

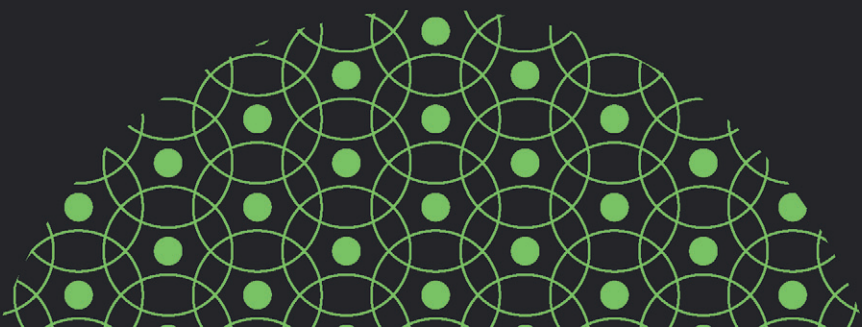


EMERALD POINTS

**CONCEPTUALISING  
RISK ASSESSMENT  
AND MANAGEMENT  
ACROSS THE  
PUBLIC SECTOR**

From Theory to Practice

**DR JENNIFER MURRAY  
DR INIOBONG ENANG**



CONCEPTUALISING RISK  
ASSESSMENT AND  
MANAGEMENT ACROSS THE  
PUBLIC SECTOR

This page intentionally left blank

# CONCEPTUALISING RISK ASSESSMENT AND MANAGEMENT ACROSS THE PUBLIC SECTOR

From Theory to Practice

BY

**DR JENNIFER MURRAY**  
*Edinburgh Napier University, UK*

And

**DR INIOBONG ENANG**  
*Coventry University, UK*



United Kingdom – North America – Japan – India  
Malaysia – China

Emerald Publishing Limited  
Howard House, Wagon Lane, Bingley BD16 1WA, UK

First edition 2022

Copyright © 2022 Jennifer Murray and Iniobong Enang. Published under exclusive licence by Emerald Publishing Limited.

**Reprints and permissions service**

Contact: [permissions@emeraldinsight.com](mailto:permissions@emeraldinsight.com)

No part of this book may be reproduced, stored in a retrieval system, transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise without either the prior written permission of the publisher or a licence permitting restricted copying issued in the UK by The Copyright Licensing Agency and in the USA by The Copyright Clearance Center. Any opinions expressed in the chapters are those of the authors. Whilst Emerald makes every effort to ensure the quality and accuracy of its content, Emerald makes no representation implied or otherwise, as to the chapters' suitability and application and disclaims any warranties, express or implied, to their use.

**British Library Cataloguing in Publication Data**

A catalogue record for this book is available from the British Library

ISBN: 978-1-80043-693-0 (Print)

ISBN: 978-1-80043-692-3 (Online)

ISBN: 978-1-80043-694-7 (Epub)



**ISOQAR**  
REGISTERED

Certificate Number 1985  
ISO 14001

ISOQAR certified  
Management System,  
awarded to Emerald  
for adherence to  
Environmental  
standard  
ISO 14001:2004.



INVESTOR IN PEOPLE

# CONTENTS

<i>List of Figures and Tables</i>	vii
<i>List of Abbreviations</i>	ix
<i>About the Authors</i>	xi
<i>Preface</i>	xiii
<i>Acknowledgements</i>	xvii
<i>Abstract</i>	xix
1. What Is Risk?	1
2. Risk Assessment: The Three Eras of Risk Assessment	17
3. Risk Management	29
4. Risk Communication	53
5. Impacting on Decision Making and Outcomes	69
6. Interprofessional Risk Practice and Co-creation of Value in the Public Sector	77
7. Concluding Remarks	91
<i>Appendix 1: Quiz Answers</i>	95
<i>References</i>	97
<i>Index</i>	111

This page intentionally left blank

# LIST OF FIGURES AND TABLES

Figure 1.	Attitudes to Risk.	14
Figure 2.	Timeline for CAM/MHP Project, 2017–2021.	85
Table 1.	Example of a Qualitative Risk Matrix Commonly Used to Aid Risk Analysis and Communication with These Types of Techniques.	21
Table 2.	Comparing the ISO 31000: 2018, COSO 2017 and IRM 2002.	32
Table 3.	Risk Management Definitions.	39
Table 4.	Diagrammatic Representation of the Study Stages of Murray's (2010) Risk Communication Study.	63
Table 5.	Alignment of Interprofessional Working with the IRM 2002 Risk Management Processes.	78

