, there is no reason to believe that tertiary and quaternary cognitive appraisal will only be mobilized if things go wrong. In contrast, positive adjustments to stressful events after primary and secondary cognitive appraisals can also implicate additional efforts in order to improve personal adjustment to the situation.
- The interactive model advances the possibility that cognitive appraisal can mediate the relation between stressful events and the event outcomes and the possibility that antecedent factors can be moderator variables between the stressful event and the event outcomes.
- Stressful events are not static entities that exert a major influence only at the beginning of the adaptation process. In contrast, they can exert an influence along the process of human adaptation, thereby reinforcing the dynamic nature of the person-environment relationship.

Considering all these central aspects, we now turn our attention to each of the dimensions proposed in the model, which is presented in Figure 1.

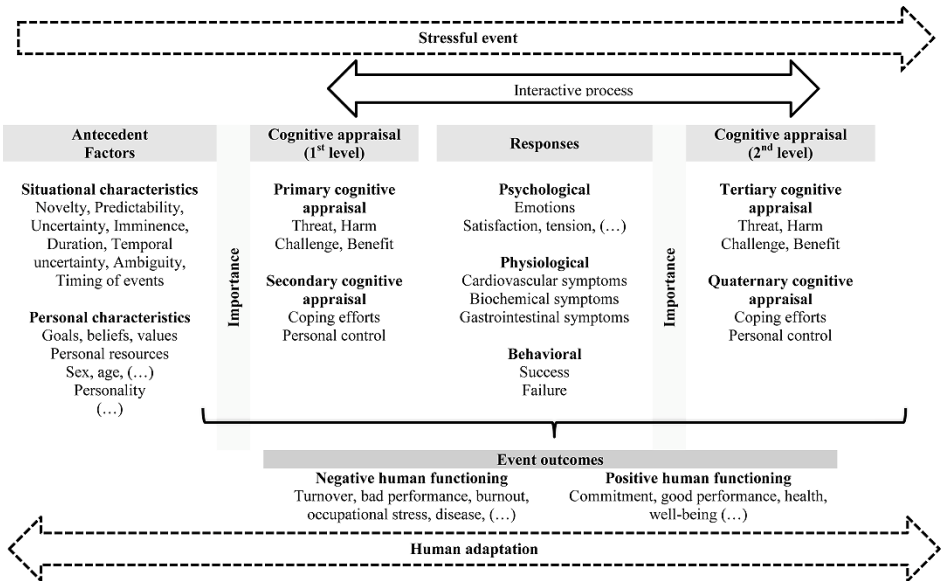


Figure 1. Interactive model of human adaptation to stress.

## Stressful Event

Historically, stress has been analyzed in one of three ways: as a stimulus (including the factors that can induce distress to the individual), as a response of the individual to stressful events (including psychological, physiological, and behavioral consequences), and as an interaction between the person and the stressful situation (for a review, see Cooper & Dewe, 2004). The last one has a major influence on this chapter and in the way the phenomenon of human adaptation to stress is conceived. However, by assuming this last perspective, it does not mean the other two perspectives are useless or meaningless. It is correct that these perspectives have problems in regard to explaining individual differences to the stress event (stimulus approach) and why responses to stress do not always assume the same pattern (response approach). However, they have the merit of highlighting the factors that can disrupt human functioning in performance contexts (e.g., work and sport contexts) and the consequences that stressors can have on human functioning. It is important to know if the nature of stressors is changing across time, leading to “new” or “more intense” responses to stress. Comprehending the nature of stress and evaluating the specific responses to stress continues to be an important task for stress research. The reactions to stress factors will be addressed later in this chapter under the “responses” of the Interactive Model of Human Adaptation to Stress.

Regarding the stimulus approach, it becomes important to understand the set of stressful factors that can disrupt human functioning; this is proposed in the interactive model that stressful events play a major role in human adaptation to stress. This means that stressful



events are not a static entity prior to processes of cognitive appraisal or coping efforts that are assumed by the individual in order to deal with stress. In contrast, it assumes an interactive and dynamic nature established between the individual and the situation. This means that the stressful event plays a major role during all processes of human adaptation to stress, changing its nature according to the continuous efforts made by the person to cope with stress along this adaptation process (this is why there is a dashed line to signalize the stressful event in Figure 1).

As proposed by Lazarus (1995), research regarding stress in the workplace assumes that sources of stress at work are, to some extent, an individual phenomenon as the ways people cope with stress. This means that in addition to describing the sources of stress that can promote negative human functioning (e.g., the stimulus approach), it is important to analyze the way each individual appraises the stress situation and the way he or she manages the situation. However, the author also recognizes the importance of considering and describing the conditions of work because some types of stressors (e.g., time pressures, work overload, lack of decisional control) can be stressful enough for a large number of workers.

This same perspective is assumed in the interactive model, giving particular relevance to the individual process of human adaptation to stress but also recognizing the importance (and sometimes generalized) effects of some occupational stressors. A deep understanding of stress will be achieved if the nature of the stressful situations and the following process of human adaptation are considered. In this way, the interactive model proposes that the stimulus approach can introduce a deep understanding of the factors involved in the process of human adaptation, but it also assumes that the central aspects involved in this adaptation are related to appraisal and coping, as will be discussed later. This interactive perspective of stress gives attention to the ongoing process that is implicated in the relation between the environment and the individual, being considered the dynamics between these two factors and the personal meaning that each individual builds when facing a stressful event. Stress is viewed as a transaction between the set of demands implicated in each stress event and the individual personal resources; in this way, strain results from an imbalance between these two aspects (Cox, 1985; Lazarus, 1991; McGrath, 1970). This dynamic perspective means that stress is not in the individual or in the situation but results from the interaction between a particular situation and a specific individual. These dynamics can be best understood by analyzing the relational meaning that each person attributes to the stress situation; that is, the meaning a person gives to the relationship he or she has with the environment (Lazarus, 1991).

## **Antecedent Factors**

Two of the most important factors implicated in human adaptation to stress are situational characteristics (e.g., type of organization, culture) and personal characteristics (e.g., personality traits). Both represent antecedent factors that can influence the process of human adaptation to stress events. As referred by Lazarus and Folkman (1984), psychological stress will derive from a transaction between a specific individual that evaluates the situational relevance to his or her well-being and a particular environment with specific features that impose some pressure to the individual. Stressful events include both personal and situational factors, and for that reason, they were integrated in the Interactive Model of Human Adaptation to Stress (see Figure 1).

In what concerns the situational characteristics according to the transactional perspective of Lazarus (1991; Lazarus & Folkman, 1984), more than describing particular sources of stress, it becomes important to identify the reasons why an individual appraises events as stressful. In addition to the importance of aspects related to the organizational culture and the aspects of the work to do, Lazarus and Folkman (1984) described underlying properties that can turn a situation into a stressful event: (a) novelty of the situation for the individual; (b) predictability of the situation for the individual; (c) uncertainty of the event's occurrence; (d) imminence of the event in terms of time available to anticipate before its occurrence; (e) duration of the event; (f) temporal uncertainty of the event, which is related to the individual ability to know the precise time when the stressful situation will occur; (g) ambiguity of information needed for the appraisal of the event; and (h) timing of event occurrence in relation to the life cycle, which analyzes whether more events are happening in the person's life when the stressful situation occurred. Little research exists on this topic, but some existing findings do support the importance of these properties to the stress response (Dugdale, Eklund, & Gordon, 2002; Kirschbaum, 1999; Marchant, Andersen, & Morris, 1997; Perez & Reicherts, 1992; Thatcher & Day, 2008). Due their interest, these factors were integrated in the Interactive Model of Human Adaptation to Stress.

Regarding the personal characteristics, Lazarus (1999) describes the importance of analyzing goal commitment, values, beliefs about the self and the environment, and situational intentions. From these factors, goal commitment seems to be a crucial factor because "it implies that a person will strive hard to attain the goal" and that "if there is no goal commitment, there is nothing of adaptational importance at stake in an encounter to arouse a stress reaction" (Lazarus, 1999, p. 76). These aspects are included in the primary cognitive appraisal proposed by Lazarus (1999) but were included in the interactive model as antecedent factors that can determine the ongoing process of stress confrontation (see Figure 1). This has the advantage of separating the personal meaning of the event (included in the concept of importance for the interactive model) from the factors involved in human adaptation to stress (e.g., appraisal, coping, and event outcomes). For example, if the stressful event undermines valuable personal goals (antecedent factor), then the chance of importance being attributed to the event increases, initiating the process of adaptation to the stressful event. This is somewhat different from the perspective assumed by Lazarus and Folkman (1984) because these factors are already included in the primary cognitive appraisal that will identify the personal significance that the individual will attribute to the stressful event; for the interactive model if no personal significance is given to the situation, then it cannot be appraised as stressful because it has no importance.

Also included in the personal characteristics, the interactive model considers other aspects related to personal resources (e.g., educational level, economic resources, social skills, life experiences, social support, health status, physical abilities) that can influence what an individual will be able or unable to do (Lazarus, 1999; Lundberg, & Cooper, 2011; Payne, 1988).

Personality factors are also included as antecedent factors in the interactive model. As recognized by Lazarus (1995), certain types of persons (e.g., rigid personalities, addicted to drugs, neurotic, depressive tendencies) are likely to react with stress more often or more intensely than others. Research has partially confirmed this idea, namely, the tendency to be more vulnerable to stress and to perceive job situations as more stressful in individuals who are high in negative affectivity (Cassar & Tattersall, 1998; Spector & O'Connell, 1994), who

have an external locus of control (Newton & Keenan, 1990; Rees & Cooper, 1992), and who have a Type A behavior pattern (Newton & Keenan, 1990; Payne, 1988). Other dispositional variables have been suggested to buffer the impact of stressors on an individual's experience of strain, for example, hardiness, self-esteem and self-efficacy, and optimism (for a review, see Cooper, Dewe, & O'Driscoll, 2001). However, further research is still needed to determine the effects of these variables (Cohen & Edwards, 1989).

Finally, it is also evident that demographic variables, such as age and sex, can also affect vulnerability to stress (Jenkins, 1991; Nelson & Quick, 1985; Shirom, Gilboa, Fried, & Cooper, 2008). For this reason, demographic variables were also included as personal antecedent variables in the interactive model.

It is important to note that situational and personal characteristics should be conceived together (Lazarus, 2000a), meaning that personal factors make sense when they are analyzed in the context of the situation, and the situation makes sense in the scenario faced by each individual. The situation can be meaningful to the individual, but it will not be appraised as stressful if it does not assume one or more of the described underlying properties; further, the situation can assume at least one underlying property, but it will not be appraised as stressful if no personal significance is given by the individual (Thatcher & Day, 2008).

Considering these aspects, the Interactive Model of Human Adaptation to Stress suggests the concept of "importance" as the *gate* that opens the process of human adaptation to stress, resulting from the conjunction of situational and personal characteristics (see Figure 1). Overall, this personal meaning attributed to the stressful event will determine if the situation will be faced by the individual; if no importance is attributed to the stressful event, then this event can become, for example, a frustrating or sad situation, but it does not represent an event that requires efforts of human adaptation to stress.

Lazarus (1991) proposes a similar concept described as "relational meaning" that also results from the conjunction of an environment and a person with certain attributes, which together produce a relational meaning that a person construes from his or her relationship with that particular situation.

The concept of "importance" or personal meaning of the Interactive Model of Human Adaptation to Stress also results from the relation between a particular individual and a specific situation, indicating if the process of human adaptation to stress will begin or end at this first moment of confrontation with the stress event. However, for Lazarus, the concept of relational meaning not only results from the environment-individual relation but also is implicated in the subsequent emotional responses. In fact, by turning his theory for the analysis of the relational meaning of emotions that are involved in each adaptational encounter, Lazarus (1991, p. 39) assumed "each emotion is defined by a unique and specifiable relational meaning that can be expressed in a *core relational theme* for each individual emotion, which summarizes the personal harms and benefits residing in each person-environment relationship". Considering this step forward proposed by Lazarus, the Interactive Model of Human Adaptation to Stress proposes the concept of "importance" to refer only to this first step of confrontation with stress; this reinforces the idea that with no personal meaning attributed to the stressful event, no efforts of coping will be mobilized to deal with the situation because it was not considered important.

## Cognitive Appraisal: 1<sup>st</sup> Level Processes

Appraisals are evaluations that affect people's beliefs, values and/or goals (Arnold, 1960; Lazarus & Folkman, 1984) having an adaptive function because they indicate whether an event may be good or bad for the individual, generating subsequent action tendencies (Arnold, 1960). In this way, cognitive appraisal represents reactions to stressful situations that vary according to the way individuals perceive the stressful events. This turns cognitive appraisal a central concept for human adaptation to stressful events.

