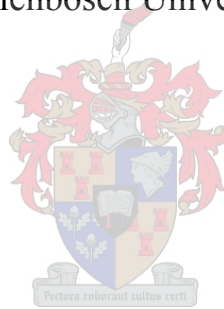


ETHICS AND RISK

TOWARD A RESPONSIBLE APPROACH TO ACCEPTABLE RISK IMPOSITIONS

Annemarie Dorothée Bijloos

Dissertation presented in fulfilment of the requirements for the degree of
Doctor of Philosophy in the Faculty of Arts and Social Sciences at
Stellenbosch University



Supervisor:

Prof. Anton Albert Van Niekerk

December 2017

DECLARATION

By submitting this dissertation electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

December 2017

ABSTRACT

This research deals with the ethical evaluation of risk impositions, i.e. actions that expose other human beings to risk. When – under what circumstances or conditions – is it acceptable to perform an action that exposes others to risk? The research attends to this question in three parts.

The first part of the research explores the notion of risk and its relevance for normative philosophy. The history of the term risk is discussed, as well as its relation to ethical concepts such as agency, knowledge, harm, safety, blame, trust, and responsibility.

The second part of the research investigates how four branches of mainstream ethical theory – utilitarianism, deontology, rights-based ethics, and contractualism – individually evaluate risk impositions. These theories of right action bring to the fore several ethical considerations that influence the acceptability of risk impositions: the likeliness and severity of harm; the likeliness and extent of benefit; the obligation not to harm without good reason; rights not to be harmed without good reason; compensation for suffered harm; consent to risk exposure; distribution of risks and benefits; knowledge about consequences and victims; relations between cause and effect; and power relations between risk-imposing agents and risk-bearers.

A multitude of these considerations can determine the acceptability of a particular risk imposition, depending on the context in which the risk is imposed. Quality judgement is indispensable, for a risk-imposing agent must judge which considerations are most important in the given situation, to what extent they matter, and whether they justify the risk imposition. An honest and adequate evaluation of risk impositions then has to take all mentioned considerations into account, and be attentive to the motives, character, and judgement of agents. However, the traditional normative approaches fail to provide such a holistic evaluation, as they tend to focus solely on several considerations, and lack attention to the context in which risks are imposed.

The third and last part of the research therefore develops an alternative approach to the evaluation of risk impositions, which combines theories of action with theories of virtue. The proposed alternative interprets the notion of responsibility in virtue-ethical

terms, i.e. as the virtue of answerability. It argues that the acceptability of risk impositions is directly correlated to the extent to which a risk-imposing agent is answerable for her actions. It argues that answerability has to be understood conversationally, as a call-and-response process between risk-imposing agent and risk-bearer. And it argues that a risk-imposing agent should aim to be answerable, and can take responsibility, for her actions in three ways: by providing reasons for acting, by responding in a practically adequate way to risked or actual harm, and by responding in an attitudinally appropriate way to risked or actual harm.

OPSOMMING

Hierdie navorsing handel oor die etiese beoordeling van risiko-imposisies, d.i. dade waarin 'n agent ander mense aan risiko's blootstel. Wanneer – onder watter omstandighede of voorwaardes – is dit aanvaarbaar om 'n handeling uit te voer wat ander mense aan risiko's blootstel? Die navorsing behandel hierdie vraag in drie dele.

Die eerste deel van die navorsing ondersoek die begrip risiko en die relevansie daarvan vir normatiewe filosofie. Die geskiedenis van die begrip risiko word bespreek sowel as die verhouding tussen risiko en aanverwante morele begrippe soos agentskap, kennis, skade, veiligheid, blaam, vertrouwe en verantwoordelikheid.

Die tweede deel van die navorsing ondersoek hoe vier hoofstroom tipes etiek-teorie – utilitarisme, deontologie, regte-gebaseerde etiek en sosiale kontrak-teorie – elk individueel risiko-imposisies moreel evalueer. Hierdie teorieë i.s. (moreel) regte optrede bring verskillende etiese oorwegings wat die aanvaarbaarheid van regte-imposisies beïnvloed, aan die lig: die waarskynlikheid en intensiteit van skade; die waarskynlikheid en omvang van bevoordeling; die obligasie om nie skade te berokken sonder goeie rede nie; regte wat nie geskend mag word sonder goeie rede nie; kompensasie vir skade wat gelyk is; toestemming vir risiko-blootstelling; die verspreiding van risiko-voordele; kennis van gevolge en van slagoffers; verhoudinge tussen oorsaak en gevolg; en magsverhoudinge tussen diegene wat mense aan risiko's blootstel en diegene wat aan risiko's blootgestel word self.

'n Veelheid van laasgenoemde oorwegings kan die aanvaarbaarheid van 'n spesifieke risiko-imposisie vasstel, afhangende van die konteks waarin die risiko sigself voordoet. Kwaliteit-oordeel is onontbeerlik, want diegene wat mense aan risiko's blootstel moet oordeel watter oorwegings die belangrikste is in die gegewe situasie, in watter mate hulle van belang is, en of hulle die risiko-imposisie regverdig. 'n Eerlike en toereikende evaluering van risiko-imposisies moet al die genoemde oorwegings in ag neem, en let op die motiewe, karakter en oordeel van agente. Die tradisionele normatiewe benaderings bied egter nie so 'n holistiese evaluering aan nie, aangesien hulle geneig is om slegs op enkele oorwegings te fokus, en nie aandag te gee aan die konteks waarin risiko's opgelê word nie.

Die derde en laaste deel van die navorsing ontwikkel daarom 'n alternatiewe benadering tot die evaluering van risiko-imposisies – 'n benadering wat teorieë i.s. regte handeling met deugdeteorie kombineer. Hierdie voorgestelde alternatief interpreteer die begrip verantwoordelikheid in deugde-etiese terme, d.i. as die deug van verantwoordbaarheid. Dit argumenteer dat die aanvaarbaarheid van risiko-imposisies direk korreleer met die mate waarin die agent wat aan ander aan risiko's blootstel, verantwoordbaar is vir haar aksies. Dit argumenteer dat verantwoordbaarheid in dialogiese terme verstaan moet word, as naamlik 'n roep-en-respons proses tussen die agent wat die risiko laat gebeur en die een wat aan die risiko blootgestel is. Hierdie benadering argumenteer ook dat 'n agent wat ander aan risiko's blootstel daarna moet streef om vir sy/haar dade verantwoordelikheid te aanvaar op drieërlei maniere: deur redes vir optrede te verskaf, deur in 'n praktiese sin toereikend te reageer op riskante of werklike skade, en deur op die vlak van houdings toereikend op riskante of werklike skade te reageer.

ACKNOWLEDGEMENTS

I would like to express my gratitude and appreciation to the people without whose continuous support, encouragement, interest, and confidence this project would not have been possible.

I thank my supervisor, Anton van Niekerk, for his patience, encouragement, and feedback, for offering me the opportunity to gain valuable experience, welcoming me to South Africa, and guiding this project from an insecure beginning to a successful end.

I thank the Prince Bernhard Culture Fund and the Stellenbosch Merit Fund for saving my research and giving me financial motivation when I needed it the most.

I thank my parents, Ton and Judith, for being there for me in the most loving, accepting, and caring way imaginable, and for believing in me enough to send me off on an initially very vague adventure into the South African unknown. I thank my sister and brother, Emma and Willem, for the music shares, dinner dates, yoga classes, and sleepovers, and for being part of the best family support structure.

I thank my housemate and loyal friend Tycho, for endless inspiring talks about life, love, and research, in the kitchen or nature, on the steps of J. S. Gericke or Jameson Hall, during road trips and wine tastings. I thank my wonderful friend Avi for all the laughs, crazy adventures, and good conversations. I treasure my deep connection with both you guys. I could not have climbed this mountain without you.

I thank all the friends I've made in South Africa for giving me a feeling of belonging. Felix and Anna (for Boytjies & Girtjies), Paul (for holding my hand and heart), Megan and Naima (for making my home), Niko and Greg (for mind shifts and adventures), Jessica and Franzi (for being my main girls), Gabi and Yon (for Friday night dinners), Tessa, Judith, Vincent, Emilie, Nathan, and Annelotte (for bringing NL to SA), Hannah (for cheering me over the finish line), and Angelo (for using hip hop to lift writer's blocks).

I thank all my friends in the Netherlands for innumerable letters, messages, and calls, and some amazing visits to South Africa. Anna, Welmoet, Rebecca, Vivian, Marthe, Daniela, Alicia, and Lucie: my heart is full of the memories we shared down south. Cornélie, Elisabeth, Esther, Floor, Barbara, and Quirine: I am forever grateful for your friendship back home.

I thank the yoga and meditation teachers at the Hot Yoga Studio, Yoyoga, and ReUnion for holding a much-needed space of calm, reflection, and refuge during my research.

I thank Lynette and her family for letting me stay at their beautiful home in Noordhoek to revise my manuscript.