This page intentionally left blank

# LIST OF ABBREVIATIONS

AIRMIC	Association of Insurance Risk Managers in Industry and Commerce
ALARM	Association of Local Authority Risk managers
BS EN	British Standard European Norm
CAM	Contact Assessment Model
CDC	Centers for Disease Control
CIIA	Chartered Institute of Internal Auditors
COSO	Committee of Sponsoring Organisations of the Treadway Commission
COVID-19	Coronavirus Disease-19 [identified in 2019]
CRM	Corporate Risk Management
ERM	Enterprise Risk Management
FERMA	Federation of European Risk Management Association
FMEA	Failure Model Effect Analysis
H1N1	Hemagglutinin Type 1 and Neuraminidase Type 1 [influenza strain]
HM	Her Majesty's
IEC	International Electrochemical Commission
IRM	Institute for Risk Management
ISO	International Organization for Standardization
MHP	Mental Health Pathway
MWI	Municipal Mutual Insurance
NAO	National Audit Office (UK Government)
NICE	National Institute for Health and Care Excellence
NHS	National Health Service
NHS24	National Health Service-24 [24-hour call centre support service]
NORSOK	Norsk Søkkel Konkuranseposisjon
PACED	Proportionate, Aligned, Comprehensive, Embedded, Dynamic
PDCA	Plan, Do, Check, Act
PESTLE	Political, Economic, Sociological, Technological, Legal and Environmental
SARS-CoV	Severe Acute Respiratory Syndrome Coronavirus

SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus-2
SDS	Self-directed Support
SSSC	Scottish Social Services Council
SWOT	Strengths, Weaknesses, Opportunities and Threats
TBS	Treasury Board of Canada Secretariat
UK	United Kingdom
US	United States [of America]
WEF	World Economic Forum

## ABOUT THE AUTHORS

**Dr Jennifer Murray** is an Associate Professor in Decision Science, and an Associate Fellow and Chartered Member of the British Psychological Society. Her core research investigates the human judgement and decision making processes associated with risk and risk assessment-related decision making, with the core focus of this being on forensic, health and legal decision making. She is passionate about developing useful, theoretically sound interventions and outputs from her research which support practitioner decision making and effective risk assessment practice. Dr Murray collaborates across multi-disciplinary teams, working closely with and involving relevant stakeholders to make her research as applicable to real practice as possible.

**Dr Iniobong Enang** is a Senior Lecturer (Assistant Professor) in Risk Management. She is the Course Director for MSc Risk Management at Coventry University where she also teaches Project Management and Decision Making for International Business. Dr Enang is interested in risk governance issues in the private and public sector. She is particularly passionate about social risk and matters pertaining to social (in)justice issues. She is currently promoting understanding about the positive and negative components of social risks, including potential impacts on micro-, meso- and macroenvironments via public speaking engagements. Her goal is to develop and conduct much needed social risk assessments in collaboration with public and private sectors. This will facilitate strategic decision making and deliver positive outcomes, thereby co-creating value for the common good.

This page intentionally left blank

# PREFACE

## WHY IS THIS BOOK NEEDED? WHO CARES, REALLY?

With such great depth and specificity within the academic risk assessment and management literature, newcomers or those tasked with more generalist approaches to assessing risk may be led to exclaim: *Well, this isn't relevant to my field!* In doing so, they inadvertently shield themselves from a wealth of excellent breakthroughs, approaches and lessons from related areas to their own. This book therefore aims to embrace the lessons from specific fields of risk assessment and management and present these in a 'generalist' fashion, to aid cross-sector learning. It supports experienced and inexperienced risk professionals to achieve a breadth of knowledge based on existing and transferrable approaches across the public sector risk field.

