# WORKING IN HIGH RISK ENVIRONMENTS

# WORKING IN HIGH RISK ENVIRONMENTS

# **Developing Sustained Resilience**

Edited by

### DOUGLAS PATON, Ph.D.

School of Psychology, University of Tasmania Launceston, Tasmania, Australia

and

## JOHN M. VIOLANTI, Ph.D.

School of Public Health and Health Professions
Department of Social & Preventive Medicine
State University of New York at Buffalo, NY



CHARLES C THOMAS • PUBLISHER, LTD. Springfield • Illinois • U.S.A.

#### Published and Distributed Throughout the World by

#### CHARLES C THOMAS • PUBLISHER, LTD. 2600 South First Street Springfield, Illinois 62704

This book is protected by copyright. No part of it may be reproduced in any manner without written permission from the publisher. All rights reserved.

#### © 2011 by CHARLES C THOMAS • PUBLISHER, LTD.

ISBN 978-0-398-08692-3 (hard) ISBN 978-0-398-08693-0 (paper) ISBN 978-0-398-08694-7 (ebook)

Library of Congress Catalog Card Number: 2011025783

With THOMAS BOOKS careful attention is given to all details of manufacturing and design. It is the Publisher's desire to present books that are satisfactory as to their physical qualities and artistic possibilities and appropriate for their particular use. THOMAS BOOKS will be true to those laws of quality that assure a good name and good will.

Printed in the United States of America MM-R-3

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

Working in high risk environments : developing sustained resilience / edited by Douglas Paton and John M. Violanti.

p. cm.

Includes bibliographical references and index.

ISBN 978-0-398-08692-3 (hard) -- ISBN 978-0-398-08693-0 (pbk.) -- ISBN 978-0-398-08694-7 (ebook)

1. Job stress. 2. Hazardous occupations--Psychological aspects. 3. Emergency management--Psychological aspects. 4. Resilience (Personality trait). 5. Stress management. I. Paton, Douglas. II. Violanti, John M. III. Title.

HF5548.85.W678 2011 363.1101'9--dc23

2011025783

#### CONTRIBUTORS

Jeff Ayton commenced with the Australian Antarctic Division as Chief Medical Officer in 2002 with responsibility for the Australian Antarctic program medical support and leadership of human biology and medicine research. He is Australian Delegate to the Scientific Committee of Antarctic Research Life Sciences Standing Scientific Group and deputy chief officer of the SCAR LSSSG Expert Group of Human Biology and Medicine. In 1992, Jeff wintered and conducted research at Casey Station, Antarctica, as a remote area general practitioner. His research interests include Antarctic medicine and the human physiological and psychology responses to Antarctic sojourns and their translation to other remote and extreme environments. Jeff is the current President of the Australian College of Rural and Remote Medicine.

Paul T. Bartone is a Senior Research Fellow at the Center for Technology and National Security Policy, National Defense University. Prior to retiring from the U.S. Army, Colonel Bartone was the senior Army research psychologist and Consultant to the Surgeon General and the Assistant Corps Chief for Medical Allied Sciences. Bartone is a Fellow of the American Psychological Association (APA), past President of APA's Division 19, the Society for Military Psychology, and a charter member of the Association for Psychological Science. He has written extensively on various topics related to leadership, stress, health, and adaptation.

**Dr. Charles Barry** is a Senior Research Fellow with the Center for Technology and National Security Policy (CTNSP). He holds undergraduate and graduate degrees in international relations and earned his Doctor of Public Administration at the University of Baltimore, concentrating in the field of Information Resource Management. He is a member of the Pi Alpha Alpha National Honor Society in Public Administration, the Association of the U.S. Army, the Army Aviation Association of America, and the Military Officers Association. He has been a Woodrow Wilson Foundation Fellow since 2004. Dr. Barry is a retired career soldier with combat leadership service in in-

fantry and aviation. In 12 years overseas, he experienced numerous deployments in Asia and Europe as well as the Caribbean, Central America, and Africa. He also served nearly 10 years as a joint strategic planner in Europe and Washington.

Cherie Castellano is the director of several nationally renowned peer support programs at University Behavioral HealthCare—University of Medicine & Dentistry of New Jersey. Cop 2 Cop, Vet 2 Vet, and Mom 2 Mom are peerbased helpline programs utilizing "reciprocal peer support" developed by Ms. Castellano for a model of success. Cherie is married to a law enforcement professional and has two sons whom she considers her greatest achievements.