Annemarie Bijloos

9 November 2017, Cape Town

TABLE OF CONTENTS

INTRODUCTION	1
RISK ETHICS	1
<i>THE EVALUATION OF RISK IMPOSITIONS</i>	2
<i>ETHICAL PRINCIPLES AND CONSIDERATIONS</i>	4
OVERVIEW OF THE LITERATURE	5
POSITIONING THE RESEARCH	7
RESEARCH DESIGN	8
<i>PART I: WHAT IS A RISK?</i>	8
<i>PART II: DO MAINSTREAM ETHICAL THEORIES PROVIDE A CONVINCING EVALUATION OF RISK IMPOSITIONS?</i>	9
<i>PART III: CAN A VIRTUE-ETHICAL UNDERSTANDING OF RESPONSIBILITY OFFER A TENABLE ALTERNATIVE EVALUATION OF RISK IMPOSITIONS?</i>	11
<u>PART I</u>	13
1. UNDERSTANDING RISK	13
1.1 INTRODUCTION	13
1.2 DEFINING RISK	13
<i>1.2.1 CAN RISK BE DEFINED?</i>	13
<i>1.2.2 THE NEGATIVE SIDE OF RISK</i>	15
<i>1.2.3 THE POSITIVE SIDE OF RISK</i>	18
IDENTITY FORMING AND PERSONAL DEVELOPMENT	19
BUSINESS AND ECONOMIC DEVELOPMENT	22
<i>1.2.4 ETYMOLOGY</i>	24
<i>1.2.5 MODERNITY</i>	26
<i>1.2.6 CONCLUDING REMARKS</i>	29
1.3 AGENCY	29
<i>1.3.1 THE CAPACITY OF CHOICE</i>	30
<i>1.3.2 THE EXTENT OF INFLUENCE AND CONTROL</i>	33
<i>1.3.3 TO LIVE IS TO CONFRONT RISKS</i>	35
1.4 KNOWLEDGE	36
<i>1.4.1 FORESIGHT AND PRUDENCE</i>	36
<i>1.4.2 PREDICTION AND PROBABILITY</i>	37

1.4.3 <i>UNCERTAINTY AND IGNORANCE</i>	41
1.4.4 <i>RISKY KNOWLEDGE</i>	43
1.5 CONCLUSION	44
2. THE MORALITY OF RISK	45
2.1 INTRODUCTION	45
2.1.1 <i>FACTS AND VALUES</i>	45
2.2 HARM AND BENEFIT	47
2.2.1 <i>FOCUS ON HARM</i>	48
2.2.2 <i>HARM AND MORALITY</i>	48
2.2.3 <i>DOES A RISK IMPOSITION CONSTITUTE HARM?</i>	50
2.3 SAFETY AND SECURITY	52
2.3.1 <i>THE PARADOX OF BEING TOO SAFE</i>	52
2.3.2 <i>UNDESIRABLE AND IMPOSSIBLE</i>	53
2.3.3 <i>NOTHING VENTURED, NOTHING GAINED</i>	54
2.4 MORAL JUDGEMENTS, EMOTIONS, AND VALUES	55
2.4.1 <i>BLAME</i>	55
2.4.2 <i>(AB)NORMAL AND (UN)NATURAL</i>	56
2.4.3 <i>RATIONAL EXPERTS, IRRATIONAL LAYMEN</i>	57
2.4.4 <i>VALUABLE EMOTIONS</i>	60
2.5 TRUST AND RESPONSIBILITY	61
2.5.1 <i>TO TRUST OR NOT TO TRUST</i>	61
2.5.2 <i>RESPONSIBILITY</i>	66
2.6 CONCLUSION	68
<u>PART II</u>	69
3. THE UTILITARIAN PERSPECTIVE	69
3.1 INTRODUCTION	69
3.2 THE FOCUS ON ACTUAL OUTCOMES	71
3.2.1 <i>ACTUAL CONSEQUENCES MATTER</i>	71
3.2.2 <i>ACTUAL CONSEQUENCES ESCAPE ONE'S CONTROL</i>	72
LUCK AND THE CHOICES OF OTHERS	72
RESPONSIBILITY AND BLAMEWORTHINESS FOR ACTUAL OUTCOMES	73

3.2.3 <i>COMPARING CONSEQUENCES</i>	75
3.2.4 <i>COLD COMFORT OF HINDSIGHT</i>	75
3.2.5 <i>WRITING IT OFF</i>	77
3.3 THE FOCUS ON HYPOTHETICAL OUTCOMES	77
3.3.1 <i>IMPOSING A RISK TO MAXIMISE EXPECTED UTILITY</i>	78
3.3.2 <i>PROBLEMS WITH PROBABILITIES</i>	80
UNFORESEEN AND UNFORESEEABLE CONSEQUENCES	81
THE IMPORTANCE OF THE IMPROBABLE	83
3.3.3 <i>PROBLEMS WITH UTILITIES</i>	83
DIFFERENCES IN PERCEPTION AND EXPERIENCE OF RISK	84
PERMITTING UNFAIRNESS	86
3.3.4 <i>WHY EUM DOES NOT WORK</i>	89
3.4 CONCLUSION	89
4. THE DEONTOLOGICAL PERSPECTIVE	91
4.1 INTRODUCTION	91
4.2 RISK IMPOSITIONS AND THE DUTY NOT TO HARM	93
4.3 ALTERNATIVE ONE: AN ABSOLUTE DUTY NOT TO IMPOSE RISKS	94
4.3.1 <i>MORAL DIFFERENCES BETWEEN PROBABILITIES</i>	95
4.3.2 <i>DEADLOCKING SOCIAL LIFE</i>	95
4.3.3 <i>REJECTING ABSOLUTISM</i>	96
4.4 ALTERNATIVE TWO: DRAWING A LINE (OR TWO)	96
4.4.1 <i>A DUTY NOT TO IMPOSE LIKELY OR PROBABLE RISKS</i>	97
A LIKELINESS THRESHOLD	97
A PROBABILITY THRESHOLD	99
4.4.2 <i>A DUTY NOT TO IMPOSE SEVERE RISKS</i>	100
4.4.3 <i>A LIKELINESS-SEVERITY GRID</i>	100
LIKELY BUT SMALL RISKS	101
UNLIKELY BUT LARGE RISKS	102
4.4.4 <i>REJECTING CUT-OFF LINES</i>	102
4.5 ALTERNATIVE THREE: A BALANCING ACT OF DUTIES	103
4.5.1 <i>IMPOSING A RISK TO REDUCE RISK FOR THE RISK-BEARER</i>	104
4.5.2 <i>IMPOSING A RISK TO REDUCE OVERALL RISK</i>	105

4.5.3 <i>CRITIQUE ON BALANCING</i>	106
MORAL INDETERMINACY	107
THE DEONTOLOGICAL UNJUSTIFIABILITY OF BALANCING	108
4.5.4 <i>REJECTING BALANCING</i>	108
4.6 CONCLUSION	109
5. THE RIGHTS-BASED PERSPECTIVE	110
5.1 INTRODUCTION	110
5.2 RIGHTS IN THE CONTEXT OF RISK IMPOSITIONS	113
5.3 AN ABSOLUTE RIGHT AGAINST RISK	113
5.4 A RIGHT AGAINST LIKELY OR SEVERE RISK	114
5.4.1 <i>DIFFERENCES BETWEEN PERSONS</i>	115
5.4.2 <i>THE MOTIVATIONS OF THE RISK-IMPOSER</i>	115
5.4.3 <i>THRESHOLDS CONTRADICT THE ESSENCE OF RIGHTS</i>	116
5.5 A PRIMA FACIE RIGHT AGAINST RISK	117
5.5.1 <i>IMPOSING A RISK FOR THE GREATER GOOD</i>	117
5.5.2 <i>COLLECTIVE LIFE-SAVING BENEFITS</i>	118
5.5.3 <i>AN UNCLEAR OUTCOME</i>	120
5.6 A RIGHT AGAINST RISK WITHOUT RISK	120
5.6.1 <i>ACTUAL CONSENT</i>	121
5.6.2 <i>HYPOTHETICAL CONSENT</i>	122
5.6.3 <i>IMPORTANT, BUT NOT NECESSARY</i>	123
5.7 A RIGHT TO COMPENSATION	123
5.7.1 <i>EX ANTE COMPENSATION</i>	124
5.7.2 <i>EX POST COMPENSATION</i>	125
5.7.3 <i>IMPORTANT, BUT NOT CONCLUSIVE</i>	126
5.8 CONCLUSION	127
6. THE CONTRACTUALIST PERSPECTIVE	129
6.1 INTRODUCTION	129
6.1.1 <i>RESPECT FOR PERSONS</i>	130
6.1.2 <i>JUSTIFICATION: AGREEMENT OR REJECTION</i>	131
6.1.3 <i>SPOTLIGHT ON THE INDIVIDUAL</i>	131