This preface sets the scene for the rest of the book, detailing why there is a need for a book which focuses on risk, risk assessment and management across the broad spectrum of the public sector. This book will discuss some of the current theoretical issues, such as lack of definitions, the challenges and benefits of interprofessional practice, siloed working and even a lack of knowledge in some of the public sector-related research disciplines. We propose that only through bringing forward some of the shared risk definitions and risk assessment and management practices that are relevant across the public sector can the field and practice develop and improve together. Implications of poor risk practice will be discussed in later chapters, and examples of the benefits of good risk practice will be emphasised throughout the book, with case study examples helping to bring the theoretical discussion into real practice focus.

Risk assessment and risk management are core tasks across the public sector to improve processes and outcomes. There is, however, little clarity over what these terms actually mean across public sector professions both conceptually and practically. There is also a growing need in the public sector for interprofessional, collaborative working practice. There is a concurrent expectation that risk assessment and risk management be carried out across the sector to the highest standard. However, with the current lack of cohesive

practice and processes in risk assessment and risk management across public sector professions, interprofessional, co-creative risk practice is impeded. In many cases, profession-specific risk practice is not problematic and may indeed be appropriate. In other cases, where there is a shared goal or focus across professions, such as working with a particular client group or on the same problem, this fragmentation may lead to poorer outcomes for the professions involved or for the people with whom they are working; this then becomes a barrier to best practice.

There are a number of reasons for fragmentation in practice, including poor operational definitions of risk across professional practice and within current academic publications, thereby impacting on the implementation of risk assessment and risk management in practice. This book will address these issues through providing a high-level, theory-informed discussion on the conceptualisations of risk, risk assessment and risk management across the public sector. Guidance on how to work interprofessionally to overcome these barriers will be presented using a combination of theoretically underpinned techniques and exemplars from practice.

This book is essential in drawing together the current theoretical underpinnings of risk, risk assessment and risk management relevant to the public sector. This book is written with a key ambition of appealing broadly across the public sector rather than being siloed within a specific professional grouping or theoretical paradigm. We made this decision very consciously, being interdisciplinary researchers, teaching on interdisciplinary courses and simply having had no such broad, general text which fits across the different public sector professions in this area to learn from ourselves. We really hope that risk professionals, both experienced and inexperienced, will find this book useful in developing and broadening their understandings of risk assessment and management both for use in their own practice and in understanding it more broadly when working across disciplines.

There has also been a proliferation of risk assessment and risk management discourse in the academic literature, which is unfortunately often presented with weak or no definitions. This then becomes translated or adapted – again, with weak or no understandings of the implications of the theoretical groundings – to interprofessional practice. Despite ubiquitous agreement that risk assessment and risk management are essential core aspects of public sector working, there continues to be poor understanding of the underpinning conceptualisations of risk across different public sector professions. This leads to wide variation in the process and utility of risk assessment and management and to miscommunications of risk across professions. This is further perpetuated through the lack of consensus, or even lack of operational definitions, of

risk assessment and management across associated academic fields, creating further lack of clarity. These, in consort, lead to barriers in interprofessional practice and co-creation of value across the public sector. To facilitate interprofessional working, public sector risk assessment and management practice must develop. There must be clearer understanding of what risk assessment and management is, how and under which circumstances these might be unified across the sector and how deviations across professions are needed. We will explore these issues from a theoretical perspective and will bring together the conceptualisations of risk assessment and management relevant to public sector working, discussing applied examples of how interprofessional risk assessment and management practice can be facilitated and achieved. The theory and applied foci will help to break those academic- and practice-led barriers which currently restrict co-creation across the fields and the sector.

The current book therefore very consciously brings theory back into focus in the risk assessment and management discourse and practice in the public sector field, which we believe is sorely needed. The topics covered in this book include: theoretical underpinnings and operational definitions of what risk is within public sector practice; underpinning approaches to risk assessment and risk management; how these impact decision making; risk communication; and interprofessional working and collaborative risk practice.

The three key learnings that we hope that the reader gains from this book are as follows:

- (1) Rather than focusing wholly on practice and ‘how to’, there will be broader appreciation and understanding of the key concepts and theories underpinning risk assessment and management across the public sector.
- (2) Developing an understanding of those key approaches to risk assessment and management in a generalist way, to appreciate the complexities and shared approaches that are possible across public sector professions, rather than focusing on highly specialised ‘siloes’ approaches which are limited to a very small section of the public sector field.
- (3) Really focusing on the co-creative and interprofessional public sector risk assessment and management as something that is achievable and meaningful, rather than something that is a hassle or too challenging to attempt.