**Emma E. Doyle** is a postdoctoral fellow funded by N.Z's Foundation for Research, Science, and Technology and based at the Joint Centre for Disaster Research at Massey University, Wellington, New Zealand, working on the project "Effective Integration of Science into Emergency Decision-Making Processes." Emma's interests lie at the interface between physical science and emergency management, with a primary focus on the critical decisions made during a natural hazard event, including evacuations and hazard zone limitations. Her current research involves an assessment of the scientific needs of decision makers during a natural hazard event and investigations into how these critical decisions are influenced by the presentation of the scientific information, forecasts, and model outputs. This has involved the development of an Emergency Communications Research Laboratory and the analysis of two NZ national disaster exercises, Capital Quake (earthquake) and Exercise Ruaumoko (volcano). Previous research includes a postdoctoral position at Massey University, Palmerston North, working with the Volcanic Risk Solutions group on the Marsden-funded project "Capturing the Secrets of a Life-Size Lahar"; a PhD in volcanology at Bristol University, UK, in 2008, specialising in modelling hazardous volcanic flows; and a Master's by Research investigating volcanic eruption precursors at Leeds University, UK, in 2003.

**Dr. James J. Drylie** is the Executive Director of the School of Criminal Justice & Public Administration at Kean University of New Jersey. He has conducted exhaustive research on the subject of suicide-by-cop formulating the theory of victim-scripted suicide as an objective measure in examining these types of police-involved shootings and is regualrly consulted on matters of this nature. Retired at the rank of captain, after 25 years of service with a large suburban New Jersey police department, he routinely lectures on the subject of suicide-by-cop and related issues to a variety of academic and practitioner audiences.

Contributors vii

During the course of his law enforcement career, Dr. Drylie was recognized as an expert in various aspects related to the use of force, specifically deadly force, and was responsible for training countless recruits and police officers throughout the New York/New Jersey Region. Dr. Drylie has recently begun working with clinicians who study the impact of large-scale disaster on first responders and is researching the links between the psychological truama from terrorist incidents, natural and man-made disaster, and human-caused incidents such as police shootings. He presented his work, *Cultural Boundaries and Suicide Terrorism*, at the 2010 International Symposium on Terrorism and Transnational Crime in Antalya, Turkey. Dr. Drylie received his PhD in Criminal Justice from the City University of New York, John Jay College of Criminal Justice. He has published his disseration work in *Suicide by Cop: Scripted Behavior Resulting in Police Deadly Force* (2007) as well as coauthoring a textbook, *Cop-I-Cide: Concepts, Cases and Controversies of Suicide by Cop* (2008) with the noted expert on police suicide, Dr. John Violanti.

**George S. Everly, Jr.** is Executive Director of Resiliency Science Institutes at University of Maryland, Baltimore County (UMBC) Training Centers; Professor of Psychology, Loyola University Maryland; Associate Professor of Psychiatry at the Johns Hopkins University School of Medicine; and a faculty member at the Johns Hopkins Public Health Preparedness Programs and The Johns Hopkins Bloomberg School of Public Health.

Suzann B. Goldstein is a medical sociologist and a freelance writer, poet, and author. In 2010, Suzann was elected to the Board of Trustees of the Foundation of the University of Medicine and Dentistry of New Jersey. In 2009, the Breast Cancer Center at the Cancer Institute of New Jersey, in collaboration with Suzann and her husband, Ed Goldstein, was renamed the Stacy Goldstein Breast Cancer Center in memory of their daughter, Stacy. In 1991, Suzann was awarded the New Jersey State Department of Health's Albert Harrison Award for Extraordinary Commitment to Services for Children with Special Health Needs. In 1976, in memory of their daughter Valerie, Suzann and Ed cofounded the Valerie Fund, an organization that now supports seven comprehensive health care centers for children with cancer and blood disorders in New Jersey and New York City.

**Tegan Johnson** is a clinical psychology PhD candidate studying at the University of Tasmania, Australia. Her research project focuses on the development of clinical psychologists, and she has interests in professional development, stress, challenge and trauma, positive psychology, and psychological growth.