The Interactive Model of Human Adaptation to Stress describes two processes of cognitive appraisal that derive directly from the transactional proposal of Lazarus (1991): primary and secondary cognitive appraisals (see Figure 1). Primary cognitive appraisal refers to whether what is happening is personally relevant to one's values, goal commitments, beliefs about self and world, and situational intentions, thereby meaning if there is any personal stake in the stressful encounter. According to Lazarus (1991), there are three components of primary appraisal that play a major role in the way each individual perceives and reacts to the stressful encounter: (a) goal relevance: the extent to which an encounter touches on personal goals, meaning if there is no goal relevance there cannot be an emotion; (b) goal congruence or incongruence: the extent to which a transaction is consistent or inconsistent with what the person wants, meaning if it thwarts (goal incongruence) or facilitates (goal congruence) personal goals; and (c) type of ego-involvement: refers to diverse aspects of ego-identity or personal commitments involved in the encounter, meaning if aspects related to self- and social-esteem, moral values, ego-ideals, meanings and ideas are at stake in the encounter.

Secondary cognitive appraisal refers to coping options and prospects, evaluating if there are available personal resources for dealing with harm, threat, or challenge appraisals. In this case, the components for secondary appraisal are (a) blame and credit: relates to knowing who is accountable or responsible for a harm, threat, challenge, or benefit consequence, i.e., the individual or others; (b) coping potential: relates to whether and how the person can manage the demands of the encounter or actualize personal commitments, implying an evaluation of the prospects for doing or thinking something that can, in turn, change or protect the person-environment relationship; and (c) future expectancy: relates to whether, for any reason, things are likely to change psychologically for better or worse (i.e., becoming more or less goal congruent) (Lazarus, 1991). Despite this organization of the components of cognitive appraisal, Lazarus (1991) argues that they are not necessarily sequential and that individuals do not have to go through the entire appraisal process every time a new adaptational encounter is faced.

Regarding the Interactive Model of Human Adaptation to Stress, it is worth remembering that the concept of "importance" already analyzed whether the stress event is *personally relevant*. In this way, when primary cognitive appraisal happens, the event already has a significant personal meaning that requires to be coped by the individual. In this way, for the interactive model, primary cognitive appraisal refers to the first impact of the stressful event in the individual.

The results from the primary cognitive appraisal for the interactive model are described as by Lazarus (1991, 2000b, 2001) (see Figure 1): (a) threat perception (i.e., harm or potential loss that has not yet happened); (b) harm perception (i.e., damage that has already occurred); (c) challenge perception (i.e., difficult-to-attain, yet anticipated gain); and (d) benefit

perception (i.e., gain that already occurred). The result of the interaction between the individual and the stressful encounter generates a *relational meaning* (Lazarus, 2000b) that can be organized according to a loss or a gain attributed to anticipated results (i.e., threat and challenge) or to results that are already occurring (i.e., harm and benefit). Additionally, it can coexist in the same situation the threat and challenge perceptions because the same stressful encounter may exhibit aspects that implicate a potential loss while others implicate a potential gain; however, as assumed by Lazarus (1999), one or the other usually dominates.

Secondary cognitive appraisal includes coping efforts made by the individual to deal with the situation and personal control over the situation (see Figure 1). As discussed by Lazarus and Folkman (1984), coping involves cognitive and behavioral efforts that an individual makes to manage demands that tax or exceed the personal resources. These efforts can be organized into problem-focused coping when the person tries to alter the actual relationship between the person and the environment for the better (and if the efforts are successful, then threat and harm can be reduced or even eliminated); it can also be organized into emotion-focused coping when the individual tries to regulate emotional distress caused by threat or harm by using, for example, avoidance of thinking about the sources of stress. Some authors also include a third type of coping related to meaning-focused coping that is used to manage the meaning of a situation (Folkman & Moskowitz, 2004). Regardless of the dimensions that can characterize the concept of coping, this factor is central to explain the stress process and its adaptational outcomes. In fact, psychological stress only occurs if the person evaluates the internal or external demands as taxing or exceeding the individual's resources (Lazarus, 1999).

In addition to coping efforts, the interactive model includes personal control in the secondary cognitive appraisal. Personal control can make a difference in the selection of coping strategies used by the individual to deal with the stress situation (see Figure 1). If the person feels that the stressful encounter can be subject to control by his or her actions, then problem-focused strategies predominate; in contrast, if the person feels that nothing can be done to change the situation, then emotion-focused strategies predominate (Lazarus, 1991). One interesting proposal that can reinforce the importance of control is the Job Demands-Control model (Karasek, 1979; Karasek & Theorell, 1990). The last dimension that was added to the model has social support turning the model to Job Demand-Control-Support (JDCS; Johnson & Hall, 1988; Johnson, Hall & Theorell, 1989). Describing the model is not fundamental for the purpose of reinforcing the concept of control; rather, it should be noted that the model assumes that more important than the set of job demands that can exert pressure to the individual and create strain, it is crucial to consider if he or she has some control over the set of demands to be dealt with. This assumes an interactive effect between the demands and the control on stress levels, meaning that control will buffer (moderate) the impact of demands (pressures) on strain (Dewe, O'Driscoll, & Cooper, 2013).

Overall, primary and secondary cognitive appraisals represent central dimensions for the interactive model. However, it is interesting to note that much more empirical data exists regarding the use of secondary cognitive appraisal (e.g., coping strategies) to deal with stressful events than the impact of primary cognitive appraisal in the selection of coping strategies. As referred by Dewe et al. (2013) in the work stress domain, research related to coping continues to grow while the research related to *primary* cognitive appraisal has not.

To illustrate, studies related to coping have analyzed in great detail aspects related to taxonomies and instruments to evaluate coping (see Schwarzer & Schwarzer, 1996 for a

review of coping instruments, and Folkman & Moskowitz, 2004 for a review of coping taxonomies), the use of different coping strategies in stressful situations (Folkman, Lazarus, Dunkel-Schetter, De Longis, & Gruen, 1986; Folkman, Lazarus, Gruen, & DeLongis, 1986; Jordet & Elferink-Gemser, 2012; Macrodimitris & Endler, 2001; Terry & Hynes, 1998), and situational and dispositional coping (Carver & Scheier, 1994; Schnider, Elhai, & Gray, 2007).

By the contrary, the concept of cognitive appraisal has not captured much attention by the research community. However, some studies proposed to evaluate this dimension (Folkman et al., 1986; Kuiper, McKenzie, & Belanger, 1995; Schneider, 2008) and to analyze the relationship with stress in work (Goh, Sawang, & Oei, 2010) and sport contexts (Dugdale et al., 2002). Other studies analyzed the relationship between cognitive appraisal and the use of coping strategies (Folkman et al., 1986), the feelings of social physique anxiety in exercise (Focht & Hausenblas, 2004), the physiological responses (Tomaka, Blascovich, Kelsey, & Leitten, 1993), and the emotions in sport (Bolgar, Janelle, & Giacobbi, Jr., 2008; Cerin, 2003; Meijen, Jones, McCarthy, Sheffield, & Allen, 2013). However, according to Schneider (2008), there is a scarcity of measures related to the appraisal construct, which can compromise an understanding of the stress process.

In order to give a better idea of questions that can represent the first level of cognitive appraisal, Figure 2 presents examples of psychological dilemmas during this step of human adaptation to stress.

## **Cognitive Appraisal: 2<sup>nd</sup> Level Processes**

The interactive process between cognitive appraisal and responses goes beyond the concepts of primary and secondary cognitive appraisal proposed by Lazarus (1991, 1999). The interactive model proposes a second level of cognitive appraisal that encompasses tertiary and quaternary cognitive appraisals. These subsequent appraisals are derived from the proposal of sport contexts by Fletcher and Fletcher (2005; see also Fletcher et al., 2006). Tertiary appraisal has been defined as the evaluation of an emotion in terms of whether or not it is relevant to one's performance, meaning that the individual considers the implications of what is at stake, thereby giving meaning to the symptoms. In this case, the individual should consider questions such as "how does this emotion and performance affect me?" Quaternary appraisal occurs only if the individual attributes meaning to an emotion; if that is the case, the individual will identify and analyze the available coping resources in order to deal with the emotion. Quaternary appraisal is a personal evaluation of the coping options, meaning that the individual should consider questions such as "what can I do about this emotion?"

However, one can raise the question as to why two additional cognitive appraisals that, in essence, seem quite similar to primary and secondary cognitive appraisals should be included. In an interesting reflection regarding positive emotions in the stress process, Susan Folkman (2008) makes the case for this need. She defends that the Cognitive Theory of Stress and Coping (Lazarus, 1966; Lazarus & Folkman, 1984) had little to say in situations where the outcome was a unfavorable one, "except that the appraisal-emotion-coping-reappraisal process would repeat itself, thus producing the conditions of chronic stress" (p. 5). This explanation seems quite short when there is a need to comprehend what happens when the individual faces situations that are not favorably resolved. In this case, Folkman proposed a Revised Stress and Coping Model introducing a new category of meaning (meaning-focused

coping) that can generate positive emotions. Meaning-focused coping is a type of coping that identifies the individual's tendency to draw on his or her beliefs, values, and existential goals to motivate and sustain coping and well-being during a difficult time (Park & Folkman, 1997). The model proposes that after a failed resolution, there is a need to resolve the problem becoming important the meaning-focused coping that will generate positive emotions and their underlying appraisal. These positive emotions and appraisals will then "influence the stress process by restoring coping resources and providing motivation needed in order to sustain problem-focused coping over the long term. In addition, positive emotions were hypothesized to provide relief from distress" (p. 5). Thus, the process of human adaptation can continue when individuals face difficult situations and by using meaning-focused coping it can be achieved a better situation that will promote positive emotions.

Considering both the insights of Fletcher and Fletcher (2005) and Folkman (2008), it turns important to consider what happens if after the first level of cognitive appraisal the situation is not resolved. In this case, it becomes necessary to analyze how the process of human adaptation will progress. In this way, concepts such as tertiary and quaternary cognitive appraisals or even meaning-focused coping can add extra understanding to the factors involved in the process of dealing with stressful events. However, two distinctions should be made for the interactive model. First, tertiary and quaternary cognitive appraisals are not only targeted to deal with emotional responses (as stated by Fletcher & Fletcher, 2005 and Lazarus, 2000b) but also encompass the entire set of responses at the psychological, physiological, and behavioral levels (as will be described in the next section). In fact, there is no reason to believe that the all set of responses that emerge after the first level of cognitive appraisal does not produce sufficient impact in the individual in order to be faced in an appropriate way. Second, coping efforts can assume specific characteristics in the second level (justifying, for example, the use of meaning-focused), but there is also no reason to believe that these efforts only occur when the individual is facing unfavorable situations. In fact, it is possible that favorable (or not so good) situations can also trigger the need for the second level of cognitive appraisal. For example, quaternary cognitive appraisal maintains its relevance when the individual feels that he or she can achieve an even better situation or when he or she feels that despite the positive effects there are also personal or situational aspects that can be ameliorated.

In sum, for the interactive model, tertiary cognitive appraisal reflects the personal significance of the *same* stressful event that can result in threat/harm or challenge/benefit appraisals. Tertiary appraisal presupposes that the situation maintains the significant personal meaning that requires coping by the individual (importance). Quaternary appraisal includes the *new* coping strategies and personal control that are implicated in the efforts to manage the impact of the responses to the stressful events (see Figure 1). The final goal of using the second level of cognitive appraisal is achieving a better personal situation compared to the one that resulted from the first level of cognitive appraisal. Thus, all subsequent evaluations and efforts of resolution after the first level of cognitive appraisal should be included in the second level of cognitive appraisal. This is important to say because long and complex processes of human adaptation to stress can trigger more than one process of the second level of cognitive appraisal. This is the case in dealing with sources of stress that change their nature along the process. For example, in some chronic or fatal diseases, the process of being ill can start with a problem that was benign and only after a period of time become malignant

and terminal. Therefore, the second level of cognitive appraisal can assume different forms and results along the process of human adaptation to stress.

In order to give a better idea of some questions that can represent the second level of cognitive appraisal, Figure 2 presents examples of psychological dilemmas during this step of the human adaptation to stress.

Cognitive processes	Examples of questions
Importance	<i>What is happening? Is this important to me?</i> <i>Can this affect me?</i>
Primary cognitive appraisal	<i>How am I feeling?</i> <i>What is the impact for me?</i> <i>What are the consequences for me?</i>
Secondary cognitive appraisal	<i>Do I have to do something?</i> <i>Is there anything I can do?</i> <i>What can I do?</i> <i>Which options are the best?</i> <i>When and how should I act?</i> <i>What are the consequences of my different options?</i>
Tertiary cognitive appraisal	<i>How am I feeling after dealing with the situation?</i> <i>What is the impact for me now?</i> <i>What are the consequences for me now?</i> <i>Am I in a better or worse situation?</i>
Quaternary cognitive appraisal	<i>Should I do something, or is it better to do nothing?</i> <i>Is there anything else that I can do?</i> <i>Should I change or maintain my options of action?</i> <i>When and how should I act now?</i> <i>What are the consequences of my new options?</i>

Figure 2. Examples of psychological dilemmas occurring during human adaptation to stress.