Overall, however, we ultimately hope that the person who has previously professed that generalist approaches to risk assessment and management *isn't relevant to me!* will see that *yes! It can be!* We hope that we can bring people with us in appreciating and becoming passionate about embracing generalist

risk assessment and management approaches and using these to work together, across professions, to improve outcomes for professions, for people and for society. We fully know that specialist risk assessment and management approaches are also essential in some situations, but we believe – and hope that you will also believe by the end of this book – that generalist approaches with shared definitions and transferrable processes are just as essential within public sector risk working.

# ACKNOWLEDGEMENTS

Writing this book has been a pleasure. At no point during the discussions about, planning or writing of the book have I felt anything but excitement and motivation, and a small portion of the book has occupied my mind during all of the in-between writing sessions times, keeping my interest! First, thank you to my amazing co-author and dear friend, Ini. Ini, you are brilliant, and I am so lucky to work with you. I also want to say thank you to those who I consider academic mentors, who have helped to shape me, my values, my ideas and my career. Specifically, thank you to Professor Mary Thomson (I am eternally grateful to all that Mary has done for me), Dr Mandy Winterton, Professor Brian Williams, Zoë Chouliara and the late Dr Alan Tuohy. All of you have supported, challenged, pushed, questioned and cheered me throughout my career. I draw inspiration from you.

I of course thank my mum and my dad. Without their encouragement and support I wouldn't have had the courage to embark on academic study, and then more academic study and then an academic career. I'm sure that they aren't always sure what on earth I'm talking about when it's work-related, but they are always encouraging and keen to hear more. Thank you. Thank you, too, to my sister Yvonne for constantly listening to my ideas and ramblings, and to my nephew Arjun whose curious, logical approach to things is so refreshing and has been a wee source of inspiration throughout the book writing process.

Finally, and most importantly, thank you to my husband. Robbie, you are my rock and my source of constant love, care and support in everything that I do. This book and everything that has led to it could never have happened without you at my side.

*Jen*

Working on this book has been an intense and exciting experience for me, stretching and developing me in various ways. I am grateful to Emerald Publishing House for the opportunity to share my views and that of other scholars on risk management in the public sector. Working on this book has also afforded me the opportunity to find answers to deeply sated questions on

risk and risk management, including but not limited to its epistemology, i.e. how risk is perceived, what knowledge is valid within this sphere and how this knowledge is applied in practice. I would therefore like to express my sincere gratitude to the following people whose invaluable assistance helped me during this journey.

I am truly grateful to Mr and Mrs Enang (my parents), and Dr Etieno Enang and Mr Imowo Enang (my siblings), whose faith in me constantly propel me to achieve greater heights.

I acknowledge one of my dearest friends, and co-author, Dr Jennifer Murray, who came up with the idea of this book, and who was instrumental to our completing the book before the stipulated timeline. Jenny and I debated about the content and developed a structure for the book on our way to and from work on most weekdays. It was so exciting, and oh, how I long for those days! Many thanks also to my dear friend, Dr Eno Maycock who constantly cheers me on and always has a 'wisdom tip' to share.

The leadership, constant feedback, insightful comments and support which I receive from Professors Darinka Asenova and Stephen Bailey have been instrumental in my development as an academic. For these reasons and more, I will always treasure the time spent with them and all that I learnt from them.

I am indebted to Professor Austyn Snowden, Professor Jill Stavert, Professor Nadine Dougall, Dr Inga Heyman, Dr Elizabeth Aston and Dr Andrew Wooff, who have always believed in me and encouraged me in various ways.

My special thanks go to Mr Colin and Dr Helen MacKay, Mr Evan and Mrs Alison Macdonald, and Mr Bill and Margaret Stroner who continuously provide a haven for me.

Most importantly, I owe everything to my Heavenly Father, who is the author and finisher of my faith and remains my reason to live.

*Ini*

We would also both like to thank our excellent case study authors and contributors, whose contributions to and comments on the book have added richness and value. Thank you, Alexander Larsen, Claire Coleman, Dennis Chapman and Hugh Coyle for your support and contributions to this work.