**Associate Professor David Johnston** is the Director of the Joint Centre for Disaster Research in the School of Psychology at Massey University, New Zealand. The Centre is a joint venture between Massey University and GNS Science. His research has developed as part of a multidisciplinary theoretical and applied research program, involving the collaboration of physical and social scientists from several organizations and countries. This is one of the few truly multidisciplinary research clusters in hazard management internationally and is unique in New Zealand. He has been involved in developing integrated risk management strategies for different hazard events using techniques such as scenario development, mitigation planning, and community education programmes. The research has received numerous awards, both in New Zealand and internationally. David is a member of the Scientific Committee for the Joint International Council for Science (ICSU) and the International Social Science Council (ISSC) Integrated Research on Disaster Risk (IRDR); Royal Society Social Science Advisory Panel, on the Editorial Board of the Australasian Journal of Disaster and Trauma Studies; and Deputy Editor of International Journal.

**Anne Links** is a student at Towson University in Towson, Maryland.

**John McClure** is Professor in Psychology at Victoria University of Wellington. He completed his PhD at the University of Oxford, and his book, *Explanations Accounts and Illusions*, has just been published in paperback form by Cambridge University Press. He has published more than 60 peerreviewed research papers, many of which focus on psychological factors that affect preparation for hazards, especially earthquakes. He led research funded by the New Zealand Earthquake Commission on factors affecting different types of preparedness in businesses and households and is researching judgments about low-frequency hazards such as earthquakes. He is currently doing research on the effects of the recent earthquake in Canterbury, New Zealand, on risk perception and preparedness.

**Kimberley Norris** is a practicing clinical psychologist specializing in adult mental health. She is an Associate Lecturer at the University of Tasmania. Her research interests focus on human adaptation and resilience with a particular focus on human performance in extreme environments. Her dissertation examined psychological adaptation of Antarctic expeditioners and their partners to Antarctic employment.

**Douglas Paton** is a Professor in the School of Psychology, University of Tasmania, Launceston, Australia. His research focuses on developing and test-

Contributors ix

ing models of resilience in high risk professions (e.g., emergency and protective services).

John M. Violanti is an Associate Research Professor in the Department of Social and Preventive Medicine (SPM), School of Public Health and Health Professions at the State University of New York at Buffalo, NY, and has been associated with SPM for 22 years. Dr. Violanti is also a member of the SUNY medical school graduate faculty. He is a police veteran, serving with the New York State Police for 23 years as a trooper, criminal investigator, and later as a coordinator for the Psychological Assistance Program (EAP) for the State Police. He has been involved in the design, implementation, and analysis of numerous police stress, trauma, suicide, and health studies over the past 20 years. His most recent study completion involved a 5-year study on psychological stress and cardiovascular disease outcomes in police officers. Dr. Violanti has authored more than 50 peer-reviewed articles on police stress and PTSD, police mortality, and suicide. He has also written and edited 15 books on topics of police stress, psychological trauma, and suicide. He has been an invited lecturer on topics of police stress and suicide to the FBI Academy at Quantico, Virginia, several times. He has lectured nationally and internationally at academic institutions and police agencies on matters of suicide, stress, and trauma at work.

Mary Beth Walsh is the mother of a young adolescent significantly affected by autism and a typically developing older teen. Although trained as a theologian, her advocacy work for individuals with autism reaches from faith communities to science-based interventions. She currently serves as Co-Chair of the Autism Task Force of the National Catholic Partnership on Disabilities and also serves as the Consumer Representative on the Board of the New Jersey Association for Behavior Analysis (NJABA). She teaches graduate courses in pastoral ministry at Caldwell College and is coeditor of the resource, Journey into Community: Including Individuals with Autism in Faith Communities.

#### **PREFACE**

The impact of events such as the 9/11 terrorist attacks and Hurricane Katrina were felt across the spectrum of organizations. Such events provide vivid illustrations of the exceptional circumstances that emergency and protective service agencies and businesses alike can encounter. These events stretched capabilities to the breaking point and sometimes beyond. Agencies and businesses encountered and had to cope with and adapt problems on a scale that far exceeded anything that their "routine" experience would have prepared them for.

If they are to respond effectively, agencies and businesses need to develop their capacity to adapt to unpredictable and challenging circumstances. To do so, agencies, institutions, and businesses and their officers and employees must be resilient. The subject of this book is how this outcome can be facilitated.

It is also a goal of this book to broaden the perspectives on the populations that need to be included when thinking about high risk groups and from whom insights into resilience and how it is enacted can be sought. Caregivers and groups existing or working in isolated conditions are considered.

The past few years have witnessed considerable growth in research into adaptation and growth outcomes in high risk professions. However, if organizations are to benefit from this knowledge and a strong foundation for future research put down, a resource that systematically integrates this work and highlights its significant implications and how they can be used in organizations is required. The proposed book will do this.