6.1.4 <i>AN EXAMPLE OF ONE AGAINST MANY</i>	134
6.2 JUSTIFYING RISK IMPOSITIONS	134
6.2.1 <i>A QUESTION OF DISTRIBUTION</i>	134
6.2.2 <i>EQUAL DISTRIBUTION OF RISKS AND BENEFITS</i>	135
SHARING	135
TRADING	136
6.2.3 <i>UNEQUAL DISTRIBUTION OF RISKS AND BENEFITS</i>	138
SOCIALLY BENEFICIAL RISKY ACTIONS	138
A MATTER OF PERSPECTIVE	140
6.3 THE EX POST PERSPECTIVE	140
6.3.1 <i>WHAT DOES ONE KNOW?</i>	142
KNOWLEDGE OF POSSIBLE CONSEQUENCES	142
KNOWLEDGE OF ONESELF AND POSSIBLE CONSEQUENCES	143
6.3.2 <i>MORAL DEADLOCK REVISITED</i>	143
6.3.3 <i>NUMBERS COUNT</i>	145
6.4 THE EX ANTE PERSPECTIVE	146
6.4.1 <i>REASONABLE EX ANTE, UNREASONABLE EX POST</i>	148
6.4.2 <i>REVERTING BACK TO AGGREGATION</i>	148
6.4.3 <i>INDIVIDUAL VS. SOCIAL AGGREGATION</i>	149
6.5 CONCLUSION	150
7. RECAPITULATION	151
7.1 THE UTILITARIAN PERSPECTIVE	151
7.2 THE DEONTOLOGICAL AND THE RIGHTS-BASED PERSPECTIVES	153
7.3 THE CONTRACTUALIST PERSPECTIVE	154
7.4 THE PROPOSED ALTERNATIVE	155
<u>PART III</u>	158
8. THE VIRTUE-ETHICAL PERSPECTIVE: RESPONSIBILITY AS THE VIRTUE OF ANSWERABILITY	158
8.1 INTRODUCTION	158
8.2 RESPONSIBILITY	159
8.3 VIRTUE ETHICS	162

8.3.1 <i>VIRTUES</i>	162
MEANS BETWEEN EXTREMES	162
HONOURABLE MOTIVATIONS	164
A DEVELOPMENTAL NOTION	165
8.3.2 <i>PHRONĒSIS</i>	165
DELIBERATION	166
8.4 VIRTUOUS RESPONSE-ABILITY	168
8.4.1 <i>ADDRESSING AND RESPONDING</i>	168
8.4.2 <i>THREEFOLD ANSWERABILITY FOR RISK IMPOSITIONS</i>	170
RESPONSIBLE REASONS FOR ACTING	172
RESPONSIBLE MANAGEMENT	172
RESPONSIBLE ATTITUDES	173
CREATION AND MANAGEMENT OF RISK	174
8.5 WHY DID YOU X? GIVING REASONS FOR ACTING	176
8.5.1 <i>INTENTIONAL RISK IMPOSITIONS</i>	176
LOOKING AHEAD AND LOOKING BACK	177
MORAL IMAGINATION	178
8.5.2 <i>REASONS FOR ACTING</i>	180
SITUATED ANSWERABILITY	183
THE LIMITS OF KNOWLEDGE AND FALLIBILITY OF REASONS	187
NON-RATIONAL REASONS	189
8.5.3 <i>CONVERSATIONAL STAGES OF RESPONSIBILITY</i>	192
THE CONTRIBUTION	192
THE INQUIRY	192
THE ADDRESS	194
THE ACCOUNT	195
8.6 ANSWERABILITY AS PRACTICAL AND ATTITUDINAL RESPONSIVENESS	201
8.6.1 <i>PRACTICAL ANSWERABILITY</i>	201
MANAGING RISK IMPOSITIONS	203
8.6.2 <i>ATTITUDINAL ANSWERABILITY</i>	206
ATTITUDES AND EMOTIONS	207
RESPECT, CARE, AND EMPATHY	211
8.7 LEARNING HOW TO BE ANSWERABLE	212

CONTINUING EDUCATION FOR UNCERTAINTY	213
LEARNING OBJECTIVES	214
A COMMUNAL EFFORT	215
8.8 CONCLUSION	216
CONCLUSION	219
THE ACCEPTABILITY OF RISK IMPOSITIONS	219
<i>A COMPLEX INTERPLAY OF MORAL CONSIDERATIONS</i>	220
<i>RULES AND JUDGEMENT</i>	221
<i>VIRTUOUS, CONVERSATIONAL, AND THREEFOLD ANSWERABILITY</i>	222
<i>NECESSARY CONVERSATION</i>	224
DRAWBACKS	226
IDEAS FOR FUTURE RESEARCH	227
A FINAL WORD, FOR NOW	229
BIBLIOGRAPHY	230
LIST OF TABLES AND FIGURES	254

INTRODUCTION

Life is an inherently risky endeavour. People take, and are faced with, risks every day. When they cross streets, drive cars, and smoke cigarettes; when they work at jobs, save money, and invest their savings; when they eat meals, take medication and get vaccinated; when they kiss others, propose marriages, and raise children. They are also exposed, and expose others, to risks. Risks of road accidents, power failures, and workplace hazards; risks of robberies, immigration waves, and terrorist attacks. It is therefore not surprising that risk is a widely used concept in many professional disciplines: business enterprises, insurance, policymaking, legal regulation, crime prevention, defence, warfare, technology, scientific research, medical care, and sustainability issues. To live is to confront risks, and dealing with risks is then an integral part of life.

Risk ethics

One takes a risk, or performs an action that involves risk, when one acts even though the outcome of one's action is uncertain. The term risk is used specifically if that uncertain outcome is understood in negative terms: risk is then, roughly defined, the chance or possibility of something bad happening as a result of one's action. What is bad about the possible outcome can be understood in various ways, but essentially risk refers to harmful or damaging outcomes. Consider a driver jumping a yellow light and the risk of a car collision, a tour company guiding a hiking trip and the risk of an outdoor accident, or a government closing its borders and the risk of international tension.

Because risky actions involve possible negative consequences as a result of human choice or conduct, they are by definition receptive to moral evaluation.¹ However, the evaluation of risky actions seems to pose problems for traditional Western ethics.² In Western ethics the evaluation of actions, namely, focuses mainly on determined actions, i.e. actions of which the outcomes are (assumed to be) known with certainty. When

¹ Moral evaluation concerns the assessment of the rightness or wrongness of human actions, as well as their associated intentions and consequences. Ethical evaluation concerns the systematic elaboration of such assessments, for example in the form of a normative theory.

² This research focuses on Western ethics. When I refer to traditional or mainstream normative theories, I refer specifically to those branches of ethical theorising that are traditional or mainstream in Western ethics, such as virtue ethics, utilitarianism, deontology, rights-based ethics, and contractualism.

evaluating actions such as lying, stealing, cheating, or killing, often (it is assumed that) there is no uncertainty about the harmfulness of the outcomes of such actions: uncertainty is limited to whether, and on the basis of which principles, performing harmful actions can be deemed justifiable. Can people lie, steal, cheat, or kill? Or should they care for, protect, or save? And if so, why or when?

However, risky actions are by definition indeterminate, i.e. their outcomes are uncertain. The fact that actions involving risk will only possibly, not certainly, result in harmful outcomes, leads one to wonder: are risky actions bad per se? If actions that involve risk do not result in harm, can they still be considered wrong? How should one evaluate actions that do not immediately or directly bring about negative outcomes, but increase the possibility of such outcomes occurring? To go back to some earlier examples, what is wrong – or is there something wrong at all – about jumping a yellow light or taking a group of people hiking? A general worry among philosophers is that mainstream ethical theories might not be able to adequately guide human actions when the outcomes of those actions are uncertain. This has been the impetus for developing a separate, and relatively young, field in normative philosophy that deals specifically with ethical questions evoked by risks: risk ethics. Risk ethics shifts the focus from harm – a main focus point of normative philosophy in general – to potential harm.

The evaluation of risk impositions

Risky actions fall into two categories. Firstly, there are actions of individual risk-taking, like taking medication of which some but not all side effects are known. Secondly, there are risk impositions: actions through which an agent – be it an individual person, or a collective agent such as a business or a government – exposes others to risk, like a doctor prescribing a patient such medication, or a factory making the drug. Often individual risk-taking overlaps with exposing others to risk, as one can think of many cases in which agents perform actions that not only expose themselves, but also others, to risk.³ Consider someone driving fast while transporting a passenger, or having unprotected intercourse with a partner. To impose a risk on others is then to perform an

³ One can distinguish ‘imposing a risk on others’ from ‘exposing others to risk’. Imposing has a connotation of actively doing something, whereas exposing has a more passive connotation of letting something happen: comparable to the distinction between an action and an omission. However, I do not use this distinction, as I believe that imposing risk and exposing to risk equally demand justification. I use imposing and exposing interchangeably throughout this research.

action that exposes others to the possibility of harm. Risk impositions comprise ‘pure’ risk impositions, i.e. actions performed by agents that only expose others, and not the agents themselves, to risk, such as hiring underpaid workers to do a dangerous job. They also comprise risk impositions that are part of risk-taking actions, i.e. actions performed by agents that expose others, as well as the agents themselves, to risk, such as driving, smoking, or having sex. From an ethical point of view, a risk imposition is more problematic than an action of individual risk-taking. The latter often only has to be deemed justifiable by the one taking the risk: that person has the freedom and autonomy to do what he or she thinks is best in the face of uncertainty. The former however involves the possibility of harm to others, and harm to others generally needs to be justified interpersonally.