*Jen and Ini*

# ABSTRACT

*Risk assessment and risk management are essential across the public sector to improve processes and outcomes. However, there is little clarity over what this actually means. This lack of understanding leads to a wide variation in risk assessment and management practice and to miscommunications of risk across professions, creating further barriers to interprofessional practice and co-creation of value across the public sector. Despite these challenges, there is a concurrent expectation that risk assessment and risk management be carried out across the sector to the highest standard, developing high-quality interprofessional working in the field with more aligned public sector risk assessment and management practice.*

Conceptualising Risk Assessment and Management across the Public Sector explores concepts and applications of risk across the public sector to aid risk professionals in establishing a clearer understanding of what risk assessment and management is, how they might be unified across the sector and how and where deviations across professions are needed. This book addresses these issues through providing a theory-informed discussion on the conceptualisations of risk, risk assessment and risk management across the public sector, and through identifying where shared values and where differences exist across professions. Guidance on interprofessional risk practice and risk communication to overcome barriers is offered using a combination of theoretically underpinned approaches and exemplars from practice, presented to have broad applicability across the public sector rather than being siloed within a specific professional grouping or theoretical paradigm.

This page intentionally left blank

## WHAT IS RISK?

The pursuit of effective risk assessment and management practice and process is an enduring feature of public, private and academic sector working. There have been hundreds, if not thousands, of academic and practice-based texts written on the topic, and some readers will be very well versed and knowledgeable on ‘the basics’. However, with any text on risk assessment and risk management it is essential to first discuss and describe these ‘basics’ – i.e. the things that everybody seems to know but which are often poorly defined, but which are also fundamental to our knowledge and our shared understandings of risk assessment and management. For the reader who is less experienced in the field, this focus on the basics is possibly more important as it provides the foundational knowledge needed to understand and build up to more complex constructs later in the book. For the experienced risk professional, this chapter may serve to clarify and re-learn or re-focus back to these basics.

This chapter will therefore focus on ‘what is risk?’ Risk is a term which is so fundamental and integrated into risk assessment and management that is often taken for granted. Surely everyone knows what risk is? Well, yes, most people will have a strong idea of and a personally developed definition of risk. However, a key purpose of this book is to bring together academic and practice knowledge from fields across the breadth of the public sector to develop some shared understandings of key constructs and processes which can be applied across and within different fields and areas of practice. To achieve this, the current chapter will first explore definitions of risk across academia and practice foci and how these have developed over time. It will go on to discuss the underpinnings of risk as used in the public sector, particular facets of risk, and the intersection of risk taking and avoidance at the organisational and the individual levels.

## DEFINITIONS OF RISK

## Past and Current Definitions of Risk from Academia

There are a wealth of academic texts on risk, both general texts and others which specifically focus on the public sector. While this attention to the construct is excellent and is, on the whole, useful, it can also be very daunting and confusing to both novice and experienced risk professionals when trying to specifically define what they mean by risk, and what this means when assessing and managing risk. Within this section we will explore some of the general definitions and field-specific definitions of risk used within the academic fields tied to the public sector. Later in the chapter we will move into a deeper discussion around the epistemology of risk within our context of public sector risk assessment and management.

To get started, let's consider some very basic dictionary-definitions of risk. The Oxford Dictionary's (2020) primary definition of risk highlights risk as something with inherently negative undertones: 'A situation involving exposure to danger'. So too do the definitions within the Collins (2020) ('the possibility of incurring misfortune or loss; hazard'), Cambridge (2020) ('the possibility of something bad happening'), and Merriam-Webster (2020) ('someone or something that creates or suggests a hazard') dictionaries. These definitions all clearly outline the negative consequence of risk, with hazards, misfortune and danger being central facets of risk as a construct. This then implies that risk is something bad; something undesirable and to be avoided. However, when we consider everyday living and working, risk is an inevitability and not all risks taken lead to negative consequence. With the term 'risk' itself having this apparently negative connotation, then, what does this mean for its conceptualisation and operationalisation within public sector research and academic discussion?