**Psychological, Physiological and Behavioral Responses**

For the interactive model, the main aspect related to the three levels of responses implicit to a stressful situation (e.g., psychological, physiological, and behavioral) is again cognitive appraisal. Cognitive appraisal not only explains the type of responses obtained in a stressful event (e.g., anxiety, threat, increased heart rate, decrease of motivation toward the task) but also explains how the individual interprets the responses and the way he or she will respond. Taking, for example, the context of sport psychology, substantial debate exists related to the impact of emotions (particularly anxiety) on performance. Authors agree that an emotion such as anxiety represents a negative response to competitive stressors, but the main point is whether athletes interpret their anxious symptoms as beneficial or harmful to an upcoming performance (Hanton, Neil, & Mellalieu, 2008; Mellalieu, Hanton, & Fletcher, 2006). One interesting factor that can explain how athletes can turn a negative emotion into a facilitator of their performance is given by the previous referred concept of personal control (Carver & Scheier, 1988; Jones, 1995). If athletes feel some degree of control over the stressor, they



tend to interpret symptoms as facilitative to performance being more able to cope with anxiety symptoms and achieve their goals. In contrast, if athletes feel no control over the stressor, they tend to interpret symptoms as debilitating to performance being less able to cope with anxiety symptoms and have negative expectancies regarding goal achievement (Jones, 1995). This same idea is reinforced in the Theory of Challenge and Threat States in Athletes proposed by Jones, Meijen, McCarthy, and Sheffield (2009); it is the interpretation of emotions that plays a major role in their facilitative (helpful) or debilitating (unhelpful) role on performance. In the same way, these interpretations are also affected by the concept of control that explains why negative emotions can be experienced as helpful to performance.

Considering these aspects for the interactive model, the cognitive appraisal at the first level will determine the responses to the stressful event, whereas the cognitive appraisal at the second level will determine how these responses will be interpreted (e.g., positive or negative; facilitative or debilitating). After this interpretation, adaptation to stress can terminate (turning to event outcomes) or can be assumed the need of additional efforts in order to deal with the situation (e.g., quaternary cognitive appraisal).

Determining briefly the set of responses that follows the first level of cognitive appraisal, the interactive model proposes responses at the psychological, physiological, and behavioral levels (see Figure 1). These responses are usually seen as final outcomes of the stress process and include psychological indicators, such as satisfaction or commitment, physiological indicators, such as sleep disturbances or blood pressure, and behavioral indicators, such as job performance or turnover. However, the interactive model makes a distinction between *immediate and proximal* outcomes that occur *during* the process of human adaptation and *stable and prolonged* outcomes that occur *after* the same process of human adaptation. For example, in a situation of stress, it is accepted that the individual can feel fatigue and lack of energy due to a very demanding situation (outcomes). However, it is not likely that he or she immediately experiences the process of burnout (event outcomes) because this process results after a prolonged exposure to chronic stress (Maslach, Schaufeli, & Leiter, 2001). In addition, this distinction assumed in the interactive model can also better reflect the ongoing process between the first level of cognitive appraisal, the responses, and the second level of cognitive appraisal. This will result in a interactive relationship between the first level of cognitive appraisal ↔ the responses ↔ the second level of cognitive appraisal (that correspond to immediate and proximal outcomes) and the final process of human adaptation reflected in the event outcomes (that correspond to stable and prolonged outcomes).

Regarding the psychological level, the interactive model highlights the emotional responses involved in human adaptation to stress. Although many other psychological responses can be involved in human adaptation to stress and continue to be of interest to the study of the reactions to stress situations (e.g., satisfaction, tension, depression), the growing interest of the stress community in the study of emotions should be highlighted (Payne & Cooper, 2004). The focus on emotions has also begun to address the importance of not only studying the negative emotions but also the positive ones involved in stress situations (Bonanno & Keltner 1997, Folkman 1997, Folkman & Moskowitz 2000; Skinner & Brewer, 2004). There is a historical debate regarding the definition, dimensions, and types of emotions that cannot be addressed in this chapter (for a review see Frijda, 1986; Izard, 1977; Izard, Kagan, & Zajonc, 1984). However, it is important to highlight the importance of emotions in human adaptation to stress. For example, Lazarus (1991, 1999) progressed from a theory of psychological stress to a cognitive-motivational-relational theory of stress and emotions

where a narrative approach to the comprehension of emotions was proposed. In his advancement of the theory, Lazarus (1999) assumed that emotions and stress should be treated as a single topic because emotional reactions are dependent of the relational meanings constructed from the relationships between the individuals and the environment. In this way, “stress generates emotional consequences but emotion encompasses all the phenomena of stress” (Lazarus & Cohen-Charash, 2001, p. 53). This lead Lazarus (1993) to analyze the meaning behind each emotion, which included three central concepts that form the basis of his theory: (a) there are inter-individual and intra-individual differences in emotional reactions, meaning that there are no two identical emotional encounters, even for the same individual; (b) emotional reactions depend on the appraisal of the significance for well-being of what is happening, and the function of emotions is to facilitate the adaptation across the adaptational encounter; and (c) the relational meaning that is constructed in each adaptational encounter is expressed in the concept of a *core relational theme*. Lazarus (1991) advanced 15 emotions, each with a specific core-relational theme (for a complete description of these emotions, see Lazarus & Cohen-Charash, 2001). For example, for the emotion of anxiety, the core-relational theme is facing an uncertain threat that “has existential implications that go well beyond concrete and immediate threats by serving as a symbol of potential inability to survive and flourish” (p. 64).

The implications of focusing on emotion for understanding human adaptation are significant. As said by Lazarus (1999, 2001), research should assume emotions as a better expression of what individuals experience in stressful encounters than to continue to note attention to the subjective concept of stress. Emotions are triggered by cognitive appraisal and play a central role in the comprehension of adaptation to stress. This means that stress and distress are not independent of the environmental conditions or of the individual characteristics but instead are the “functional juxtaposition of both” (Lazarus & Cohen-Charash, 2001, p. 46).

In this way, it is assumed that processes of cognitive appraisal related to threat and even harm tend to be associated with negative emotions (but not always) and that processes of cognitive appraisal related to challenge and benefit tend to be associated with positive emotions (but not always). This same idea is presented by Jones et al. (2009) in their Theory of Challenge and Threat States in Athletes; this theory proposes that positive emotions are normally, but not exclusively, related to a challenge response, whereas negative emotions are normally, but not exclusively, associated with a threat response.

Regarding the physiological responses, review studies from Fried, Rowland, and Ferris (1984) and Jex and Beehr (1991) established that general research has focused on three main types of physiological symptoms: cardiovascular (e.g., blood pressure, cardiac activity, and cholesterol), biochemical (e.g., catecholamines, cortisol, and uric acid), and gastrointestinal (e.g., peptic ulcers). Research regarding the relationship between stress and physiological symptoms needs to answer questions related to the use of reliable objective (physiological) and subjective (self-report) measures of strain, the nature and consequences of acute (episodic) and ongoing (chronic) stressors (Cooper et al., 2001), and the role of cognitive appraisal on these symptoms.

Regarding the behavioral responses, the interactive model proposes the analysis of the success or failure obtained by the individual by using his or her coping efforts in order to deal with the stressful event. These behavioral responses correspond to immediate and proximal results achieved by the individual when trying to resolve or mitigate the effects of the

stressful event. From this point of view, they are somewhat different from the results achieved in the event outcomes as these effects tend to be more prolonged in time and often occur after a long exposure to the stress situation. This distinction is important because behavioral responses can assume different connotations during the episode of stress, starting, for example, with a failure in dealing with the stressful event (e.g., the coping efforts were useless, and as a result, the individual felt immediate frustration that departed him or her from the situation), and end with a success result due the change of the coping effort in order to achieve a better state.

Using the example of occupational stress, the psychological strains have captured major attention from researchers (Jex & Beehr, 1991; Kahan & Byosiore, 1992). This does not mean that these responses are more important than physiological and behavioral responses, but it can reflect the fact that the researchers involved in the study of job stress typically have a background in psychology, thereby increasing the possibility of evaluating psychological responses (Jex & Beehr, 1991). For the interactive model, all three types of responses deserve equal importance, and they should be integrated in the understanding of human adaptation to stress, where cognitive appraisal plays a major role. This need is also based on research that supports the influence of cognitive appraisal in psychological, physiological, and behavioral responses to stress (Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001; Tomaka, Blascovich, Kibler, & Ernst, 1997).

One final and interesting topic is related to the impact of cognitive appraisal on responses to a stressful event. As was the case for the amount of research conducted on cognitive appraisal versus coping, there is again more research conducted on the impact of secondary cognitive appraisal (e.g., coping efforts) on responses to stressful events than about the impact of primary cognitive appraisal (e.g., threat, harm, challenge, and benefit) on responses to stressful events. For example, interesting findings prove that some coping strategies may be associated with the regulation of positive and negative emotions. For example, Stone, Kennedy-Moore, and Neale (1995) used end-of-day diaries with a sample of 79 men to describe the day's most "bothersome" problem; the authors found that relaxation and direct action were associated with positive affect, whereas distraction and acceptance were associated with lower levels of negative affect. The opposite has also been analyzed existing empirical findings that support the influence of emotions on the selection of coping strategies (Boekaerts, 2002; Moshe, 1994).

## **The Interactive Process**

Although the interactive model proposes a sequence of steps that occur since the stressful event triggers cognitive appraisal, the three types of responses, and the occurrence of event outcomes in human adaptation, the process is quite more complex.

First, human adaptation to stress adaptation can be completed after the first level of cognitive appraisal or even before when the individual evaluates the personal meaning – importance – of the situation to his or her well-being. This means that it is not necessary to go through the entire process of first and second levels of cognitive appraisals to have completed the process of human adaptation to stress. The process will be finished when the individual assumes that (a) the stress situation is not so important to challenge/threat his or her well-being or to mobilize coping efforts in order to deal with the source of stress; (b) coping efforts

(both at first and second levels) succeeded in dealing with the situation (e.g., positive human functioning); (c) coping efforts (both at first and second levels) did not succeed in dealing with the situation and the individual feels harm in the event outcomes (e.g., negative human functioning); and (d) coping efforts (both at first and second levels) did not succeed in dealing with the situation and the individual feels that there is nothing that can be done to solve the problem, thereby accepting the situation. It is important to distinguish situations where the individual has not succeeded in dealing with the situation of stress (and because of that can use some emotion-focused coping strategies related to denial or self-distraction to avoid the source of distress without engaging in problem-focused behavior) and situations where the individual has not succeeded in dealing with the situation of stress (and because of that can use some emotion-focused coping strategies related to venting one's emotional distress or cognitively reframing a stressor's impact). This division between situations (c) (where there is negative human functioning) and (d) (where there is not necessarily negative human functioning) is important; the way the individual copes with the failure of dealing with the stressful event can determine the event outcomes of human adaptation to stress. In fact, there is evidence that avoidant emotional coping (e.g., denial or self-distraction to avoid the source of distress) leads to mental health problems when compared to other forms of emotional coping (Coyne & Racioppo, 2000).

Second, the relation between first and second levels of cognitive appraisals is interactive, meaning that they can influence each other along the process of human adaptation to stress (and both can produce psychological, physiological, and behavior responses). For example, the harm resulting from having a bad performance (second level of cognitive appraisal) resulting from a threat perception of having too much work to do (first level of cognitive appraisal) can be followed by negative emotions, physical disturbances, and a tendency to avoid the situation; this can become even more difficult (e.g., threatening) for the individual to face not only the same situation in the future (e.g., too much work to do) but also similar situations that can happen to the individual (e.g., having a difficult task to do). Thus, the interactive model assumes that processes of cognitive appraisal can interact in such a way that can cause negative cycles of human functioning (resulting in the incapacity to deal with stressful events) or can promote positive cycles of human functioning (resulting in the capacity to deal with stressful events). This interactive process between the first and second levels of cognitive appraisals can best capture the dynamic nature of human adaptation to stress; along this process, people can feel advances and setbacks and progress and regress through a point where the individual positively or negatively adjusts to the situation.

Third, the need to not consider coping and emotion as separate entities (Lazarus, 1999) is accepted because separating the elements involved in the adaptation to stress can only provide a partial vision of the phenomenon. For example, Lazarus (1999) noted the relevance of considering emotion the "superordinate system that includes motivation (an individual's goal), appraisal, stress, emotion, and coping as components parts" (p. 101). For the interactive model, cognitive appraisal (which includes the evaluation of the effects of the stressful event and the coping efforts) and event outcomes (including psychological, physiological, and behavior outcomes) interact in a continuous way, influencing each other until event outcomes of human adaptation to stress are reached. The *slight* difference is that Lazarus (1991, 1999) put major influence on emotional processes that are implicated in the stressful encounter, while the interactive model considers equal relevant aspects related to importance, cognitive appraisal, and responses to the stressful event. Focusing on one or more of these elements can

result in turning the other aspects *secondary* in the adaptation of stress; there is no substantial research that can provide evidence for this possibility.

## Event Outcomes: Human Adaptation

The interactive process assumed in the model means that human adaptation results from the conjunction of a certain individual and a specific situation that interact with each other along the occurrence of the stressful event being stressed the dynamics characteristics of this process (because of that there is a dashed line to describe the process of human adaptation to stress; see Figure 1). The dynamics of this process can turn difficult to study human adaptation to stress not only because the person or the situation can change along this process but also because it can change the relation between the individual and the situation.