Now are risk impositions wrong per se? Because most actions involve some kind of risk to others, this question needs to be answered negatively. For if one were prohibited from performing any action that involves risk to others, or which exposes others to even the slightest possibility of harm, life would not be liveable. But there must also be some kind of limit to, or threshold for, the risk that people are permitted to impose on others: otherwise life would be equally unliveable. So, when is a risk negligible, tolerable, excusable, permissible, or allowable? How much risk do people find acceptable in their own lives and those of others? And when is it justifiable to expose others to risk? These questions lead to the main research question:

When – under which circumstances or conditions – it is acceptable to impose a risk on others?

Let me demarcate the field of research opened up by this question. Firstly, I focus specifically on risk impositions, i.e. actions that involve the possibility of harm to others, and not on individual risk-taking that only exposes the risk-taker to the possibility of harm. Secondly, I limit myself to actions that impose a risk on other human beings. I then leave out of consideration the risks that human beings impose on non-human entities and creatures, such as the atmosphere or animals. However, I do include risks that human beings impose on the wellbeing or integrity of non-human entities and creatures if they have repercussions for other human beings – a prime example being climate change and its negative effects on human life around the planet.

Ethical principles and considerations

The underlying difficulty here is how to make morally justifiable and responsible choices when one is not certain about the outcomes of one's actions. This not only affects consequentialism, the branch of normative thinking explicitly focused on outcomes. Other normative theories also struggle to determine the acceptability of choices and actions under conditions of uncertainty. Take a deontologist, who stresses the importance of the duty not to harm others. Now if one does not know, or cannot predict, the outcomes of one's actions, how can one then determine whether one's actions are in accordance with this duty? Consider passive smoking and its associated health risks: when, or at what point, does smoking in the vicinity of others in fact constitute harm? Does the duty of non-maleficence entail that one does not smoke one cigarette near another person, two cigarettes, ten, a hundred? Should ethical principles with which determinate actions are evaluated be applied with the same rigour to indeterminate actions? Or should one be sensitive to how likely or how bad the negative outcomes are, and use less rigorous principles in less likely or less bad cases? These questions invite one to think about issues concerning knowledge, prediction, and uncertainty on the one hand, and decision-making, justifiability, and responsibility on the other. Risk ethics in general, and this research in particular, is concerned with these issues.

Risk is not a topic that is often explored from an ethical perspective. A reason for this is that the dominant understanding of risk – as scientific, technical, and calculative – has for a long time shunned ethical reflection. This understanding, namely, assumes that if a risk is calculated objectively and accurately, it will be apparent how it should be dealt with: human judgement becomes superfluous. When risk *is* approached from an ethical point of view, the term is generally interpreted in utilitarian terms. The acceptability of risk is then determined by a cost-benefit analysis, i.e. a utilitarian calculus: a risk is acceptable if and only if it yields the most benefit for the greatest number of people. However, there are many other moral considerations apart from costly and beneficial outcomes that play a role in the evaluation of the acceptability of risk. The major contribution of risk ethics so far is that it has drawn attention to these considerations, and has shown that risk is not merely a technocratic affair.

Consider the risks involved in medical experiments on human subjects. It is not the case that if a) such risks are proven to be small or unlikely, or b) a cost-benefit analysis shows that overall benefits significantly exceed the overall costs, participants can straightforwardly be exposed to the risks. The risks are deemed acceptable if and only if a) a cost-benefit analysis shows that the benefits significantly exceed the costs for the participants themselves, or b) the risks are understandably communicated to the participants, who have then consented to take part in the research exposing them to potentially negative effects. Voluntariness, autonomous decision-making, consent, and respect for individual persons and their rights are but a few of the moral considerations that influence the evaluation of the acceptability of risk impositions.

Other considerations are the availability of alternatives (could other, less risky, choices be made?); the distribution of possible harms and benefits (do some people shoulder the burden of risk exposure while others only stand to benefit?); the division of power (who is involved in the decision-making process with regard to risks?); and the promise or possibility of compensation (if harm materialises, can it be compensated?). In order to properly investigate what are the ethical foundations of these moral considerations and what they demand under conditions of uncertainty, one might have to move away from a purely utilitarian focus towards a broader understanding of the acceptability of risks. As Carl Cranor (2007: 51) notes: “Thinking clearly about risks and their acceptability in our lives is too important to be left to technical risk assessors and cost-benefit theorists”.

Overview of the literature

According to Neelke Doorn (2015: 355), philosophers began to notice the moral significance of uncertainty in general, and risk in particular, in the 1960s ([Doorn refers to]; Frankfurt 1962; Millet 1962; Axinn 1966; Ingle 1968). But when Robert Nozick, in his book *Anarchy, State, and Utopia* (1974), drew the attention of a wider audience to the problems risk poses for ethical evaluation, he secured the place of risk on the moral philosophical agenda. He is therefore often mentioned as the first philosopher to discuss risk from an ethical perspective. From the 1980s and into the 1990s, risk ethics started to develop as a separate normative field often linked to the ethics of science and technology and subsequently dealing with questions of safety, precaution,

permissibility, responsibility, and distribution of benefits and burdens (Jonas 1984; Sauer 1982; Altham 1984; Gibson 1985; MacLean 1986; Teuber 1990; Shrader-Frechette 1980, 1985a, 1985b, 1990, 1991). From the 2000s onwards, risk ethics has been established as a, albeit rather small and niche-like, field of its own. A prime indicator of this is the central role the relationship between ethics and risk plays in overview works such as *Risk: Philosophical Perspectives* (Lewens 2007), *The Ethics of Technological Risk* (Roeser & Asveld 2009), and the *Handbook of Risk Theory: Epistemology, Decision Theory, Ethics and Social Implications of Risk* (Roeser, Hillerbrand, Sandin & Peterson 2012).

Nozick looked at risk impositions from a rights-based perspective, and asked whether the possibility of harming someone by performing a risky action could in itself constitute a violation of a natural right. If someone has a right that others should not cause one harm, does one then also have a right that others should not perform actions that increase the possibility of being harmed? Nozick argued that from a rights-based perspective, this distinction cannot be made, as it is impossible to draw a line to determine “which probabilities impose unacceptably great risks upon others” (1974: 75). Rights are either infringed upon or respected, and to perform an action that possibly harms a person is to cross the boundary of that person’s right against being harmed. However, Nozick stated that not all rights infringements should be prohibited: some infringements are to be allowed if due compensation can be provided. By analysing risk from the perspective of rights, Nozick opened up the way for discussing the relationship between ethics and risk at the intersection of philosophy and law (Schroeder 1986; Thomson 1985, 1986, 1990, 1991; Perry 1995, 2001, 2007; Cranor 1990, 1997; McCarthy 1997; Sunstein 2002, 2005; Finkelstein 2003; Oberdiek 2009, 2012, 2014; Bolatito Asiata 2010).

Evaluating risk impositions can be done from the perspective of other ethical theories as well, and some work has been done on scrutinising the tenability of different normative perspectives on risk. Each theory approaches the evaluation of risky actions⁴ with a different set of principles: where rights-based ethics focuses on rights and claims (see previous references), utilitarianism draws attention to harmful and beneficial outcomes

⁴ I sometimes use the term risky action, but always refer to those risky actions that are risk impositions, i.e. that involve harm to others, except when explicitly stated otherwise.

(Hansson 2004b, 2007a, 2013), deontology to duties and obligations (Oberdiek 2009, 2012, 2014), contractualism to agreements, justifiability, and consent (Lenman 2008; Fried 2012a, 2012b, 2016; James 2012; Frick 2015; Nickel n. d.), and virtue ethics to virtues and character (Luntley 2003; Athanassoulis & Ross 2010, Nihlén Fahlquist & Van de Poel 2012; Nihlén Fahlquist 2015). Also, some philosophers have worked on listing the moral considerations that can influence the acceptability of risks – such as alternative options, distribution of harms and benefits, consent, and compensation – independent from specific theoretical frameworks (Sauer 1982; Aven 2007; Ersdal & Aven 2008; Brännmark & Sahlin 2010; Hayenhjelm & Wolff 2012; Vanem 2012; Espinoza & Peterson 2012; Doorn 2015).