-Douglas Paton and John M. Violanti

# **CONTENTS**

Pag	_
Preface	(1
CHAPTER 1. HIGH RISK ENVIRONMENTS, SUSTAINED	
RESILIENCE, AND STRESS RISK MANAGEMENT  Douglas Paton and John M. Violanti	3
Introduction	3
Risk and Resilience	
Consequences of Experiencing Critical Incidents	
High Risk Groups and Professions	
Chapter Content	
References	
References	Ü
CHAPTER 2. FAMILY FIRST RESPONDERS: RESILIENT	
MOTHERS OF SPECIAL NEEDS CHILDREN	3
Cherie Castellano, Suzann B. Goldstein, and Marybeth Walsh	
Introduction	3
Cherie's Story: "I'm Here"	
Sue's Story: "Bounce"	
Marybeth's Story: "Why Not Me?"	
References	
References	0
CHAPTER 3. STAYING COOL UNDER PRESSURE:	
RESILIENCE IN ANTARCTIC EXPEDITIONERS	5
Kimberley Norris, Douglas Paton, and Jeff Ayton	
Introduction	5
Understanding Resilience	
Modelling Resilience within Antarctic Populations	
Individual Resources 4	

Relationship Dynamics	
Organizational climate	42
Social support	43
Information sharing/communication	43
Trust	44
Empowerment	45
Conclusion	46
References	47
CHAPTER 4. BUSINESS RESILIENCE IN THE FACE	
OF CRISIS AND DISASTER	51
Douglas Paton and John McClure	
Introduction	
Building Resilience into Business Activity	
Preventing Loss versus Facilitating Survival	
Building Resilience: The Role of Continuity Planning	
Developing Continuity Plans and Strategies	57
Implementation	
Building Capability in Organizations	
Learning and Change in Contemporary Organizations	
Developing Effective Capability in Staff	60
Selection and Training	61
Organizational Implications	63
References	64
CHAPTER 5. SCIENCE ADVICE FOR CRITICAL	
DECISION MAKING	69
Emma E. Doyle and David M. Johnston	
Introduction	
Natural Hazards and Emergency Management	70
Decision Making and Uncertainty	71
Information Provision and Coping with Uncertainty	
Team Decision Making: Shared Mental Models	77
Improving NZ Response Capability from 1995 to 2007	
Advice Taking and Communicating Uncertainty	83
Concluding Remarks: Building Resilience through Training	86
Deferences	00

Contents	XV
----------	----

CHAPTER 6. COP SHOT	93
Introduction	93
Seeds of Resiliency	93
Nothing Is Routine	96
One Man's Resiliency	
CHAPTER 7. RESILIENCY IN HIGH RISK GROUPS: A	
QUALITATIVE ANALYSIS OF LAW ENFORCEMENT	
AND ELITE MILITARY PERSONNEL 1	15
George S. Everly, Jr. and Anne Links	
Defining Resilience: The Johns Hopkins Perspective	15
Structural Modeling	
Method	
Results	
Discussion	
References	
10201012000	
CHAPTER 8. LEADING FOR RESILIENCE IN	
HIGH RISK OCCUPATIONS	25
Paul T. Bartone and Charles L. Barry	
Introduction	25
Psychological Stress Factors in Modern Military Operations 1	27
Mental Hardiness	
Leader Influence on Mental Hardiness	
Summary and Recommendations	
Recommendations for Leaders	38
Recommendations for Organizations	
Conclusion	
References	
Telefeness	11
CHAPTER 9. AN ECOLOGICAL THEORY OF	
RESILIENCE AND ADAPTIVE CAPACITY IN	
EMERGENCY SERVICES	45
Douglas Paton, John M. Violanti, Kim Norris, and Tegan Johnson	
Introduction	45
Resilience and Adaptive Capacity	
Satisfaction and Resilience	
An Ecological Approach	
	-

77	- ^
Family	
Organizational Influences	
Organizational Culture	
Empowerment	
Enabling Action	
Task Assessment	
Global Assessments	
Interpretive Styles	
Predicting Empowerment	
Personal Characteristics	
Peer Relationships and Team Cohesion	
Resource Availability and Utility	
Trust	
Senior Officer Support	63
The Work–Family Interface	63
Conclusion	65
References	66
CHAPTER 10. PROTECTING THE PROTECTORS:	
THE RESILIENCY INTEGRATION MODEL	71
John M. Violanti	
Introduction	
Operational Suggestions for the Resiliency Integration Model 1	75
Traumatic Incidents at Work	75
Organizational Climate	75
Leadership	75
Police Daily Hassles and Uplifts Scale	75
Demand-Control Balance	75
Individual Resiliency	76
Outcome Measures	77
Stress	77
Posttraumatic Stress Disorder (PTSD) Symptoms	78
Future Work	
Conclusions	
References	81
Index 18	<b>Q</b> 5