In general, the model proposes two main effects of adaptation to stress: positive human functioning and negative human functioning. From an historical point of view, there has been a great interest in studying the maladaptive reactions to stress (e.g., decreases in productivity, turnover, burnout, depression, anxiety), but more recently, psychological science has paid more attention to the adaptive reactions to stress (e.g., increases in productivity, will to stay in the organization, commitment, happiness, satisfaction) (for a review of these topics, see Beehr, 1995; Cooper et al., 2001; Folkman, 2011; Payne & Cooper, 2004). From a transactional point of view, there is no reason to not assume this perspective (Lazarus, 1991, 2001). In fact, if cognitive appraisal can result not only in threatening and harmful appraisals but also in challenging and beneficial appraisals, then not only can negative reactions occur in stressful situations but positive reactions can also be observed when studying human adaptation to stress. This is recognized by some authors who note the need to emphasize the study of both positive and negative emotions (Dewe, O'Driscoll, & Cooper, 2010; Dewe et al., 2013).

Overall, for the interactive model, cognitive appraisal will mediate the relationship between stressful events and event outcomes. It is known that positive human functioning will derive from an ability of the individual to use effective coping strategies in order to deal with the existing demands. When a correspondence between existing demands and individual resources has been achieved, the conditions for positive human functioning are increased. It is interesting to note that other theoretical proposals have stressed the importance of congruence between demands and abilities. The Person–Environment Fit model defends that event outcomes and human adaptation to stress is related to the fit between the person (P) and the environment (E) (Edwards et al., 1998). If there is a match between the person and the environment (P-E), then there are conditions for effective human functioning to exist. This correspondence is achieved when the demands of work match the individual abilities to overcome demands (demands-ability fit) and when there is a match between the individual's needs and the available resources (needs-supplies fit). Once again, it assumes a dynamic perspective between the individual and the environment (as in the interactive model); it values the need of considering the relation between demands and resources (as in the interactive model). The major difference is the role given by the interactive model to the processes of cognitive appraisal to explain the final result of human adaptation to stress.

## THE MEDIATING ROLE OF COGNITIVE APPRAISAL AND THE NEED OF “PUTTING ALL TOGETHER”

From a theoretical and empirical point of view, the interactive model proposes that the relation between stressful events and the event outcomes will be mediated by cognitive appraisal, meaning that it can change or alter the relationship between both sets of variables. Mediators give information as to how and why a causal system operates, accounting for the relationship between the predictor and the criterion variables and providing a link between one variable and another (Baron & Kenny, 1986), representing an interesting tool to determine the impact of cognitive appraisal on human adaptation to stress.

For the purpose of understanding the mediator role of cognitive appraisal on the relationship between stressful events and event outcomes, I would like to propose the analysis of the relation between tight deadlines (source of stress), coping appraisal, and burnout as an example. I will now have to ask permission from the reader to use my own personal example to illustrate the process of human adaptation to stress. At this very moment, I should be on vacation, corresponding to a period of rest after a long year of intense work related to classes, research, work as a sport psychologist, and all the “minor” but costly activities related to paperwork, meetings (and more meetings), and student orientation. Together, the only smart and fair thing I should be doing right now is being on a vacation. However, as the reader can verify, this is not the case. The main reason for not being on a vacation is that I was unable to write the chapter on time in order to be included in this first volume, which should already be sent to the publisher. So as editors of this book, my colleagues and I are now faced with a new tight deadline to deliver the book that should include this chapter (I hope....). Thus, the main feeling I have at this moment is stress related to tight deadlines. Let us now consider the case of burnout using the well-known dimensions proposed by Maslach (1982). Could stress due to tight deadlines turn my condition into burnout? Well, I hope not... However, I am now feeling that emotional exhaustion is increasing; as days are passing, my feelings of personal accomplishment are decreasing, and I occasionally start to feel some *minor* depersonalization regarding my children’s needs to go to the swimming pool and to go for a walk. I am certainly not *burned out*, but at least I can admit a positive relation between what is happening to me (tight deadlines) and some negative feelings that characterize burnout.

With this sad example as the background, let us continue to analyze the mediator role of cognitive appraisal. However, before I go on, it should also be considered that this example will be treated as exerting some control over the situation of stress, meaning that I am not describing a source of stress where there is nothing to be done in order to control the problem. As I said before, personal control over the situation can make a difference in the usefulness of the coping strategies applied to manage the stressful event. Returning to the personal example, I admit that I have some control over the situation (and by the way, of course I am involved in an important situation). For example, giving up on the chapter does not seem to be a good option right now (my control here is low), but I can at least control some other important aspects related with this task (e.g., the hours of working per days, periods of rest, information to include in the chapter).

So, let us now begin with the hypotheses that can be tested by using the interactive model. All the possible hypotheses to test are presented in Figures 3, 4, and 5.

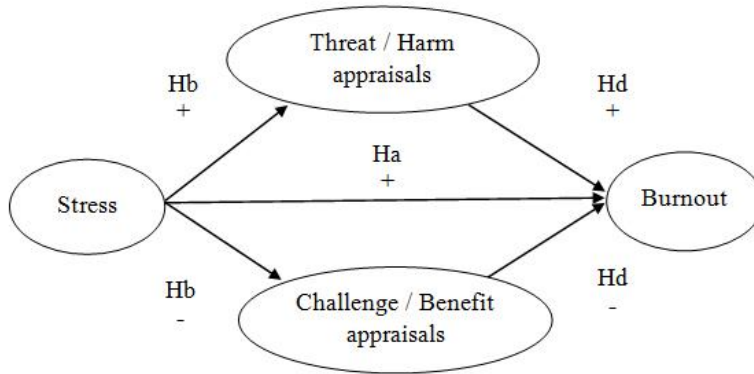


Figure 3. Mediation hypotheses for the relationship between stress, primary/tertiary cognitive appraisals, and burnout.

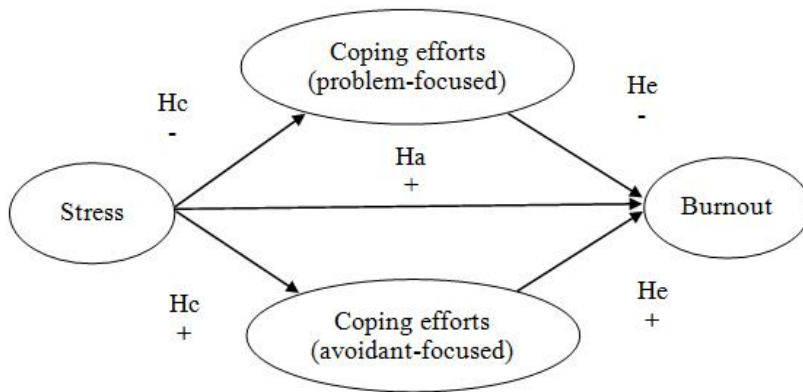


Figure 4. Mediation hypotheses for the relationship between stress, secondary/quaternary cognitive appraisals, and burnout.

For the relationship between stress and burnout, a unique hypothesis is formulated: (a) stress (as antecedent or *predictor* variable) will be positively related to burnout (as outcome or *criterion* variable); that is, tight deadlines will be positively related to burnout (this assumption is assumed by all the cases presented in Figures 3, 4 and 5). Both theoretical (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Kahn & Byosiore, 1992; Karasek & Theorell, 1990) and empirical evidence (Cano-Garcia, Padilla-Munoz, & Carrasco-Ortiz, 2005; Hakanen, Bakker, & Schaufeli, 2006) suggest this relation.

In what concerns primary and tertiary cognitive appraisals, one hypothesis can be formulated: (b) stress will be positively related to threat and harm cognitive appraisals (both at the first and second levels) and negatively related to challenge and benefit cognitive appraisals (both at the first and second levels; left side of Figure 3). Turning again to my personal example, I should admit that I started with a major sense of challenge (thinking that I would be able to finish the chapter in the period that I personally defined). I am now a little more threatened by the fact of not having fulfilled the deadline and even feel some harm by not resting with my family. Overall, the sense of challenge is still prevalent over the other two

cognitive appraisals, meaning that I am still motivated for the task, feeling that it is a job that deserves to be done and that challenges my own personal skills.

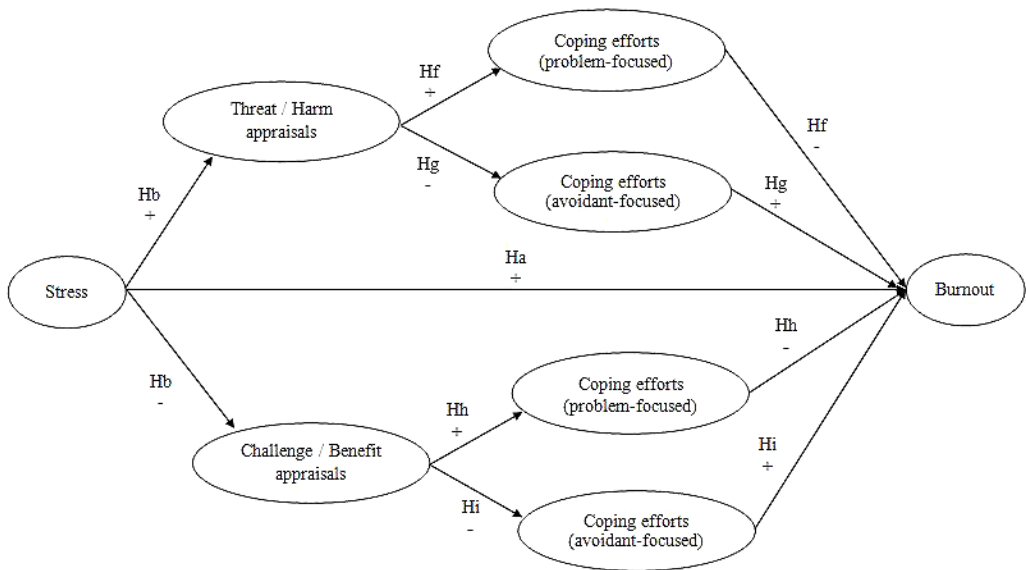


Figure 5. Mediation hypotheses for the relationship between stress, cognitive appraisals (first and second levels), and burnout.

Regarding coping efforts, one hypothesis can be formulated: (c) stress will be negatively related to coping efforts that intend to change the person-environment relation (e.g., problem-focused strategies) and positively related to coping efforts that do not intend to change the person-environment relation (e.g., avoidant emotional coping; left side of Figure 4). Applying this to my case, the major factor not turning my condition into burnout is the predominant use of problem-focused strategies mixed with emotion-focused strategies. In fact, all my efforts are focused on doing this chapter as fast as I can (and I just realize that if I was not using my personal example here, I could end this part of the chapter faster; oh God...). Using some humor strategies (at this very moment, I received an email from the other editor of this book Rui Resende – my poor friend who is also working on this book on vacation – and he was saying that he will have to stop working for a while because he has to take his lovely daughter Inês to Oporto, a city near the place where he is working right now. I just answered him saying that we should get a boyfriend for his daughter because that is what they serve for...). Well, let us turn back to our task, reinforcing this idea that for the same situation of stress I am using both problem-focused coping (most of the time) and emotion-focused coping (some of the time)...

Not much research can be described to support hypotheses (b) and (c). However, there is evidence regarding the differential effects of cognitive appraisal (e.g., threat and challenge appraisals) on individuals; for example, threat appraisal has been related to negative consequences as low coping expectancies and anxiety (Lazarus & Folkman, 1984; Sarason & Sarason, 1990; Skinner & Brewer, 1999), whereas challenge perception has been related to positive consequences as excitement in the anticipation of personal benefits (Lazarus & Folkman, 1984; Lazarus, Kanner, & Folkman, 1980). In the case of coping, research supports



the idea that coping potential can affect the way individuals deal with work demands (Mearns & Cain, 2003) and that more coping resources mitigate the strain produced by work stressors (Karasek & Theorell, 1990; Pithers, 1995).