The contributions of philosopher Sven Ove Hansson to the field of risk ethics deserve special notice. Hansson is chair of the Department of Philosophy and History of Technology at the Royal Institute of Technology in Stockholm, Sweden, where he leads a research group on the ethics of risk. He has been writing on risk and its philosophical and moral dimensions since 1989, and has supervised the PhDs of several philosophers that are now well known within the field of risk ethics, such as Martin Peterson, Per Sandin, Madeleine Hayenhjelm, and Hélène Hermansson. Hansson's ideas have culminated in the book *The Ethics of Risk: Ethical Analysis in an Uncertain World* (2013), in which he not only elaborates on moral considerations but also the tenability of ethical theories in the context of risk.

Positioning the research

Even though Hansson's work and the works of the aforementioned authors provide a rough overview of the ethical concepts that are important for the evaluation of risks, the debate tends to be fragmented and cluttered. Moreover, the theoretical foundations of these concepts are often not examined. In fact, a structural discussion and comparison of the mainstream normative perspectives on risk impositions, and the principles and considerations they prioritise, is insufficiently developed. This research seeks to address this gap. It approaches the evaluation of risk impositions from multiple theoretical angles, namely, utilitarianism, deontology, rights-based ethics, contractualism, and virtue-ethics. I have chosen these normative theories specifically as they represent a main systematic strand in the Western tradition of ethical thinking. What principles do

these theories apply when evaluating risk impositions, what considerations do they prioritise, and can one determine the acceptability of an action involving risk to others from these ethical perspectives? By analysing and comparing these perspectives, I hope to be able to develop my own account of the evaluation of risk impositions.

Research design

The research comprises three parts that each focus on a separate research question:

- Part I is made up of Chapter 1 and 2, and deals with the question: *What is a risk?*
- Part II is made up of Chapter 3, 4, 5, 6, and 7, and deals with the question: *Do mainstream ethical theories provide a convincing evaluation of risk impositions?*
- Part III is made up of Chapter 8, and deals with the question: *Can a virtue-ethical understanding of responsibility offer a tenable alternative evaluation of risk impositions?*

Part I: What is a risk?

In order to evaluate risk impositions, risk must first of all be defined. Many scholars working on the ethics of risk gloss over the fact that risk is a notoriously difficult notion to define. Moreover, the morally relevant properties of risk, such as the fact that identifying something as risky always entails a value judgement, are not, or only marginally, acknowledged, or sometimes merely assumed to be evident. Part I of the research, comprising the first two chapters, is therefore dedicated to answering the following question: *What is a risk?* The aim of Chapter 1 is to provide a substantial understanding of risk, and the aim of Chapter 2 is to explore the relation between morality and risk.

Risk is a widely used, but ambiguous term. There is not one standard definition or common meaning of risk across different fields. This mainly has to do with the equivocal definitions of risk throughout the etymological evolution of the term. In Chapter 1 I will therefore begin with a thorough analysis of existing definitions, their negative and positive connotations, as well as the historical development of risk from pre-modern to modern times. I will continue to draft two categories of prerequisites for

speaking about risk in a meaningful way, namely, agency and knowledge, and elaborate on the constituting role they play with regard to risk. Agency is a prerequisite for risk because one only speaks of risk when there is some kind of decision or act involved. Risks are run, taken, imposed, distributed, or avoided, and these verbs signify an active position, either in terms of the creation or the management of risks. In the category of agency, I discuss the capacity for decision-making, as well as the extent of influence on, and control over, particular outcomes or the general state of the world. The second prerequisite for risk is knowledge, but it is a prerequisite in an ambiguous sense. For something to qualify as a risk, one should simultaneously be aware of *and* uncertain about the possibility of harm. In the category of knowledge, I discuss notions such as prudence, foresight, prediction and unpredictability, probability, uncertainty, and ignorance.

The understanding of risk as a harmful, unwanted, or undesirable event hints at value judgements in determining what a risk is. There are several moral notions related to risk that make it interesting from a normative perspective, and in Chapter 2 I will focus on providing a concise analysis of these notions. I discuss harm and benefit, safety and adventure, moral emotions, values, and judgements, blame, trust, and responsibility.

The overarching aim of answering the first research question is to have an understanding of risk and its moral relevancy. However, with such an understanding I still have to attend to the second problem, namely, that it is insufficiently clear how ethical principles and considerations, or normative theories in general, guide human action and decision-making in contexts of risk and uncertainty.

Part II: Do mainstream ethical theories provide a convincing evaluation of risk impositions?

Part II comprises Chapters 3, 4, 5, 6, and 7. Chapter 3 will evaluate the utilitarian perspective on the evaluation of risk impositions; Chapter 4 concerns the deontological perspective; Chapter 5 the rights-based perspective; and Chapter 6 the contractualist perspective. One might question what the value is of structuring a research project according to such broad branches of normative theory. As I mentioned, the ethical literature on risk evaluation is fragmented: different authors write from different

normative perspectives that highlight different, but in my opinion equally important, moral considerations. I not only want to provide an overview of how mainstream normative perspectives generally evaluate risk impositions, but also want to critically discuss their contributions in relation to each another. Such a cross-comparison can show the strong points and shortcomings of separate theoretical perspectives, and enables me to appraise whether they can on their own provide tenable evaluations of risk impositions.

Chapter 7 comprises a short recapitulation, in which I reflect on the previous four chapters. I will argue that these perspectives each highlight important considerations, but on their own cannot fully account for the evaluation of risk impositions. In isolation, they lack normative force and fail to provide a convincing evaluation of actions that expose others to risk. Moreover, attention will be drawn to the fact that most scholars notably fail to mention virtue-ethical principles in the appraisal of risk impositions. The importance of character and the ability to make good and wise choices under conditions of risk and uncertainty are structurally overlooked. Only a few authors explore a virtue-ethical perspective on exposing others to risk (Luntley 2003; Athanassoulis & Ross 2010, Nihlén Fahlquist & Van de Poel 2012; Nihlén Fahlquist 2015).

The minor attention to virtue ethics in contexts of risk can be explained by the fact that the field of risk ethics tends to have a problematic one-sided focus on actions, their possible or probable outcomes and effects, and their adherence to normative principles. Risk ethics zooms in on the principles determining the moral justifiability of risk-imposing actions (duties, rights, consent, etc.), thereby marginalising the moral justifiability of making decisions to impose a risk on others. Whereas traditional ethics generally has a bias towards determined outcomes, risk ethics generally has a bias towards possible or probable outcomes.

A preoccupation with (determined, probable, or possible) outcomes and effects of risky actions is understandable, since they will or can affect persons exposed to risks. Discussions on risk from other fields such as economics and technology are then almost exclusively outcome-centred. However, such a focus diverts the attention away from the point in time when the decision is made to expose others to risk, and away from the agent – be it one person, a group of people, an institution, an organisation, etc. – that

makes the decision. There is no denying that outcomes and effects will influence the acceptability of a risk imposition. But since they have not materialised yet at the moment of decision-making, they will remain sophisticated guesses and provide insufficient grounds for a substantial ethical evaluation of that decision. It then seems as if risk ethics falls into a similar trap to traditional ethics: making ethical evaluation dependent on outcomes. Evaluating risky actions at the time of decision-making requires an ethical principle that acknowledges the importance of outcomes, but also focuses on decision-making agents, the quality of their judgement, and their reasons for imposing a risk.

This invites the question: is there (a normative theory based on) such a principle? An obvious answer is virtue ethics, and notions of virtue and *phronēsis*, i.e. practically wise decision-making. Another promising candidate is responsibility ethics, and its principle of responsible decision-making. I want to analyse the possibility of making virtuous, practically wise, and responsible decisions with regard to risk impositions by combining the two perspectives. I want to interpret responsibility as a virtue, and explore the contributions of this approach to the evaluation of risk impositions.

Part III: Can a virtue-ethical understanding of responsibility offer a tenable alternative evaluation of risk impositions?

Chapter 8 makes up Part III of the research, in which I explore how one can be responsible, or make responsible decisions, in the face of uncertainty. I propose a marriage between virtue ethics and the notion of responsibility, and argue for an understanding of responsibility as the virtue of answerability. I understand answerability as an interactive process of call and answer, request and response. Answerability as a virtue then originates, and can only exist, in the dialogical exchange between two or more agents.

I claim it is acceptable to expose others to risk if the risk-imposing agent is answerable for his, her, or its actions. This can entail that one is able and willing to provide reasons for one's actions to others: reasons that justify why one chooses to act in a way that involves risk to others. However, answerability is more than a form of rational responsiveness. It also entails having appropriate attitudes and emotions with regard to

situations involving risk or harm to others, such as respect, care, and compassion. Moreover, it entails the ability and willingness to adequately manage such situations, by for example minimising risk, or compensating for harm. But the ethical burden to be answerable in these different ways – rational, attitudinal, and practical – cannot be placed solely on the risk-imposing agent. As mentioned, answerability is an interactive process, and therefore its content has to be determined conversationally.

Building on the findings from Part II, Part III of this research will be dedicated to exploring the ethical foundations of reasons that justify risk impositions, as well as ways in which to respond in an attitudinally appropriate and practically adequate way to situations involving risk or harm to others.