Indeed, when reviewing the academic risk literature, it is clear that this is not a new observation. In an editorial published in 2011 – almost 10 years prior to the writing of this book – Professors Stephen Osborne and Louise Brown highlighted that, within the public service context, risk is considered as a negative which ought to be minimised or avoided entirely and made the argument that this conceptualisation is in direct detriment to innovation. These authors, and others (e.g. Borins, 2001; Singh, 1986), argued that risk is central to successful innovation and this focus on risk as a negative and the desire to avoid and minimise risk may, in some cases, be misplaced. Instead, Osborne and Brown argue, risk ought to be embraced and negotiated within the risk management and governance process rather than be automatically

minimised and avoided. These authors further argue that the existing risk and risk management literature within the public services is 'small, if unsatisfactory' (Osborne & Brown, 2011, p. 4), with a key issue arising from the adoption of definitions from other fields, such as economics, health and psychology. These fields often maintain the negative undercurrent within their definitions of risk, with a further focus on objective, observable, and/or measurable elements of risk. For example, Professor Thomas Litwack and colleagues conceptualised risk within forensic assessments for risk of violence as encompassing: 'the nature, severity, imminence, and frequency or duration of harm – as well as its likelihood' (Litwack, Zapf, Groscup, & Hart, 2006, p. 493). Similarly, but possibly more simply, in her book *The Psychology of Risk*, Professor Dame Glynis Breakwell conceptualised risk as: 'the probability of a particular adverse event occurring during a stated period of time... the likelihood of some specific negative event' (2007, p. 2).

From just these broad definitions, it is clear that there are some unifying features that we can pull together around 'what is risk?' within the public sector academic literature: (1) risk is often couched in negative terms within broad definitions; (2) the utilisation of risk and risk taking in practice is not acknowledged within conceptualisations; (3) risk is treated as something to be avoided or minimised; and (4) risk is treated as something objective and observable which can be measured. However, as discussed earlier, risk is not necessarily a negative thing in public sector practice, nor in everyday life, and it can lead to positive change and innovation when harnessed correctly.

Working effectively with risk is a critical and essential task within organisations to best achieve goals and objective (Ahmeti & Vladi, 2017), with effective risk management more recently being discussed by Doctors Remzi Ahmeti and Besarta Vladi as not being about risk elimination, but about the balance of risk taking, mitigation or elimination. This more flexible approach emphasises that risk does not need to be negative; it can be a positive thing. We must therefore have and embrace risk to achieve progress. These authors further discuss risk as something which is not possible to fully define, with existent definitions only being applicable to their specific purpose, organisation and/or context. With such ambiguity, and if we embrace risk as a concept which has no single-faceted definition, in addition to the overarching focus on mitigation and negative outcomes within most of the public sector academic literature on the topic, how then can this be operationalised in practice? The next section will explore practice-based definitions and how these do and don't relate to the definitions that we have discussed so far.

## Operational Definitions of Risk in Practice

As discussed, the public sector risk management academic literature is rather crowded with definitions of risk emerging from directly related fields and which are borrowed from other fields. This is both useful and daunting. Many of these focus on risk as a negative thing which ought to be avoided or mitigated. While this is certainly one element of risk, is this the key feature of a definition or focus that is most useful in practice? As was also discussed, there is a need to embrace uncertainty and embrace risk, though this is not always the central discussion within the academic literature. We must therefore also consider carefully public sector focused and practice-based definitions of risk to allow a rounded picture of what is most useful and most practicable in the actual working environment.

Within practice, one of the key international, independent, non-governmental, standard-setting organisations is the International Organization for Standardization. The ISO was established in 1946 and, at the time of writing this book, has a membership of 165 national standards bodies. The ISO aims to bring together expertise, share knowledge and develop consensus-based and voluntary international standards which are relevant to real practice and which support innovation. As discussed earlier, risk is central to innovation and is a key component of public sector working. The ISO definition and guidance on risk and risk management are therefore incredibly important when considering approaches and application to practice. To attempt to unify the principles behind risk management within the sector, the ISO 31000 (2018) was developed. The ISO 31000 is essentially a set of principles which have been structured into a framework to facilitate risk management processes, regardless of sector, speciality or size. This has been designed to flow into and support effective corporate governance, and so may be considered as more than a check-box type of exercise: if used properly, it can be used to inform risk practice, risk management, and risk and corporate governance decision making.