Moving now to the mediational role of cognitive appraisal, two hypotheses can be formulated: (d) regarding primary and tertiary cognitive appraisals, cognitive appraisal will mediate the relationship between stress and burnout, meaning that the relationship will be positive between stress to threat/harm appraisals (both at the first and second levels) and to burnout and will be negative between stress to challenge/benefit appraisals (both at the first and second levels) and to burnout (right side of Figure 3); (e) regarding secondary and quaternary cognitive appraisals, cognitive appraisal will mediate the relationship between stress and burnout, meaning that the relationship will be negative between stress to coping efforts that intend to change the person-environment relation (e.g., problem-focused strategies) and to burnout and will be positive between stress to coping efforts that do not intend to change the person-environment relation (e.g., avoidant emotional coping) and to burnout (right side of Figure 4). Let me turn now for one last time to my personal example. When I realized that I would not be able to finish the chapter by the first deadline, I felt upset and somewhat anxious because it compromised my vacation (at this moment, I am still hoping to complete the task on time to take a few days of rest). First, the level of cognitive appraisal made its influence at that moment. However, is the process over at this moment? Of course not. This is the moment where tertiary and quaternary processes of cognitive appraisal come into play. Again (and because the situation continues to maintain importance and personal control) there is a need to evaluate how the situation is perceived (tertiary cognitive appraisal) and how it can be managed (quaternary cognitive appraisal). In my case, a mix of threat and challenge appraisals comes together after the setback of not having finished the chapter on time, but as in the first level of cognitive appraisal, the willingness and motivation to continue the task gained advantage to some discouragement and even anxiety of having not finished the task. This *new* situation reinforced the need for reviewing and delivering new coping efforts (e.g., provide more time to accomplish the task, organizing the information better to include in the chapter). My main point is that this interactive process occurred in the same situation and only by including all the factors in the analysis of the stressful encounter (using the words of Lazarus) can one give meaning to comprehend how adaptation is explained. Of course, the reader may be asking at this moment if these processes of cognitive appraisal can proceed at this second level of cognitive appraisal (well, I hope not for my example...). The interactive model provides the basis for the two levels of cognitive appraisal, meaning that all *new* appraisals and efforts to deal with the situation should be integrated in the second level of cognitive appraisal.

Considering these aspects, comprehending human adaptation makes it necessary to put together these processes, maintaining as the major point the mediational role of cognitive appraisal. Keeping in mind that we are still talking about manageable situations, four last hypotheses may be formulated (Figure 5). All of these hypotheses are based on the same principle that cognitive appraisals (both at the first and second levels) will mediate the relationship between stress and burnout, in these terms: (f) the conjunction of a threat appraisal used with problem-focused strategies will be negatively related to burnout; (g) the conjunction of a threat appraisal used with avoidant-focused strategies will be positively related to burnout; (h) the conjunction of a challenge appraisal used with problem-focused strategies will be negatively related to burnout; and (i) the conjunction of a challenge

appraisal used with avoidant-focused strategies will be positively related to burnout. Two aspects should be mentioned at this time. First, only two major groups of coping strategies were provided in this example (e.g., problem-focused and avoidant-focused); introducing other types of coping strategies can modify the relations within the model. However, it is sustained that cognitive appraisal will continue to assume a mediator role in these cases. Second, this set of hypotheses was formulated under the conditions that individuals are attributing importance to the stressful situation and that some control could be exerted in the situation. In this last case of control perception, if the situation has no positive resolution and can only get worse, then the relationships between variables may well be just the opposite but only future research can confirm this hypothesis.

Unfortunately, little research exists to sustain the complete set of hypotheses, particularly from (d) to (i) hypotheses (the mediational ones). In fact, despite the evidence that some variables, such as intrinsic motivation, mediate the relationship between stress and burnout (see Rubino, Luksyte, Perry, & Volpone, 2009), there is little evidence regarding the mediational impact of cognitive appraisal on the relationship between stress and burnout or other outcomes. However, Gomes, Faria, and Gonçalves (in press) completed a study with college teachers and found that primary (e.g., threat perception and challenge perception) and secondary (e.g., coping potential and control perception) cognitive appraisals partially mediated the relationship between occupational stress and burnout at work. These findings provided encouraging evidence for the importance of developing more studies on the impact of cognitive appraisal in human adaptation to stress. Additionally, Goh et al. (2010), in an interesting study of nurses and administration employees from Australia, found empirical evidence for the relation between primary appraisal, secondary appraisal, stress, and coping, supporting the main prepositions of the transactional model (Lazarus & Folkman, 1984).

## QUESTIONS FOR FUTURE RESEARCH

Due the difficulties of studying processes implicated in human adaptation to stress, there seems to be more answers than solutions to explain the dynamic nature between the person-environment relationships in stressful events. Regarding the Interactive Model of Human Adaptation to Stress, the main questions are described below.

- Generally speaking, the interactive model as a process-oriented approach assumes the sequential relation stressful event – cognitive appraisal – responses – event outcomes. As discussed previously, cognitive appraisal should be analyzed as a mediating variable between stress and event outcomes (e.g., negative and positive human functioning). The antecedent variables proposed in the model also deserve research attention and could assume the statute of moderator variables between the predictor variables (stressful event) and the criterion variables (negative and positive human functioning). By assuming the role of antecedent variable they “affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable” (Baron & Kenny, 1986, p. 1174).
- The sequential relations assumed in the interactive model are, however, only one of the existing possibilities. For example, stress can be seen as a mediator variable

between antecedent variables (e.g., coping style, social support) and consequent variables (e.g., burnout) (see Raedeke & Smith, 2004). Additionally, the way variables are understood and measured can influence their status during data analysis. As stated by Harris (1995), if coping and appraisal can transform the relationship between the person/environment fit and the emotional responses, they should be understood as mediating variables in the transaction process; however, if it is acknowledged that coping can be represented as an individual tendency/style, then it can become an antecedent variable that can change the causal structure of the transaction between the person/environment fit. Reinforcing this idea, Harris stated that it is not only a matter of discussion if coping should be analyzed as a moderator or a mediator; it can also help to “address one of the more important questions for occupational stress researchers: Does coping have stronger effects on stress or does stress have stronger effects on coping?” (p. 23).

- Antecedent factors and cognitive appraisal processes are involved in human adaptation to stress. However, how much does each one contribute to explain human adaptation? Can certain personality traits play a central role in the response to stress? Can certain situational characteristics exert a major influence that overcomes personal differences between individuals involved in a stress event? Alternatively, can cognitive appraisal assume a central role ameliorating or deteriorating human adaptation?
- In addition to evaluating each part of the transaction between the individual and the environment, it becomes crucial to evaluate the cognitive, emotional, and behavioral processes that occur between the stress event, the situation and personal characteristics, the ongoing process of cognitive appraisal, and the human response to that situation. By including these factors, research can more closely respond to the ultimate question of human adaptation to stress, namely, the reason why individuals differ in their response to stressful events.
- Due to the fundamental influence of cognitive appraisal on human adaptation to stress, there is also a lack of research regarding the impact of cognitive appraisal (from primary and secondary appraisals to tertiary and quaternary appraisals), both at the process level (i.e., capturing the ongoing transaction between the individual and the situation) and at the style level (i.e., disposition tendency to use the same type of cognitive appraisal consistently across situations and time). As referred by Lazarus (1991), there is a scarce amount of research on this topic mainly concerning the use of consistent styles of appraisal to cope with stress and also regarding the use of situational appraisal (i.e., directed at a specific encounter or setting) and generalized appraisal (i.e., global patterns that transcend a specific encounter but that can be perceived by the individual as relevant).

## **KEY POINTS TO PROMOTE POSITIVE HUMAN FUNCTIONING**

Based on the discussion so far, brief implications are presented below to promote positive human functioning in situations where stress has to be faced and that derive from the Interactive Model of Human Adaptation to Stress.

- Despite the individual nature of human adaptation to stress, there are reasons to believe that intervention in promoting positive human functioning benefits from providing “friendly places to performance”. Designing expectable and fair places to work can represent a better way of reducing stress than training and preparing individuals to deal with “unfriendly places to performance”.
- Given that some personal characteristics do not change easily and quickly (e.g., personal traits), there are advantages to helping individuals know their personal strengths and weaknesses in order to make changes that can make these individuals more apt to deal with stress.
- Giving importance to a situation is often a sign of involvement and motivation toward a certain task or job; however, excess importance can make the situation much more decisive than it is in reality. In this way, there are advantages to educating individuals to include all different facets of their lives in a parsimonious living perspective, thus being more likely to appraise stressful events as “just” one part of their everyday life.
- Challenge and even benefit appraisals can be promoted if individuals define specific and realistic goals and evaluate their performance using personal standards instead of external and comparative indicators of performance. Almost all (if not all) places of performance are sensitive to programs of goal-setting that can promote the individual’s feelings of competency and efficacy. By having individuals optimistic about their skills to overcome stress and concentrated in their own performance, there will be less likelihood of threat and harm appraisals.
- More important than the number of coping skills possessed by the individual, it is important to train individuals to use in a efficacious way a restricted set of coping skills; this should include strategies to use when there is something that can be done in order to change the situation (problem-focused) as well as when there is nothing that can be done to change the situation except adapt the best way possible (emotion-focused).
- The adaptation to stressful situations is very dependent on personal control. Individuals should have at least some control over their tasks and roles in the performance situation. There are no excuses to not give control to individuals in order to do their tasks, even in very stable and routinized places of performance. Little control is better than no control.
- Responses to stressful events are automatic. However, people can be trained to change their responses to these events or at least to control their reactions. Most often, people are not even aware of the relationship between a stressful event and a specific personal reaction; when they realize that connection, they start to gain control over the situation. If training is used in advance, their chances of controlling negative effects of stress increase dramatically.
- Coping with stressful events is an ongoing and often unfinished process. This implies that individuals should be educated regarding the cycles of stress and most important people should be trained in how to use their coping skills in their lives.
- Finally, society and each human being should not expect less than positive human functioning. This is not to say that negative human functioning should be banned from human existence because it is a part of becoming a better person. However,

what seems intolerable is having individuals in performance situations where what they can expect is to not make the situation worse than it is. Human beings should expect to be happy most of the time, even when they are in very demanding performance settings.

## CONCLUSION

I would like to finish the way I started this chapter, by emphasizing that the relationship between stress and human adaptation is far from simple. Major factors involved in this relationship were presented. Despite the importance of each one, major attention should be given to the processes of cognitive appraisal. Perhaps there is not an influential factor to explain why different individuals submitted to the same stressful situation can react and adapt in different ways, and why the same individual submitted to similar situations can react and adapt in different ways. However, the complexities of studying all factors involved in the stress process become very difficult to figure out the role of cognitive appraisal on human adaptation to stress; however, there is growing evidence from empirical studies that confirm the influence of cognitive appraisal, turning this path into a challenging one.

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# INDEX

## #

20th century, 4, 9, 88, 89, 90  
21st century, xi, 37, 38, 52

## A

Abraham, 4  
absence management, 17  
academic tasks, 50  
access, 26, 52, 62, 74  
accommodations, xi  
accounting, xviii, 182  
action research, 49, 162  
actuality, 165  
acute stress, 90, 102  
adjustment, 143, 144, 145, 146, 156, 159, 167, 193  
adolescent development, 122  
adolescent female, 136  
adolescents, 148, 189  
adulthood, 65, 81, 157  
adults, ix, 6, 11, 64, 66, 67, 148  
advancement(s), 47, 86, 178  
adverse effects, 86  
adverse event, 147  
affective experience, 62, 82  
Africa, 11  
age, xxi, 6, 8, 28, 30, 31, 39, 55, 65, 117, 145, 171, 194  
aggression, 65  
AIDS, 55  
altruism, 5  
American Psychological Association (APA), xxi, 7, 8, 33, 34, 136  
ancestors, 7  
anger, 16, 59, 60, 61, 81, 87, 147, 148, 150, 189  
animal behavior, 7  
antecedent variables, 171, 186, 187

anthropology, 6  
antithesis, 133  
anxiety, xi, 16, 17, 18, 40, 50, 53, 60, 61, 65, 66, 76, 87, 88, 92, 96, 102, 103, 106, 108, 110, 141, 147, 148, 149, 153, 157, 158, 160, 161, 174, 176, 178, 181, 184, 185, 189, 190, 191, 192, 193, 194  
anxiety disorder, 108  
aortic valve, 92  
applied psychology, 162  
appraisals, 24, 25, 28, 66, 89, 91, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 109, 110, 144, 152, 154, 156, 160, 167, 172, 173, 174, 175, 179, 180, 181, 183, 184, 185, 186, 187, 188, 192, 194  
Aristotle, 77  
arithmetic, 98  
arousal, 90, 102, 107, 108, 149  
Asia, xxi, 129  
assertiveness, 50, 131  
assessment, 40, 100, 136, 158  
attitudes, 26, 37, 40, 51, 54, 61, 70, 80  
attribution, 45, 68, 78  
Australasia, 129  
authority(s), 5, 47  
automaticity, 44  
autonomic nervous system (ANS), 87, 149  
autonomy, 22, 25, 45, 48, 49, 65, 72, 73, 104, 122, 124, 133  
aversion, 60  
avoidance, 64, 92, 95, 96, 99, 100, 145, 151, 173  
awareness, 44