PART I

1. UNDERSTANDING RISK

1.1 Introduction

The aim of the first two chapters is to provide a thorough and comprehensive analysis of the notion of risk from an ethical perspective. The analysis will comprise a critical reflection on the existing literature on risk. In the first chapter the ambiguous meaning of risk is explored, and in the following order attention is paid to: the different definitions of risk; the related difficulty of drafting one sound and inclusive definition; etymologies of risk; the significance of risk in the transition from pre-modern to modern and postmodern times; and conceptions of agency and knowledge as prerequisites for speaking about risk. These endeavours provide a substantial understanding of the notion of risk, which is necessary for any further investigation into the subject.

1.2 Defining risk

1.2.1 Can risk be defined?

It is useful to begin the exploration of any concept with a dictionary definition. The *Cambridge Dictionary* (2016, s. v. 'risk') defines risk as “the possibility of something bad happening [or] something bad that might happen”. Consider the risk of an accident when driving through a thick mist: risk might refer to the possibility of an accident, perhaps even expressed in percentages, or to the accident itself. This is a clear starting point, but as will be discussed in this chapter, risk has many more meanings. When the international Society for Risk Analysis met in 1996 at their annual congress, businessman Stan Kaplan (1997: 407) inauspiciously stated:

Many of you here remember that when our Society for Risk Analysis was brand new, one of the first things it did was to establish a committee to define the word “risk”. This committee labored [*sic*] for 4 years and then gave up, saying in its final report, that maybe it's better not to define risk. Let each author define it in his own way, only please each should explain clearly what way that is.

Twenty years later this battle is still being waged, as the subsequent years have yielded some, but not conclusive, conceptual clarity about risk. It is a common and widely used word, but definitions seem to vary among individual applications, disciplines, situations, and contexts, rendering it ambiguous and inconsistent in character. To illustrate the lack of a generally accepted conceptualisation, let us take a look at some ways in which the different meanings of risk have been explained.

Michael Bollig (2006: 8) argues that risk can refer to different things. It can refer to a hazard, such as lightning or fire; an object or person that might create a hazard, such as a nuclear power plant or a smoker; or a hazardous activity, such as an expedition into a jungle. However, all these things can in fact be classified into Bollig's second category: they are causes of possible harm to people, and things that people value. Lightning constitutes a risk because it can electrocute a person or set a house on fire. A nuclear power plant constitutes a risk because it can explode or leak radiation, which causes sickness in persons as well as harm to the natural environment around it. A jungle expedition constitutes a risk because participants might encounter deadly animals or poisonous plants.

Hansson (2007, 2013) provides a more encompassing list of the different connotations of risk. Firstly, risk can refer to an unwanted event, like bankruptcy or a traffic collision, which may or may not occur. Secondly, it can refer to the cause of a possible but unwanted event, as in the examples mentioned by Bollig. Think of the lack of financial planning as the cause of bankruptcy, or reckless driving as the cause of a traffic collision (and in turn bankruptcy or a traffic collision as the causes of other unwanted things). Thirdly, it can refer to the probability of an unwanted event. Examples are a risk of less than 1 in 1000 that a specific company will go bankrupt, or a risk of approximately 0.095 percent that a teenager is involved in a traffic accident. Fourthly, risk can refer to the expected value of an unwanted event. This is the case when risk is expressed in terms of the expected number of deaths, for example in the hypothetical statement that the expected number of fatalities among South African road users resulting from traffic collisions in a certain year is approximately 17.000. And lastly, risk can refer to the fact that a decision is made under conditions of known probabilities.

This is what distinguishes risk from uncertainty, where there are no probabilities available for expressing possible future outcomes.

1.2.2 *The negative side of risk*

Bollig's mentioning of hazard and Hansson's definition of risk as an unwanted event already point in the direction of the common negative definition of risk. But there is more to risk than the classifications of the two authors. To give substance to this claim, let us take a look at how several distinguished scholars and research institutes have defined risk over the past 25 years.

- "Risk may be defined as a systematic way of dealing with hazards and insecurities induced and introduced by modernization [*sic*] itself. Risks, as opposed to older dangers, are consequences which relate to the threatening force of modernization and to its globalization [*sic*] of doubt" (Beck 1992: 21).
- "Risk is the characteristic of decisions that is defined here as the extent to which there is uncertainty about whether potentially significant and/or disappointing outcomes of decisions will be realized [*sic*]" (Sitkin & Pablo 1992: 10).
- "“Risk” is defined, by most of those who seek to measure it, as the product of the probability and utility of some *future* event" (Adams 1995: 30, original italics).
- "Risk is a situation or event where something of human value (including humans themselves) has been put at stake and where the outcome is uncertain" (Rosa 1998: 28).
- "Risk is widely recognised as a function of the probability and severity of an adverse effect/event occurring to man or the environment following exposure, under defined conditions, to a hazard" (European Commission 2000: 18).
- "[...] risk [...] is increasingly associated with [...] statistical and actuarial technologies and expert advice that render measurable the probabilistic calculation of future harms" (O'Malley 2000: 465).

- “[...] risk is commonly defined as [...] the likelihood of harm occurring in the future” (Webb 2006: 71).
- “[...] the term ‘risk’ denotes the possibility that an undesirable state of reality (adverse effects) may occur as a result of natural events or human activities” (Renn 2008: 21).
- “[...] a risk is the chance, or the probability, of some loss or harm – the chance of mishap. [...] a risk is represented by the probability of a loss or harm times the severity of its outcome” (Cranor 2009: 28).
- “Risk refers to uncertainty about and severity of the events and consequences (or outcomes) of an activity with respect to something that humans value” (Aven & Renn 2009: 6).
- “Risk [...] is not only a matter of decision, but of the predictability of outcomes; taking risks equates to deciding upon the reliability of forecasts, the controllability of events” (Pellizzoni 2010: 464).
- Risk is “The combined answer to three questions that consider (1) what can go wrong, (2) how likely it is, and (3) what its consequences might be” (United States Nuclear Regulatory Commission 2017).

Keywords in these definitions can be divided into five categories: knowledge, human agency, time, evaluation, and technical approach. Firstly, there are words that refer to knowledge, or the lack thereof, with regard to risk: *insecurities*, *doubt*, *uncertain(ty)*, *potentially*, *likelihood* or *likely*, *chance*, and *possibility*. A risk is something that might happen, but there is insufficient knowledge to be certain that it will happen. Secondly, there are words that refer to agency, indicating the active role that humans play with regard to creating and managing risk: *dealing*, *decisions* or *deciding*, *human activities*, and *controllability*. Risk is always related to the choices people make: a risk is either created by persons through their actions, or is manageable by persons through their prioritisations. People create, take, or impose risks when they make choices in situations of uncertainty. Because risk is the result of some choice, action, or omission, the following words are also important in this context: *consequence(s)*, *outcome(s)*, *effect*, *following*, *impact*, *result*, and *causes*. Thirdly, there are words that refer to time, and that relate to the expectation of when risks might become reality: *future*, *prediction*, *forecasts*. Fourthly, there are words that refer to the evaluation of uncertain possibilities or risks: *hazard(s)*, *threatening*, *disappointing*, *at stake*, *adverse*, *harm(s)*, *severity*,

negative, undesirable, loss, mishap, bad, wrong. Important to note here is that this evaluation is always done by humans, since morality is an inherently human endeavour. The negative or undesirable outcome related to risk therefore always occurs to “something of human value (including humans themselves)”, or “with respect to something that humans value”, as Rosa (1998: 28) and Aven and Renn (2009: 6) rightly incorporate into their definitions. Fifthly, there are words that refer to the common technical approach to understanding and dealing with risk: *systematic, measure or measurable, probability or probabilistic, statistical and actuarial technologies, expert advice, calculation or calculating, function or product*. Speaking of risk then entails the subjection of uncertain future outcomes to calculation, measurement, and quantification, and the expression of possibilities in terms of chances, numbers, and probabilities.

Bases on the previous paragraph, the following table gives an overview of the five characteristics of risk, their explanation, indicators, and keywords.

	<u>Characteristic</u>	<u>Explanation</u>	<u>Indicators</u>	<u>Keywords</u>	
1.	Knowledge	Insufficient knowledge, i.e. uncertainty about risk	Insecurity, doubt, uncertainty, chance, potential, possible, likely	Uncertainty	
2.	Human agency	Active role of humans with regard to risk	Dealing, deciding, human activity, controllability	Consequence, outcomes, effect, impact, result	Choice, creation, management
3.	Time	When a risk might realise	Future, prediction, forecasts	Future	
4.	Evaluation	Negative evaluation of possible outcomes	Hazard, threat, disappointment, harm, loss, mishap, negative, undesirable, adverse, severe, bad, wrong, at stake	Possible harms vs. possible benefits	
5.	Technical approach	Risk captures possible outcomes in probability calculations	Measurement, calculation, function, product, probability, statistics, technology, expert	Probability	

Table 1: Overview of five characteristics of risk and their keywords.