Returning to definitions, the conceptualisation of risk using the ISO 31000 as a guiding framework outlines that risk is the effect of uncertainty on objectives. This effect can be positive or negative; it is simply a deviation from the norm or the expected outcome. Within this conceptualisation, positive effects resulting from the risk are viewed as an opportunity and negative effects are considered as threats. Using this conceptualisation of risk, there is a balance to be had between removing or reducing risks (threats) and taking risks (opportunities) to achieve growth or benefits. This mirrors Osborne and Brown's (2011) argument, discussed in the previous section, around risk being

essential to innovation and answers their concern around the need for definitions of risk within the public sector to be less focused on negative outcomes and measurement. Further, through linking this conceptualisation of risk to the flexible ISO 31000 risk management principles and framework, it automatically becomes operationalisable and meaningful to practice, in a way which can be both individually tailored to local issues and foci while also affording the opportunity to benchmark against other organisations. The concern noted by Ahmeti and Vladi (2017) over the standardisation of risk definitions within the public sector being essentially meaningless then also becomes alleviated, as risk is conceptualised as something which is flexible and dynamic, but which sits within a broad definition rather than as something which has a single absolute definition.

Another important, practice-focused professional body which provides internationally recognised training and qualifications in risk management, the Institute for Risk Management (IRM), have adopted a definition of risk based on the standards of the ISO/IEC Guide 73 (which have since been superseded by the ISO Guide 73:2009), that is, the combination of the probability of an event and its resulting consequences. Their publication, *The Risk Management Standard* (2002) presents an arguably more simple and easy-to-apply guide to risk, risk assessment and risk management than the ISO 31000, and is aimed at business managers rather than risk professionals. As with the ISO 31000, the IRM's Risk Management Standard recognises that in all facets of risk management, there is potential for expected and unexpected consequences which may lead to benefit or threats to success.

There are many more public sector governance and standard setting organisations which could be discussed, but the ISO and IRM guidance and conceptualisation on risk within real risk management and governance practice are often the two which are cited and used within practice, or which are adapted within other standards. It is clear that the definitions and conceptualisations applied within the public sector practice guidelines and those held within the academic sector are quite different. The increased flexibility used within the practice in the conceptualisation of risk and application of this within a framework approach to risk management and governance contrasts starkly with the rigid operational definition approach applied in research. Another key deviation is the academic focus on the negative elements of risk, with the aim to reduce and remove risk, versus the embracing positive and managing potential negative outcomes of risk seen within the practice focused guidelines. These differences are important, as they suggest that the research evidence emerging from the academic sector around risk may not be wholly fitting with the realities of work-a-day practice and standards. This is not to

say that one is 'better' than the other; instead, they serve different purposes and functions. However, the usefulness of research to practice can only be enhanced by future risk researchers more keenly aligning to actual practice-based definitions, conceptualisations, and processes. Similarly, non-academic risk professionals will benefit through recognising these deviations and thinking critically about the implications of the differences and similarities to their local area of work prior to applying lessons emerging from the research evidence.

The reasons for the differences in approach in defining and conceptualising risk across public sector academic research and practice are complex and may be best explained by the epistemology of risk research and practice. That is, how is knowledge created and understood? And why does this matter in risk practice? The next section will explore this in depth.

## THE EPISTEMOLOGY OF RISK

We will start this section by defining epistemology. Following this, we will consider the relevance of epistemology in defining and conceptualising risk in public service discourse. We will also consider how epistemological assumptions underpin risk assessment and risk management across risk practice in the public sector.

Epistemology refers to 'the nature of knowledge, its possibility, scope and general bias' (Hamlyn, 1995, p. 242). It is an analysis of how we create and justify knowledge (Dillon & Wals, 2006). It concerns the provision of a 'philosophical grounding for deciding what kinds of knowledge are possible and how we can ensure that they are both adequate and legitimate' (Maynard, 1994, p. 10). In other words, from a risk assessment and management epistemological perspective, we should be asking two key questions: (1) What is risk? What knowledge counts as risk, and how is it conceptualised and framed across the public sector? and (2) How does this knowledge underpin risk assessment and risk management across the public sector?