## B

bad behavior, 55  
badminton, 107  
bargaining, 64  
base, 53, 95, 120, 128, 130

- basic needs, 123, 139  
 behavior therapy, 111, 161  
 behavioral aspects, xxi  
 behaviors, 40, 57, 59, 61, 62, 64, 65, 67, 72, 73, 74, 75, 119, 120, 122, 130, 134, 139, 141, 145, 160  
 benefits, xv, 51, 63, 70, 73, 74, 75, 80, 98, 103, 121, 122, 132, 133, 171, 188  
 benign, 89, 175  
 biological sciences, 3  
 biologically programmed needs, 5  
 biotechnology, 10  
 blame, 10, 39, 172  
 blood, 87, 91, 92, 93, 94, 149, 151, 177, 178  
 blood flow, 87, 91, 93, 94, 149  
 blood pressure, 94, 177, 178  
 bonds, 5  
 boredom, 53  
 brain, 5, 91, 93, 94  
 Brazil, 129  
 breakdown, 38, 46  
 breast cancer, 147, 159, 160  
 Britain, 31, 32  
 bullying, xx, 16, 73, 82  
 burn, 141  
 burnout scores, 117, 122, 126, 129, 133  
 businesses, 9, 40  
 Butcher, 123, 134
- C**
- cardiac activity, 178  
 cardiac output, 92  
 cardiovascular disease, 191  
 case study(s), 136, 137  
 catecholamines, 87, 90, 91, 178  
 categorization, 153  
 causal relationship, 64, 98  
 censorship, 155  
 challenges, 11, 16, 23, 28, 30, 34, 39, 44, 49, 52, 73, 74, 130, 141, 143, 144, 152, 155, 184  
 chemical, 11  
 Chicago, xviii, 6, 106  
 children, v, ix, 10, 11, 119, 182  
 China, 129  
 cholesterol, 178  
 chronic fatigue, 46, 115  
 circulation, 92  
 citizenship, 63  
 clarity, 20, 44  
 classes, 60, 74, 182  
 classification, 9, 11, 60, 81, 153  
 clean air, 118  
 clients, 10, 37, 39, 40, 115  
 climate, 25, 49, 54, 69, 70, 80, 99, 120, 121, 128, 132, 140, 141, 161  
 clinical psychology, xix, 31  
 close relationships, 121, 146  
 coaches, x, xiii, xv, xxiv, 10, 74, 94, 97, 101, 104, 107, 110, 114, 119, 121, 132, 134, 140, 141, 144, 147, 149, 154, 161  
 cognition, 62, 67, 86, 88, 148, 150, 151, 157, 191  
 cognitive capacity, 69  
 cognitive flexibility, 49  
 cognitive function, 94  
 cognitive performance, 95  
 cognitive process, 79, 148, 150, 156  
 cognitive processing, 148, 150  
 cognitive psychology, 89  
 cognitive skills, 158  
 cognitive system, 150  
 cognitive tasks, 108  
 collaboration, 18, 55, 64, 69  
 collective resource, 146  
 college students, 66, 67, 194  
 color, 10  
 commerce, xviii  
 communication, 26, 34, 69  
 community, 9, 10, 37, 46, 47, 52, 113, 114, 133, 158, 174, 177  
 compassion, xxv, 60, 70, 80, 154, 156, 160  
 competition, xvi, 39, 73, 85, 86, 90, 91, 92, 97, 105, 108, 110, 115, 120, 123, 149, 151, 155, 156, 160, 191, 194  
 competitive demand, 114, 145  
 competitive sport, 94, 137, 158, 190, 192  
 competitiveness, 16, 68, 108  
 competitors, 37  
 complement, 42, 131  
 complexity, x, 5, 19, 26, 27, 40, 130, 134, 165  
 comprehension, 166, 178  
 compulsion, 44  
 conception, 4, 89  
 conceptual model, 3, 119, 138, 159, 165, 166  
 conceptualization, 40, 41, 106, 115, 129, 140, 160, 192  
 conditioning, 117  
 conference, xi, 32  
 conflict, 25, 46, 47, 48, 49, 52, 64, 121, 132  
 conflict resolution, 25, 64  
 confrontation, 170, 171  
 Congress, 8  
 congruence, 46, 133, 172, 181  
 conscientiousness, 53  
 consciousness, 3, 4, 5, 87  
 consensus, 28, 118, 131, 139, 151  
 conservation, 10, 158



construct validity, 129  
 consulting, xix, 85  
 control condition, 66  
 control group, 49, 50, 51, 52, 61, 102, 154  
 controlled trials, 108  
 controversial, 4  
 convention, 26  
 convergence, 150  
 conversations, 154  
 conviction, 46  
 cooperation, 18, 26, 50, 120  
 coordination, 18, 156  
 coping strategies, 23, 119, 129, 153, 154, 156, 158,  
 173, 174, 175, 179, 180, 181, 182, 186, 189  
 coronary heart disease, 190  
 corporate scandals, 19  
 correlation(s), 43, 64, 127  
 cortisol, 90, 93, 178  
 cost, 15, 17, 40, 55, 58, 68, 76, 103  
 cost saving, 17  
 counseling, 71  
 creativity, xvii, 6, 7, 27, 40, 69  
 crises, 18, 107  
 critical analysis, 56, 140  
 critical period, 149  
 criticism, 76, 154, 155, 156  
 Croatia, xviii, 5, 8  
 cross-cultural comparison, 128, 129  
 cross-sectional study, 191  
 crown, 141  
 cues, 66, 106  
 cultivation, 49  
 cultural influence, 128  
 culture, 76, 79, 113, 114, 116, 117, 128, 132, 133,  
 134, 149, 158, 169  
 cure(s), 9, 10  
 currency, 19  
 customer service, 64, 79  
 customers, 63, 64  
 cycles, 180, 188  
 cycling, xxiii

## D

damages, 55  
 dance, 135  
 dancers, 44, 139  
 danger, 10, 77, 91, 99, 101, 151  
 data analysis, 187  
 data collection, 71  
 data gathering, 74  
 database, 124  
 defence, 90

demographic characteristics, 39, 66  
 demonstrations, 51  
 denial, 153, 180  
 Denmark, 8  
 depersonalization, 39, 114, 115, 182  
 depression, 15, 16, 18, 40, 49, 60, 65, 66, 81, 115,  
 177, 181  
 depth, 20, 28, 52, 131  
 derivatives, 4  
 destiny, 3  
 detachment, 39, 40, 115  
 determinism, 3  
 devaluation, 115, 116, 120, 121, 122, 123, 128, 129  
 developmental process, 54  
 diabetes, 193  
 Diagnostic and Statistical Manual, 9  
 diet, 118  
 dignity, 5  
 dilation, 87, 149  
 direct action, 179  
 direct cost, 17  
 discrimination, 17  
 diseases, 74, 175  
 disgust, 16, 60, 148  
 disorder, 66, 190  
 disposition, 47, 126, 187  
 dissatisfaction, 69  
 distress, 30, 38, 43, 54, 80, 88, 93, 109, 168, 175,  
 178, 180, 193  
 distribution, 117  
 diversity, xx, 27, 77  
 dominance, 22, 90  
 drawing, 21, 44, 90, 105, 145  
 drugs, 170  
 DSM, 8

## E

economic crisis, 16  
 economic downturn, 15, 18  
 economic growth, 18  
 economic ideology, 19  
 economic policy, 16, 18  
 economic progress, 22  
 economic resources, 170  
 economic theory, 22  
 economics, 19, 20, 22, 24, 28  
 editors, xiii, 182  
 education, xvi, xxiii, 10, 20, 43, 50, 71, 139, 159  
 educational opportunities, v  
 emotion, xxi, xxii, xxiv, xxv, 33, 49, 60, 61, 62, 71,  
 77, 79, 81, 88, 89, 101, 102, 103, 108, 109, 110,  
 144, 147, 148, 150, 151, 152, 153, 154, 155, 156,

157, 158, 159, 161, 162, 171, 172, 173, 174, 176,  
178, 180, 184, 188, 189, 192, 194  
emotion regulation, xxiv, xxv, 102, 108, 147, 151,  
153, 154, 155, 156, 158, 161  
emotional distress, 145, 173, 180  
emotional exhaustion, 40, 114, 182  
emotional experience, xxiv, 63, 150, 153, 156  
emotional health, 66  
emotional intelligence, 62, 79, 81  
emotional processes, 180  
emotional reactions, 109, 150, 151, 178  
emotional responses, 61, 95, 104, 144, 171, 175, 177,  
187  
emotional state, 46, 150, 152, 156, 190  
emotional well-being, 61, 67, 78, 152  
empirical studies, 70, 189  
employees, 17, 18, 20, 25, 27, 37, 38, 39, 40, 41, 42,  
43, 45, 46, 47, 48, 49, 50, 52, 61, 65, 67, 68, 69,  
70, 71, 72, 73, 74, 75, 76, 82, 186  
employers, 18, 38, 40, 70  
employment, 11, 17, 145  
encouragement, v, 49  
endocrinology, 86  
endurance, 118, 137  
energy, 7, 38, 39, 41, 42, 43, 44, 46, 48, 52, 61, 73,  
76, 86, 87, 88, 91, 93, 94, 121, 127, 131, 149,  
151, 177  
energy expenditure, 86  
England, 80, 100, 108, 136  
entrapment, 122, 133, 134  
environment(s), 5, 20, 23, 25, 27, 28, 37, 49, 51, 52,  
54, 59, 60, 61, 67, 73, 85, 86, 87, 89, 97, 101,  
104, 109, 130, 131, 132, 133, 143, 146, 149, 153,  
155, 156, 166, 167, 169, 170, 171, 172, 173, 178,  
181, 184, 185, 186, 187  
environmental characteristics, 45  
environmental conditions, 61, 146, 178  
environmental factors, 45, 113, 118, 132  
environmental stress, 87, 118  
epinephrine, 92  
erosion, 133  
ethical issues, 56  
ethnicity, 128  
Europe, xx, xxi, 6, 74, 129  
European Union, 22, 33  
eustress, 88  
everyday life, 188  
evidence, 15, 16, 18, 20, 21, 25, 26, 27, 31, 32, 33,  
34, 45, 56, 57, 59, 60, 62, 63, 64, 65, 75, 85, 106,  
113, 116, 136, 141, 144, 150, 151, 180, 181, 183,  
184, 186, 189, 190  
evolution, 3, 4, 5, 10, 15, 87, 88, 160  
excretion, 89, 108

execution, 47  
exercise, ix, xv, xxi, xxiii, xxiv, 10, 74, 102, 106,  
109, 110, 118, 131, 136, 137, 140, 157, 162, 174,  
190  
expertise, 27, 28, 157  
exposure, 90, 100, 101, 118, 154, 177, 179  
external environment, 87  
external locus of control, 39, 171  
extraversion, 62, 78  
extrinsic rewards, 47

## F

facial expression, 149  
facial muscles, 149  
facilitators, 51  
fairness, 46, 47, 133  
faith, 80  
families, xv, 9, 10, 60, 73, 74, 75, 156  
family interactions, 40  
family life, 119  
family members, 62, 74  
family support, 47  
fantasy, 73  
fatty acids, 93  
fear(s), 4, 6, 17, 60, 61, 76, 87, 90, 107, 148, 151  
feelings, xi, 47, 50, 51, 60, 61, 62, 69, 72, 73, 86,  
102, 105, 115, 116, 119, 121, 131, 133, 146, 148,  
174, 182, 188  
filial piety, 5  
financial, 8, 17, 18, 65, 69, 118, 143  
financial crisis, 17, 18  
financial resources, 69  
financial support, 8  
fires, 6  
fishing, 8  
flexibility, 50, 70, 72, 150  
flight, 87, 107  
fluid, 87  
football, xxii, 133  
force, 10, 19, 20, 47, 63, 114, 126  
formation, 8, 158  
foundations, 105, 157, 161, 190  
fragility, 106  
framing, 189  
France, 129  
free will, 5, 11  
friendship, 63  
fringe benefits, 70  
frontal cortex, 7  
fundamental needs, 70, 133  
funding, 8  
funds, 80

**G**

Galileo, 4  
 garbage, 10  
 GDP, 18, 22, 32  
 genes, 5, 10  
 genetics, 3, 10  
 Germany, 129  
 glucose, 91, 93, 94, 106  
 goal attainment, 140, 145, 160  
 goal setting, 72, 131, 153, 156  
 goal-setting, 188  
 God, 184  
 governments, 9  
 graduate program, 4  
 Great Britain, 128  
 Greeks, 87  
 growth, 8, 16, 19, 20, 22, 28, 29, 30, 41, 48, 58, 63,  
     69, 75, 122, 137, 143, 147, 159, 160, 161, 162  
 guidance, 132  
 guidelines, 25, 110, 131, 159  
 guilt, 60, 76, 147, 148  
 guilty, 149  
 gymnasts, 136, 150

**H**

hair, 10  
 happiness, xii, 15, 60, 64, 65, 69, 80, 82, 145, 148,  
     149, 159, 181  
 harmony, 6  
 Hawaii, 7  
 healing, 49  
 health, xii, xix, xxi, 16, 17, 18, 20, 21, 22, 24, 25, 26,  
     27, 28, 29, 30, 31, 32, 33, 34, 37, 40, 41, 43, 44,  
     46, 48, 51, 54, 55, 56, 57, 58, 59, 60, 63, 64, 65,  
     66, 67, 69, 70, 74, 75, 76, 77, 78, 79, 82, 86, 88,  
     89, 140, 170, 190, 191, 193  
 Health and Safety Executive (HSE), 16  
 health care, 51, 55, 56, 74, 75  
 health care costs, 74, 75  
 health insurance, 70  
 health problems, 25, 40, 65  
 health psychology, 33, 54, 55, 56  
 health status, 170, 191  
 heart disease, 40  
 heart rate, 89, 90, 92, 149, 176  
 high school, 6  
 higher education, 39  
 history, 4, 5, 9, 32, 73, 93, 101, 190, 192  
 homeostasis, 87, 88, 145  
 honesty, 5