The concept of risk has now been broken down into its rudimentary building blocks. These can be put together again to form a more exhaustive definition. A good starting point is the most basic definition of risk as the possibility of something bad, i.e. ‘a possible harm’. Alternatives for this basic definition are ‘a chance of loss’, or “an unwanted event that may or may not occur” (Hansson 2013: 8). Through the notions ‘possible’, ‘chance’, and ‘may or may not’, as well as the notions ‘bad’, ‘harm’, ‘loss’, and ‘unwanted’, these basic definitions capture the characteristics of uncertainty and evaluation respectively. To stress the characteristic of time the basic definition can be extended to ‘a future possible harm’. The characteristic of human agency indicates that risks are always related to the choices people make: their choices either create the risk or influence its management. Incorporating this into the definition results in risk as ‘a future possible harm that is related to human choice’. This suffices as a colloquial definition of risk. In technical terms however, risk means that a future possible harm is expressed in terms of its probability. To involve this characteristic into the definition, a risk is then ‘the probability of a future possible harm that is related to human choice’.

1.2.3 The positive side of risk

In colloquial as well as technical language, risk generally has a negative connotation. In the next chapter I will elaborate further on value judgements in the context of risk, but for now I can state that it is clear that there are many indications that risk-taking is considered condemnable and risk-reduction praiseworthy. Society legislates against risky behaviour with speed limits, alcohol taxes and no-smoking signs; most organisations have risk managers; and citizens protect themselves against all kinds of risk with the aid of vaccinations, burglar alarms, and insurances. Less risk and more safety is the credo many people live by. But risk has an inherently positive side as well. For why would a government allow any transport into their country? Why would a university grant a student a bursary? Why would a patient choose to undergo surgery? There are risks related to all these actions: diseases and criminals could enter the country, the grant could be wasted on a student who fails to deliver, and the patient could die. However, it is the associated potential benefits that make these risks worthwhile: the country could profit from international exchange, the student could make a valuable academic contribution, and the patient could be cured. Risk can therefore not be wholly understood without relating it to benefit.

Some scholars have incorporated benefit as an integral part of risk into their definition. Risk has been described as “expected success or failure” (Cohen & Christensen 1970: 101); “anything that has to do with situations where ‘bad’ (or ‘good’) things may, or may not, happen” (Spiegelhalter 2011: 17); and “an uncertain future outcome that can either improve or worsen our position” (Crickette *et al.* 2012: 2). These definitions hint at a neutral understanding of risk as both a future possible harm *and* a future possible benefit. However, I am convinced that the notion of risk always refers to something undesirable, such as a harm, injury, loss, or death, but that there are situations in which risk-taking or imposing can result in something desirable, such as obtaining a benefit, avoiding danger, preventing harm, and protecting life. Consider driving fast and its associated risks of speed tickets, car crashes, and insurance costs. A person who speeds takes these risks in an attempt to realise benefits, perhaps experiencing a thrill of excitement, or increasing mobility and shortening travel time. But especially in emergency situations driving fast can yield enormous benefits: think of an ambulance driver assisting in saving a patient’s life by speeding. Identifying, accepting, and engaging with risks as future possibilities of harm is therefore not only pleasurable, but often necessary in life (Everitt 2008: 123). I then agree with Anthony Giddens (Giddens & Pierson 1998: 209), who claims that “Essentially, ‘risk’ always has a negative connotation, since it refers to the chance of avoiding an unwanted outcome. But it can quite often be seen in a positive light, in terms of the taking of bold initiatives in the face of a problematic future”. It must be noted that taking or imposing risks to realise benefits can itself increase existing risks or create new risks. Ambulance drivers for example create accident risks for passengers and other road users because of their high travel speed (World Health Organization [*sic*] 2004, 2006).

Taking, running, or imposing risk can have beneficial results in an informal as well as a formal setting. Examples are personal development and business respectively: these are two areas in which the beneficial results of risk are predominant, and which will be discussed in the following paragraphs.

Identity forming and personal development

Risk plays a vital role in early childhood development and identity forming (Little &

Wyver 2008; Wood 2013). Think of how children put things into their mouths, try to walk up straight, come too close to fire, and step onto the street without looking. By confronting dangerous circumstances children develop cognitively, psychologically and physically. It is important for children to be exposed to danger to a certain extent, for danger functions as a foundation for learning. If a baby is obsessively protected from any kind of threat, if a toddler never experiences fear in the face of uncertainty, if a child is not encouraged to sometimes jump into the unknown, new learning will seldom occur. In this context Søren Kierkegaard (2003: 192, original italics) observed: “During the first period of a man’s life the greatest danger is: *not to take the risk*”. But during the first period of a human life, not the child but the parents (or guardians or caretakers) make most decisions with regard to risk. In a standard family setting, an adult decides what a child eats, where it lives, whether it can play near a river, or go outside alone. Adults then take risks of exposing children to risks. Kierkegaard’s observation should then be adjusted to: ‘During the first period of a man’s life the greatest danger is: not to be exposed to risk’. As will be discussed in more detail later, knowledge is a prerequisite for risk and risk-awareness. This means that, in order to assess actions or events as risky for oneself or for others, and to be aware of taking or imposing risks, a person must be able to have some insight into the possible outcomes of those actions or events. In general, children lack the cognitive capacities to have any, or sufficient, insight into the effects of their actions, and therefore they are not risk-conscious. As children develop, they gradually acquire the ability to reflect on their actions and the risks involved. In this development process, the act of consciously taking or imposing risk, as well as the responsibility that accompanies this awareness, is transferred from parent to child. In many countries, when children reach the age of 16, 18, or 21, they are expected to be conscious of risks and are considered responsible for their decisions and actions made with regard to risks (Adams 1985, 1995, 1999). But throughout the process of coming of age, the beneficial potential for learning, developing, and forming an autonomous identity remains. Children should then not be taught to never take risks, but to take risks wisely.

Being able to take risks wisely continues to be important throughout life, from birth till death. As John Adams (1995: 4) argues, not only children, but also “grown-up children [...] go about the business of life – eating, drinking, loving, hating, walking, driving, saving, investing, working, socializing – striving for health, wealth and happiness in a

world they know to be uncertain. The objective of these risk managers is to balance risks and rewards”. Human action will always entail or create risks, and therefore identifying, taking, imposing, and managing risks is a part of life. Risks cannot be avoided, and dealing with them effectively can even yield highly beneficial results. Therefore, one should not aim at completely avoiding or eradicating risk, but at adequately controlling instances of loss while promoting opportunities for gain. As Kierkegaard (2003: 192) continues: “once the risk has been really taken then the greatest danger is to risk too much”. Learning to take risks wisely therefore means learning to choose sensibly between alternative courses of actions, with their associated risks and benefits, available to a person. Life is an act of balance, weighing possibilities of failure against rewards of achievement.

The benefits or gains obtained from risky actions can be practical, such as increasing one’s mobility by taking a plane or earning money through investments. Also, confronting risks has positive effects on personal development in life after childhood. Facing an uncertain world and understanding there is risk in every endeavour can be a very daunting, even paralysing, experience. Acknowledging the possibility of failure but managing to realise the possibility of success can then inspire powerful feelings of being in control. Obvious examples are experiences that are generally thought of as risky, such as adventurous travels, extreme sports, or changing professions. Performing such activities successfully inspires intense emotions of accomplishment, inspiration, flourishing, control, autonomy, authenticity, and selfhood. As Deborah Lupton (2013: 636) remarks, it is about “acknowledging the presence of fear and seeking to exert mastery over this fear”. Because different people experience risk differently, activities that some consider less risky or not risky at all can have different effects on others who do deem them risky. For some speaking in front of an audience is a risk, for others it is petting a dog or asking someone out. All kinds of risks can unleash the positive emotions of mastering risk, and of voluntarily exploring and expanding one’s personal limits. What matters is that the risk-taker perceives something as a risk, and manages to confront it successfully.

So even though risks are undesirable possible events or outcomes, they also provide opportunities for discovering, expressing, and strengthening the self. Moreover, facing risks is necessary for the development of a stable and resilient personality that can cope

with uncertainty, change, and danger. Conscious and wise risk-taking can then have positive effects on personal identity forming and development throughout a human life.

Business and economic development

Also in the more formal context of commerce, industry, and business in general risk can have beneficial corollaries. In a business context, pure risks or threats are even distinguished from business risks or opportunities. A pure risk or threat is a situation that, if it happens, will result in loss. A business risk or opportunity is a situation that, if it happens, can result in both loss and gain (Dobson & Dobson 2011: 102). Pure risks are for example fire in a building, an injured employee, or theft of stock or money: if these events occur and are not adequately dealt with, they signify only loss, harm or hindrance. Business risks have a potential upside, for they can have not only negative, but also positive effects on a business endeavour. Think of using new software in a company or materials in a production process, investing in the training of employees, or switching to new suppliers: such actions could turn out to be merely a waste of time or money, but could also significantly help a business project forward or succeed.