# WORKING IN HIGH RISK ENVIRONMENTS

### Chapter 1

# HIGH RISK ENVIRONMENTS, SUSTAINED RESILIENCE, AND STRESS RISK MANAGEMENT

Douglas Paton and John M. Violanti

How overcome this dire calamity,
What reinforcement we may gain from hope,
If not, what resolution from despair?
John Milton, Paradise Lost,
Book I, lines 189–191

#### INTRODUCTION

For many emergency and helping professionals, dire calamity is a fact of working life. Milton's quote challenges us to consider the fact that people have within their grasp the potential to influence the consequences of their exposure to dire calamity. The potential to draw on hope in changing the consequences of experiencing calamity fore-shadowed the more recent recognition of how strengths such as hope and optimism can promote well-being and adversarial growth in the face of adversity (Joseph & Linley, 2005; Seligman & Csikszentmi-halyi, 2000). Milton's quote also points to the role that resolution plays as a precursor to learning from the experience of dire calamity.

The Oxford English Dictionary variously defines resolution as "separating into components," "converting into other forms," and "formulating intentions for virtuous intent." The sentiments embodied in these definitions are echoed in the positive psychology and resilience

literatures with regard to securing salutogenic outcomes when faced with adversity. From the perspective of this book, the challenge posed by Milton's quote is to identify the beliefs (such as hope) and competencies (such as resolution) that can be pressed into service to turn the experience of calamity and despair into salutogenic outcomes in the form of resilience, adaptive capacity, and adversarial growth. The differences between the terms *resilience*, *adaptive capacity*, and *adversarial growth*, and the importance of distinguishing between them, is discussed in Chapter 9. But how are they related to risk?

#### RISK AND RESILIENCE

The search stimulated by taking up the challenge embodied in turning the essence of Milton's words into practical reality focuses on exploring two basic issues. The first concerns identifying what is meant by the risk posed by the dire calamites of everyday working and professional life. The second is about identifying how beliefs and competencies (e.g., hope and resolution) can ameliorate despair and facilitate a capacity to adapt in those for whom experience of dire calamity (e.g., critical incidents) is a fact of everyday life. In the contemporary traumatic stress and positive psychology literatures, characteristics such as hope and resolution are described by terms such as *strengths* or *resilience*. The title of this book alludes to their being a relationship between resilience and risk. The reason that a relationship between them can be discerned derives from how risk is defined.

Risk is the product of the likelihood of experiencing a challenging event and the consequences the event has for those who experience it (Hood & Jones, 1996). This relationship is illustrated in Figure 1.1. The events that are the subject of the contents of this book are those capable of causing physical, social or psychological harm to those caught up in them (e.g., hazardous events like natural disasters, acts of terrorism and mass transportation accidents).

According to Figure 1.1, risk is first influenced by the likelihood or probability of the occurrence of dire calamity. In the main, the populations (e.g., helpers, helping professions, emergency, and protective services professions) whose experiences are the focus of this text cannot control the occurrence of potentially hazardous events. Emergency and helping professions cannot readily influence the frequency,



Figure 1.1. The relationship between risk and resilience.

timing, nature, duration, or location of the events they are called on to respond to. However, emergency and helping professions agencies can make choices about the consequences their members experience as a result of experiencing a hazardous or critical incident (Paton, Violanti, Burke, & Gherke, 2009).

To facilitate this process, this book first aims to build understanding of how the "consequences" component of the risk equation emerges from interaction between environmental demands and the personal, social, and organizational resources brought to bear to deal with these demands (Figure 1.1). Next, it seeks to articulate how these resources can be applied (e.g., through selection, training, support, and organizational change) to ensure that the experience of calamity and despair is characterized by salutary outcomes and the development of the future capacity of people and agencies.

#### Consequences of Experiencing Critical Incidents

The consequences of critical incident exposure result from the potential of the characteristics of hazardous events to cause harm to populations. However, experiencing harm is not inevitable. The implications of exposure to hazardous circumstances can be moderated by the presence of factors that increase susceptibility to experiencing loss from exposure to a hazard (i.e., that increase vulnerability) and those