Hong Kong, 107  
 hopelessness, 115  
 hormones, 61  
 host, xii, 103, 105  
 hostility, 39, 60  
 hotel, 6  
 human activity, 22  
 human behavior, 4, 6, 7, 58, 59, 135  
 human body, 87, 114  
 human development, ix, x  
 human existence, 3, 188  
 human experience, 21  
 human health, xii  
 human nature, 76  
 human resource development, 67  
 Human Resource Management, xviii, 77  
 human resources, 19, 30, 58  
 humanism, xi  
 humanistic psychology, 76  
 Hunter, 101, 106, 179, 189  
 hypothesis, 183, 184, 186

**I**

ideal(s), 10, 46, 172  
 identification, 27, 42  
 identity, xii, 30, 72, 73, 121, 122, 123, 135, 161, 172  
 identity foreclosure, 122  
 ideology, 19  
 image, 5, 10  
 imagery, 101, 103, 104, 105, 107, 108, 110, 111,  
     153, 156, 157, 162  
 imagination, 4  
 impairments, 91  
 improvements, 21, 25, 29, 51, 68, 69  
 income, 63  
 incumbents, 62  
 independence, 41, 45, 47, 65, 154  
 indexing, 90  
 individual character, 117, 124, 125, 130, 178  
 individual characteristics, 117, 124, 125, 130, 178  
 individual differences, 148, 168, 178, 192  
 induction, xii, 150  
 inheritance, 5  
 injury(s), 135, 143, 144, 147, 160, 162  
 inner balance, 118  
 inoculation, 50, 97, 131  
 insecurity, 76  
 insomnia, 40  
 institutions, xi, 9, 21  
 integration, 26, 29, 53, 161  
 intelligence, 79  
 intentionality, 78

interaction effect(s), 66  
interdependence, 34  
interest rates, 18  
interface, 148, 150, 156  
internal environment, 87, 88  
international competition, 190  
interpersonal factors, 61  
interpersonal relations, 16, 39, 117, 154, 192  
interpersonal relationships, 16, 117, 154, 192  
intervention, xii, 4, 15, 16, 19, 24, 25, 27, 28, 34, 37, 38, 41, 48, 50, 51, 52, 53, 55, 65, 66, 67, 71, 74, 75, 79, 80, 107, 115, 130, 131, 132, 133, 138, 144, 154, 155, 157, 160, 161, 162, 188, 190  
intervention strategies, 19, 25, 27, 28, 37, 38, 41, 50, 65, 67, 130, 133, 138  
intimacy, 72  
intrinsic motivation, 53, 72, 123, 140, 151, 152, 186  
intrinsic rewards, 47, 73  
investment(s), 41, 69, 79, 121, 122  
investors, 11  
Iran, 129  
irritability, 40  
isolation, 108, 126, 127, 133, 191  
issues, xix, xx, 10, 16, 18, 19, 20, 21, 23, 25, 26, 27, 28, 37, 47, 52, 54, 56, 57, 58, 74, 82, 108, 131, 136, 143, 148, 158, 190, 191, 192  
Italy, xviii, 8

## J

Japan, 129  
job characteristics, 28, 65  
job dissatisfaction, 60  
job performance, 40, 53, 73, 78, 82, 114, 177, 194  
job satisfaction, 43, 47, 61, 63, 70, 71, 74, 75, 82  
job strain, 49, 191, 194  
job-search, 78  
Jordan, 134

## K

kill, 11  
knots, 108

## L

labor force, 40  
labour market, 21  
lack of control, 46  
languages, 129  
laws, 157

lead, 9, 17, 28, 29, 46, 61, 62, 65, 76, 80, 82, 89, 94, 105, 126, 130, 151, 152, 156, 161, 178, 194  
leadership, xv, xx, 29, 30, 62, 63, 69, 77, 79, 99, 108, 119, 128, 140, 141  
leadership development, 29, 77  
leadership style, 62, 63, 119, 128, 141  
learned helplessness, 145  
learning, 5, 6, 10, 28, 29, 30, 49, 55, 69, 75, 120, 148, 154, 161  
legs, 33, 79, 151  
leisure, 44, 53, 70  
leisure time, 70  
lens, 16  
level of education, 39  
life cycle, ix, 170  
life experiences, 7, 170  
life satisfaction, xxv, 49, 68, 145  
lifetime, 7  
light, 52, 69, 119, 130, 160  
linear model, 45  
linear modeling, 45  
locus, 193  
loneliness, 60  
longitudinal study, 50, 54  
love, v, 7, 60, 72, 79  
low job control, 17

## M

magnitude, 117, 123, 125, 128, 129  
majority, xxiii  
man, 5, 7, 87  
management, xviii, xx, xxi, 15, 17, 18, 19, 22, 24, 25, 29, 31, 32, 33, 34, 38, 50, 51, 52, 56, 57, 58, 62, 69, 71, 74, 77, 80, 81, 82, 85, 99, 100, 104, 119, 131, 132, 153, 154, 161, 192, 193  
manipulation, 98, 99, 103, 108, 109  
mantle, 9  
manufacturing, 71  
marital status, 39, 159  
marriage, 63  
matter, 4, 9, 20, 22, 77, 108, 187  
MBI, 40, 42, 43, 50, 115, 141  
mean arterial pressure, 94  
measurement(s), xxi, 4, 22, 33, 54, 56, 69, 76, 80, 81, 89, 96, 110, 116, 128, 136, 140, 191  
media, 72, 76  
median, 17  
mediation, 43, 48, 54, 63, 125  
medicine, 9, 54, 118  
medulla, 87  
megalomania, 5  
memory, 160

mental arithmetic, 98  
 mental health, xiii, 9, 40, 57, 58, 66, 79, 180  
 mental illness, 57, 58, 66  
 mental state, 41  
 meta-analysis, 31, 48, 49, 53, 56, 63, 75, 81, 108, 138, 194  
 Mexico, xi, 8  
 miracle cure, 10  
 missions, 20  
 Missouri, xvii  
 misuse, 76  
 modelling, 20  
 models, 18, 22, 43, 54, 92, 113, 124, 125, 144, 147  
 moderates, 70  
 moderators, 190, 194  
 modifications, 50, 132  
 molecules, 4  
 momentum, 9, 10, 105  
 moral standards, 148  
 morale, 18, 74, 145  
 morbidity, 191  
 mortality, 191  
 Moscow, 8  
 motivation, xvii, xxii, 40, 44, 48, 49, 53, 68, 69, 92, 93, 107, 109, 113, 114, 117, 118, 120, 122, 123, 124, 125, 128, 132, 133, 134, 135, 136, 137, 138, 139, 140, 146, 158, 162, 175, 176, 180, 185, 188, 194  
 motor control, 149  
 motor skills, 107  
 motor task, 110  
 multidimensional, ix, x, xii, 115, 116, 124, 126, 127, 129, 134  
 muscles, 87, 93, 94  
 musculoskeletal, 82  
 musculoskeletal complaints, 82  
 music, 153, 156  
 musicians, 44

## N

nanotechnologies, 9  
 narcotics, 11  
 narratives, xii  
 nation states, 9  
 nationality, 128  
 natural disaster(s), 93  
 natural science(s), 6  
 negative affectivity, 170, 190  
 negative consequences, 76, 149, 165, 184  
 negative effects, 40, 146, 188  
 negative emotions, 60, 62, 65, 67, 88, 90, 91, 144, 148, 151, 152, 155, 157, 177, 178, 179, 180, 181

negative mood, 193  
 negative outcomes, 46, 124, 126, 144, 148  
 negative relation, 67  
 neglect, 77  
 negotiation, 64  
 nervous system, 87, 93  
 nervousness, 60, 106  
 neutral, 42, 60, 145  
 New Zealand, xviii, 128, 129, 191  
 Nietzsche, 6  
 norepinephrine, 92  
 normal development, 11  
 North America, xxiii, 40, 74, 150  
 Norway, xx, 57, 129  
 nurses, 46, 186, 190  
 nursing, 74  
 nutrition, 74, 119, 130, 131

## O

objectification, 39  
 objectivity, 6  
 obstacles, 61, 68, 127, 143  
 occupational groups, 141  
 occupational health, xx, 29, 33, 34, 190, 192  
 OECD, 18, 22, 34  
 officials, 10, 90, 150  
 oil, xi  
 openness, 39  
 opportunities, v, 10, 15, 22, 24, 25, 30, 38, 47, 48, 82, 145, 154  
 optimal performance, 143  
 optimism, 29, 45, 49, 55, 57, 58, 65, 66, 67, 68, 69, 70, 71, 75, 76, 82, 124, 127, 135, 137, 171  
 organic matter, 3  
 organism, 88, 108  
 organizational behavior, 45, 51, 54, 57, 58, 59, 64, 67, 68, 70, 73, 77, 80, 81, 82  
 organizational culture, 25, 72, 129, 135, 170  
 organizational stress, 141, 158, 190  
 organize, ix, 59  
 overlap, 73, 114, 118, 119, 130  
 overtraining, 113, 114, 115, 118, 119, 130, 131, 135, 138, 139, 144

## P

pain, 107, 109  
 painters, 44  
 parallel, 29, 38, 46  
 parental criticism, 125

- parents, v, xiii, xviii, xxiv, 4, 101, 104, 114, 119, 132, 154, 156, 161  
 participants, 8, 48, 52, 60, 63, 67, 89, 94, 95, 96, 98, 99, 101, 102, 103, 117, 154, 155, 156  
 pathology, 9, 66  
 pathways, 127  
 patriotism, 5  
 pedagogy, xvi  
 PEP, 92, 93  
 peptic ulcer, 178  
 perceived control, 47, 92, 95, 99, 103, 105, 122, 123  
 perceptions of control, 92  
 perfectionism, xxiv, 119, 124, 125, 126, 128, 130, 134, 135, 136, 137, 139, 141, 158  
 performance indicator, 156  
 performers, 86, 98, 105, 158  
 permission, 182  
 perseverance, 45  
 personal accomplishment, 39, 73, 182  
 personal benefit, 184  
 personal control, 72, 121, 166, 173, 175, 176, 182, 185, 188  
 personal efficacy, 42  
 personal goals, 89, 127, 150, 170, 172  
 personal learning, 48  
 personal problems, 18  
 personal responsibility, 146  
 personal values, 123  
 personality, xii, 39, 48, 56, 61, 69, 80, 81, 106, 107, 116, 118, 124, 126, 127, 144, 146, 161, 169, 187, 189  
 personality characteristics, 48, 69, 144  
 personality differences, 116  
 personality traits, 69, 169, 187  
 personhood, 10  
 person-oriented approach, 136, 139  
 pessimism, 127  
 Philadelphia, 8  
 physical activity, xxiv, 140  
 physical education, xvi  
 physical exercise, 70, 131  
 physical fitness, 145  
 physical health, xii, 22, 38, 56, 75, 87, 107, 145  
 physical well-being, 47, 60, 74, 140, 151  
 physics, 9  
 Physiological, 89, 176  
 physiological arousal, 102, 108, 151, 160  
 physiology, 111, 118, 147  
 placebo, 108  
 planets, 4  
 Plato, 6  
 playing, 3, 6, 51, 95, 153  
 pleasure, xi, xii, 4, 44, 47, 60, 123  
 police, 53  
 policy, 6, 16, 18, 19, 22, 24, 25, 27  
 political force, 24  
 political system, 6  
 politics, 143  
 poor performance, 38, 43, 69, 90, 158  
 population, 5, 31, 66, 117  
 Portugal, xv, xvi, 129, 165  
 positive emotions, 45, 49, 53, 57, 58, 59, 60, 62, 64, 65, 66, 67, 69, 71, 72, 75, 78, 88, 90, 144, 145, 148, 149, 150, 151, 152, 156, 157, 174, 178, 191  
 positive feedback, 43  
 positive mood, 64, 79, 150  
 positive psychology, ix, xi, xii, xiii, xvii, 5, 8, 9, 10, 11, 15, 19, 20, 21, 22, 24, 28, 29, 32, 33, 34, 53, 57, 58, 68, 71, 76, 78, 79, 133, 157  
 positive relationship, 66, 123  
 posttraumatic stress, 194  
 pragmatism, 27  
 predators, 93  
 predictability, 170  
 predictive validity, 94  
 predictor variables, 186  
 preparation, 141, 151, 158  
 presidency, 7  
 president, xix, xxiii, 7  
 prevention, 25, 33, 124, 130, 131, 132  
 preventive level, 24  
 primacy, 16  
 primary appraisal, 23, 172, 186  
 principles, 20, 22, 67, 68, 87, 130  
 probability, 38, 52, 152  
 problem solving, 59, 69, 71  
 problem-focused coping, 125, 173, 175, 184  
 problem-solving, xi  
 professional development, 49, 68  
 professionals, 26, 73  
 profit, 11, 64  
 profitability, 20  
 project, 62, 74  
 proposition, 20, 42, 52  
 prosocial behavior, 64, 79  
 prosperity, 16, 58  
 protection, 89  
 protective factors, 146  
 psychobiology, 192  
 psychodynamic aspects, 61  
 psychological connections, 40  
 psychological development, 114  
 psychological distress, 39  
 psychological health, xii, 21, 135  
 psychological phenomena, 128  
 psychological processes, 38, 128

psychological resources, 45, 68, 71, 152, 155  
 psychological states, 42, 50, 95, 157, 190  
 psychological stress, 89, 109, 117, 118, 147, 169,  
 173, 177, 190, 192  
 psychological stressors, 117, 147  
 psychological variables, 118  
 psychological well-being, xvii, 117  
 psychologist, xv, xx, xxi, 4, 6, 97, 104, 182  
 psychometric properties, 40, 76, 129  
 psychopathology, 8  
 psychosocial functioning, 66  
 psychosocial stress, 114, 130, 131  
 psychosomatic, 88  
 psychotherapy, 107  
 public policy, 5, 21, 29  
 public sector, 37  
 publishing, 9, 79  
 punishment, 120