Some definitions of risk implicitly embrace a view that neither acknowledges philosophical debates or disciplinary and/or departmental perspectives, leading to confusion in their discourse on risk (Althaus, 2005). To ensure logical and thorough assessment and management of risk, accuracy in defining risk is imperative. This brings us to our first epistemological question on risk

definition. To address this question, we will consider how risk is perceived and applied across a few public sector departments and disciplines.

According to Professor Paul Thomson, who published key work on the philosophical foundations of risk in 1986, risk may be defined as:

- (1) Subjective: The psychological state of the person plagued with doubt, uncertainty, or worry about an event's outcome.
- (2) Objective: The variance between actual losses and expected losses.
- (3) Real: The combination of the probability of risk materialising in the real world, with the negative impact if it materialises. A probability-impact matrix may be used to define real risk.
- (4) Observed: The measurement of real risk derived from a prototype of the real world. This can be demonstrated using Monte Carlo simulation for example, to automatically produce different potential real-life scenarios.
- (5) Perceived: The approximation of real risk by an unskilled member of the public.

The risk definitions above capture two distinct epistemologies of risk: (1) risk defined or conceptualised as an objective reality that exists in the 'outside' world (e.g. objective and observed risks); and (2) risk defined or conceptualised based on value judgements or application of knowledge to uncertainty. Professor Catherine Althaus develops these further in a paper published in 2005 by integrating these risk epistemologies into perceptions of risk, highlighting the forms in which knowledge is applied to enhance understanding of the unknown. Worth noting is the intricate relationship between risk and uncertainty. Uncertainty is transformed to a risk proposition based on the specific, often disparate knowledge applied by different professions and disciplines to contain its randomness.

Our second epistemological questions seek to understand how risk knowledge and definitions influence risk perception and conceptualisation, across different public sector disciplines. Based on the work of Professor Althaus (2005), who outlined various disciplinary definitions of risk across different contexts and forms of knowledge, we will consider examples from philosophy, science and medicine, social sciences, sociology, logic and mathematics, economics, psychology, law and theology. This work will be used to inform the remaining structure of this section of the chapter.

### Philosophy and Risk

Philosophy offers three ways of considering risk. First, as an ontological proposition, that is, what is the nature of risk, and how does it come into being, if indeed it exists. Apart from a few ontological studies into the nature of risk (see, e.g. Enang, 2019), there is still a dearth of research in this area. Ontological questions of risk seek to address the source of risk, which is necessary during the process of risk assessment and management. Axinn (1966) and Kadwany (1997) argue that risk knowledge can assume the form of theory and may also be applied in practice. This brings us to our second philosophical consideration, which is risk as an epistemological proposition, that is, what information counts as expert risk knowledge, and how should this be applied in practice. This is the main thrust of this chapter, as the following discussions show how the variance in risk definition and understanding impact risk attitudes, assessment and management across different disciplines. Third, risk may be considered as a moral proposition, that is, from the perspective of choice, duty, ethics, justice, utility, rights and virtue (Douglas, 2003; Roth, 2010). The preceding narrative depicts a recursive relationship between philosophy and risk (Hansson, 1996) where each simultaneously informs and shapes the other.

### Science, Medicine and Risk

From a science and medicine perspective, risk is conceptualised as objective reality (Adams, 1995). In this scenario, calculations, principles and postulates are applied to the unknown or calculations, principles and postulates enhance understanding around the unknown. For instance, in the case of the 2020 global pandemic of the novel corona virus (SARS-CoV-2) calculating the 'R' rate or reproduction rate of the virus enhanced understanding about how fast the virus was reproducing and the impact that would have on rates/scale/speed/aggregation of infection. Harnessing risk knowledge in this way helped public health departments and governments in the areas most affected by the virus to put in appropriate corrective action to manage negative health and economic consequences of COVID-19. According to recent research findings disseminated in the World Economic Forum, over 70% of respondents in Australia, Canada, Denmark, Germany, Netherlands, Italy, South Korea and Sweden believed that their governments handled the COVID-19 pandemic well. In contrast, over 50% of respondents in the United Kingdom and United States believed that their governments handled the COVID-19 pandemic