## Q

quality of life, 22, 28, 74  
 questioning, 18, 116  
 questionnaire, 71, 116, 131, 138, 158

## R

race, 105, 149  
 random assignment, 50  
 rationality, 81, 160  
 reactions, 24, 28, 59, 62, 86, 88, 91, 94, 102, 104,  
 109, 148, 150, 153, 154, 156, 168, 172, 177, 181,  
 188  
 reactivity, 90, 92, 93, 94, 95, 96, 97, 98, 99, 100,  
 101, 103, 105, 106  
 reading, 6, 154  
 realism, 28  
 reality, 6, 28, 76, 117, 188  
 recession, 16, 17, 34  
 reciprocity, 64, 70  
 recognition, xii, 8, 18, 47, 49, 50, 69, 88, 113, 124,  
 125, 149  
 recommendations, 130  
 reconstruction, 192  
 recovery, xxiii, 18, 118, 119, 130, 131, 138, 144,  
 157, 159  
 recovery process, 119  
 reductionism, 7, 22  
 regression, 65  
 regulations, 123, 134  
 reinforcement, 125  
 relational theory, 165, 166, 177

relationship quality, 155  
 relatives, 6  
 relaxation, 25, 50, 119, 131, 153, 156, 159, 179  
 relevance, 16, 19, 30, 63, 87, 89, 94, 138, 169, 172,  
 175, 180  
 reliability, 76, 139  
 relief, 60, 175  
 replication, 135  
 reputation, 9, 10, 29  
 requirements, 5, 63, 119  
 researchers, xi, xiii, 15, 21, 22, 23, 26, 27, 28, 30, 37,  
 38, 41, 42, 50, 52, 60, 64, 65, 69, 76, 90, 96, 117,  
 123, 124, 125, 126, 127, 129, 144, 145, 146, 152,  
 153, 179, 187  
 resilience, xii, 29, 41, 57, 59, 61, 65, 67, 68, 70, 71,  
 73, 75, 82, 86, 109, 143, 146, 157, 159, 160, 162  
 resistance, 89, 91, 92  
 resolution, 10, 47, 175, 186  
 respiration, 87, 149  
 response, 4, 17, 23, 24, 26, 33, 38, 86, 87, 88, 90, 92,  
 93, 101, 102, 104, 116, 117, 131, 147, 148, 151,  
 168, 176, 178, 187  
 responsiveness, 154  
 restoration, 118  
 restrictions, 65  
 restructuring, 17, 25, 99, 153, 156  
 retirement, 91  
 rewards, 47, 120, 121, 123, 133  
 risk, xv, xxi, 25, 27, 30, 33, 66, 76, 113, 114, 118,  
 121, 125, 127, 133  
 risk assessment, 25  
 risk factors, 27, 118  
 risk management, 33  
 risks, 74, 139  
 roots, 120, 124  
 routes, 87, 127  
 routines, 66  
 Royal Society, 78, 157  
 rugby, 129, 135, 137  
 rules, 6, 8, 87, 192  
 Russia, 8

## S

sadness, 60, 61, 147, 148, 149, 150  
 safety, xix, 21, 151  
 sarcasm, 69  
 scarcity, 174  
 schema, 148  
 scholarship, 29, 57, 58, 78  
 school, 9, 65, 98, 118, 131  
 science, 3, 7, 9, 19, 21, 25, 33, 58, 165, 181, 192  
 scientific knowledge, 3

- scientific theory, 128  
 scientific understanding, 21  
 scope, 24, 59, 69, 148  
 scripts, 103  
 security, 17  
 self-assessment, 50  
 self-awareness, 62, 148  
 self-concept, 145  
 self-confidence, 103  
 self-consciousness, 44, 100  
 self-control, 106, 109  
 self-efficacy, 29, 45, 49, 50, 53, 55, 57, 66, 68, 69,  
     71, 72, 75, 81, 92, 95, 96, 99, 100, 103, 104, 105,  
     108, 110, 147, 171  
 self-esteem, 39, 40, 109, 119, 145, 171  
 self-evaluations, 39  
 self-interest, 19  
 self-regulation, 87, 94, 102, 109, 161  
 self-reports, 55  
 self-worth, 119, 125, 127  
 senses, 147  
 sequencing, 23  
 service provider, 115  
 services, 43  
 severe stress, 190  
 sex, 171  
 shame, 59, 60, 76, 147, 148, 149  
 shape, 18, 72  
 shock, 60  
 shoot, 150  
 showing, 40, 41, 43, 49, 69, 70, 73, 99, 122, 123  
 signals, 102, 149  
 signs, 39, 50, 59  
 skilled performance, 86, 106, 109  
 skills training, xv  
 skin, 89  
 sleep disorders, 40  
 sleep disturbance, 118, 177  
 smoking, 74  
 smoking cessation, 74  
 soccer, xxi, xxiii, 6, 103, 105, 109, 121, 135, 137,  
     141, 150, 153, 159, 192  
 social acceptance, 121  
 social activities, 61, 78  
 social behavior, 51, 54, 79, 80  
 social capital, 146  
 social change, 30  
 social cognition, 106  
 social comparison, 120  
 social consequences, 108  
 social context, 19, 69  
 social desirability, 116  
 social development, 140  
 social exchange, 70  
 social interactions, 61, 64, 189  
 social learning, 148, 149  
 social network, 64  
 social organization, 121  
 social psychology, 58, 118, 139  
 social reality, 15  
 social relations, 47, 51, 159  
 social relationships, 51, 159  
 social resources, 148  
 social sciences, xix, 4, 6, 10, 58  
 social skills, 50, 170  
 social structure, 130  
 social support, 48, 49, 53, 55, 119, 131, 132, 135,  
     146, 147, 170, 173, 187, 191  
 social support network, 49  
 social withdrawal, 39  
 socialization, 128  
 society, 11, 16, 17, 18, 22, 30, 188  
 sociology, 3, 6  
 solution, xii, 11, 50  
 South America, xxi  
 South Korea, 8  
 Spain, xxiii, xxiv, 113, 129  
 specialization, 114, 139  
 species, 3, 4, 7, 10  
 speech, 102  
 spending, 64, 131  
 spirituality, 7  
 spontaneity, 58, 79  
 sport psychologists, 101, 104, 114, 127  
 stability, 52, 87, 109  
 stasis, 87  
 steel, 90  
 stigmatized, 189  
 stimulation, 49, 92  
 stimulus, 23, 30, 168, 169  
 stock, xii, xiii  
 stomach, 108  
 stress factors, 168  
 stress interventions, 19, 24, 25, 32, 33  
 stress reactions, 86, 165  
 stress response, 86, 88, 89, 90, 91, 108, 129, 144,  
     161, 170  
 stressful events, 165, 166, 167, 168, 172, 173, 175,  
     179, 180, 181, 182, 186, 187, 188  
 stressors, xxiv, 24, 39, 46, 60, 66, 82, 88, 89, 91,  
     100, 102, 118, 119, 130, 131, 132, 144, 145, 146,  
     147, 154, 155, 156, 168, 169, 171, 176, 178, 185,  
     190, 194  
 stretching, 119, 131  
 structure, 19, 24, 40, 82, 85, 114, 146, 187  
 structuring, 113, 134



student motivation, 134  
 style, xii, 17, 39, 69, 81, 137, 187, 194  
 subgroups, 58  
 subjective experience, 43, 58, 139, 147  
 subjective well-being, 63, 64, 157  
 supervisor(s), 25, 39, 47, 51, 54, 63, 65, 72, 73, 74  
 support staff, 147  
 survival, 3, 7, 86, 87, 88, 148, 150, 151  
 survivors, 147, 159, 160  
 susceptibility, 120, 123, 124, 138  
 sustainability, 10, 60  
 sweat, 11  
 Sweden, xxiii, 113, 118, 129, 138  
 symptoms, 9, 49, 50, 67, 103, 132, 137, 174, 176, 178, 191  
 syndrome, 38, 39, 46, 114, 115, 118, 119, 120, 124, 128, 129, 130, 134, 135, 139  
 synthesis, 20, 33, 79, 85, 159, 192

## T

Taiwan, 129  
 talent, x  
 target, 27, 100, 130, 131, 132, 153  
 task demands, 99, 119  
 task performance, 95  
 teachers, xiii, xvi, 6, 65, 186, 191, 193  
 team members, 74, 146  
 team sports, xxiv  
 teams, x, xii, xvi, 53, 69, 72, 73, 77, 107, 146, 150, 161  
 techniques, xii, 30, 50, 97, 100, 101, 106, 153, 154, 156  
 technology(s), 4, 16  
 teeth, 149  
 tension, 40, 177  
 tenure, 194  
 test anxiety, 66, 80  
 testing, 86, 100  
 theoretical approaches, 97  
 therapy, 50, 108  
 Third World, 8  
 Thomas Kuhn, 7  
 thoughts, 50, 59, 72, 103, 105, 116, 146, 150, 153, 156  
 threats, 89, 144, 178  
 time pressure, 169  
 traditional views, 15  
 trainees, 90  
 training, ix, x, xi, xii, xv, xvi, xxiii, 7, 25, 28, 31, 50, 69, 71, 72, 73, 90, 97, 100, 101, 104, 113, 114, 115, 116, 117, 118, 119, 130, 131, 141, 144, 146, 188

training programs, 69  
 trait anxiety, 110  
 traits, xii, 9, 45, 58, 72, 76, 188  
 transactions, 62, 109, 194  
 transformation, 28, 45  
 trauma, 159  
 treatment, 17, 20, 69, 118, 124, 130, 131, 136, 139  
 triggers, 24, 179  
 turbulence, 15, 16, 17  
 turnover, 50, 51, 63, 67, 70, 77, 82, 177, 181  
 twist, xii

## U

unemployed individuals, 65  
 unhappiness, xii  
 uniform, 43  
 United Kingdom (UK), xix, xxi, xxii, 8, 15, 16, 17, 32, 33, 54, 56, 74, 85, 107, 111, 129, 134, 138, 190, 193  
 United States (US), xviii, xxii, xxiii, 6, 128, 129  
 universe, 4  
 unwanted thoughts, 102  
 updating, 107  
 uric acid, 178  
 urine, 90

## V

valence, 148  
 validation, 34, 54, 71, 82, 125, 137, 138, 139, 140, 141  
 variables, 10, 39, 45, 60, 63, 67, 70, 90, 92, 93, 96, 118, 120, 125, 130, 166, 167, 171, 182, 186, 187, 189  
 variations, 82  
 variety of domains, 48  
 vasculature, 92  
 victimization, 17  
 violence, 4, 16, 78  
 vision, 10, 11, 19, 62, 77, 166, 180  
 volleyball, xvi, 140  
 vulnerability, 109, 113, 119, 120, 125, 126, 127, 128, 171

## W

walking, xxiii  
 war, 6  
 Washington, 33, 34, 54, 136, 191, 192  
 water, 118  
 weakness, 20, 87

- wealth, 49, 93  
weapons, 11  
wear, 87  
weight loss, 74  
welfare, 156  
well-being outcomes, 75  
wellness, xii, 21, 29, 35, 74, 77, 79, 81, 190  
Wilhelm Wundt, 4  
withdrawal, 81, 145  
work activities, 16  
work environment, xxi, 25, 30, 38, 43, 48, 50, 52, 61, 71  
work roles, 22  
workers, 11, 16, 18, 39, 40, 43, 44, 46, 47, 51, 63, 66, 73, 74, 169  
workflow, 47  
working conditions, 68  
working population, 191, 192  
workload, 46, 47, 133  
workplace, xx, 16, 17, 25, 29, 31, 32, 35, 37, 38, 41, 45, 47, 49, 50, 51, 52, 57, 58, 59, 60, 61, 62, 63, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 81, 82, 139, 169, 189, 191, 192  
work-related stress, 16, 17, 33, 194  
World War I, 5  
worldwide, 128  
writing tasks, 66

**Y**

- Yale University, xiii  
yield, 44  
young people, xxiii, 4, 8, 11  
young women, 160