The positive character of business risks lies in understanding these kinds of risks as bets: “bets can be used to speculate [...], to try to earn a profit from predicting future events better than others can” (Stout 2011: 6). The story of John D. Rockefeller, allegedly the wealthiest and most successful businessman of all time, is a schoolbook example of how predicting the future successfully can yield enormous profits in terms of money, time, and reputation. In the fledging American oil industry of the second half of the 19th century, in which every business was just prospecting for crude oil, Rockefeller invested in oil refinement into kerosene. He based this decision on his identification of a great need for a cheap and general-purpose burning fuel that could be used in lamps. His prediction turned out to be correct, and after a couple of years Rockefeller’s kerosene was used to light up almost every household in America (Chernow 2004). He also bought into the construction and control of railways in order to fix transport costs and to extract huge discounts for his own company (Fridson 2001). Moreover, he invested in research on how to use, instead of discard, the by-products of the refining process. His company ended up producing lubricants, grease, paint, and petroleum next to kerosene, and made money out of waste. This innovative initiative

formed the forerunner of the ‘research and development’ branch of many present-day businesses (Beattie 2017). These strategically brilliant moves cannot simply be conceived as matters of luck: through careful planning and foresight Rockefeller indeed predicted the future to a certain extent, and made unbelievable profit out of betting on his expectations.

Rockefeller continues to set an example for managing risk in all areas of business. In such contexts, the focus is so strongly on the beneficial potential of risk, that taking extreme risks is often considered justified and even praiseworthy. However, his success was not ensured by merely taking big risks, but by adequately managing them. He for example thought drilling for oil was an unpredictable and wasteful practice, and too much of a gamble: “he believes that while gamblers drill for oil, businessmen refine it” (History 2012, Rockefeller’s Standard Oil: 1:30 min.). Rockefeller clearly saw the difference between pure risks and business risks: he therefore did not blindly bet on the former, but insightfully saw opportunities in the latter. The importance of risk management is not only widely recognised for individual businesses, but also for the general economic and social development of countries. It is for example the topic of the 2014 World Development Report issued by the World Bank, titled *Risk and Opportunity: Managing Risks for Development*. The main message of this report is that economic and social risks should not be avoided, but managed adequately in order to unleash new opportunities, foster resilience in the face of adverse consequences, enable progress, achieve prosperity, and further development in all areas of society (World Bank 2014).⁵ Consider the process of urbanisation in a rural setting. This is associated with risks such as the spread of diseases, social unrest, and environmental damage, but if a government manages this change adequately it can also bring opportunities for a faster growing and more innovative economy, job creation, and declining poverty.

Risk then has a dual significance: it refers to something undesirable but entails the possibility of something desirable. An investigation into the history of the word might illuminate how this dual meaning came about.

⁵ The Better Regulation Commission made a similar point in its 2006 advisory report to the UK government, titled *Risk, Responsibility and Regulation - Whose risk is it anyway?*

1.2.4 Etymology

There is a great deal of scholarly disagreement on the origin of the word risk. Some argue it only came into use in the 16th century and had no root in any European language (Luhmann 1996). Others claim it has an older Greek and Latin origin (Cline 2004). But the most plausible theory traces the origin of the word back to the Arabic language in Antiquity. The root of the word consists of the consonants r-z-q, and by adding vowels one forms a verb and a noun. The verb رَزَقَ or *razaqa* means “to provide with the means of sustenance, to bestow upon someone material or spiritual possessions, to endow someone, to bless someone” (Siddiqui 2010: 197). By adding a different vowel, the noun رِزْقُ or *rizq* is formed, which means “provision, livelihood, nourishment, possessions, wealth, and fortune” (*ibid.*). In its original use *rizq* could have as many as four meanings. Firstly, it could mean ‘bread’, having the literal connotation of practical nourishment. Secondly it could be understood in a more figurative sense as ‘daily provision or sustenance’, indicating a person’s income or salary (Éntrelle 2008: 62). This could be related to the fact that Arab troops used to get paid with grain, i.e. bread (Oxford English Dictionary 2014, s. v. ‘risk’). Thirdly and more generally it could mean prosperity, wealth, or fortune (Allen 2009; Siddiqui 2010). Fourthly, it could be used in a religious context to refer to a “fortuitous and unexpected gift (from God)” (Mercantini 2015: 3). When one moves up the ladder of abstraction one sees that bread in a sense is a metaphor for actual or religious wealth. In any case, *rizq* in its original use meant something from which a person profits or obtains advantage (Oxford English Dictionary 2014, s. v. ‘risk’).

When the word found its way into European languages at the end of the Middle Ages, approximately from the 12th century onwards, it lost its positive connotations of actual sustenance or prosperity, and came to refer predominantly to the loss of current or future wealth (Wilkinson 2001; Wilson & Rahman 2014). The meaning of risk became mainly nautical, as variations of the word were used in maritime contexts of seafaring, trading, transporting, and insuring merchandise and vessels. The loss of wealth denoted by risk was then primarily related to encountering dangers at sea and losing one’s possessions (Giddens 1993; Luhmann 1993, 1996; Hacking 2003). The Greek word ρίζικον or *rhizikon* came from ρίζα or *rhiza* and was Latinised into *risicum*. In the 13th and 14th centuries the Latin word transformed into the Italian *risco*, *rischo*, *rischio*, or

risico, the Old Occitan *rezegue*, the Catalan *risc*, and the Spanish *riesgo*, followed in the 15th and 16th centuries by the Portuguese *risco*, the Middle French *risicq*, and the Dutch *risico* (Diez 1853: 291; Skeat 1888: 512; Aven 2014: 21). Meanings such as root, underwater rock, abrupt rock, reef, crag, ledge, ridge, or steep cliff have been mentioned. The original Latin word *risicum* can be traced back to *resecāre*, meaning ‘that which has been cut off’ or ‘the one that cuts’. Seafarers used variations of the word as navigation terms that designated something that was cut off from the mainland, like a rock, reef, or cliff, and which could literally cut into the hull of ships. These were metaphors for dangers or difficulties to be avoided at sea. The words signified possible damage, harm, danger, or unpleasant consequences due to unpredictable circumstances or uncertain situations, most importantly the possibility of damage to or loss of merchandise that was transported by sea (Diez 1853; Skeat 1888; Helten 1994; Liuzzo *et al.* 2014; Aven 2014). Because damage to or loss of merchandise equalled financial loss for persons involved in sea trade, risk acquired a financial connotation related to maritime insurance policies.

As the venture of transporting goods by sea was inherently perilous, the predominantly negative meaning of risk solidified. But the word continued to have an ambiguous character. If the venture of transporting goods was successful, they could be sold or traded and turned into profits. Risk therefore signified both the potential for loss and gain. This dual connotation is the most apparent in the words that originated in the 16th and 17th centuries, the Middle High German *Rysigo* and the French *risque*: in these languages, risk not only signified harm or danger, but also entailed a sense of attempt, trial, undertaking, daring, chance, and adventure (Cline 2004).⁶ In later use, the word lost its connection with nautical contexts. However, the maritime history of the word explains why risk is currently understood as something inherently negative, but risk-taking as potentially positive.⁷ To transport one’s goods by sea was both a dangerous

⁶ It must be noted that Preston Cline (2004) traces the word back to different lexical roots. He claims the origin of risk lies in the Greek verb *πειραο* or *peirao*, which is defined as to attempt, endeavour, trial, try one’s fortune, or make an attempt by sea. When Greek words were translated into Latin, *peirao* became *periculum*, retaining a connotation of attempt and trial, but also of danger and peril. *Periculum* then evolved into *resicum* or *risicum* around the 14th century, not only defined as danger or hazard, but also as (ad)venture or crisis. Both crisis and venture originally denoted a bold choice made in the face of uncertainty, and Cline’s research into risk’s medieval significance then incorporates notions of decision, attempt, uncertainty, fortune, and danger. His etymology also explains the positive–negative ambiguity in the connotation of risk.

⁷ I am indebted to Andrea Hurst for pointing out that my discussion, and understanding, of the risk concept is overall slanted towards a negative interpretation, i.e. in terms of possible harm. My reason for

and courageous endeavour: it was a daring choice made under uncertain circumstances. The word risk retained the meaning of something that has to be simultaneously avoided and pursued.

Here an important alternative to the presented etymology has to be mentioned. Eiríkr Magnússon (1874) refutes other etymological origins, and through the suffix –sk he traces the roots of risk back to the Icelandic verb *ráða* and its reflexive variant *ráðask*, which mostly have military connotations. The former means to counsel, and the latter means “to counsel one’s self, to make up one’s mind, to betake one’s self, to venture, to risk. [...] to risk a charge, to attack on the enemy, [...] to counsel one’s self on (against) the enemy” (1874: 285). He claims the word found its way into Romance languages when seafaring people from the North, i.e. the present-day Iceland, Norway, Sweden, and Denmark, plundered the coasts of nations around the Mediterranean Sea, but also took land and settled there. To attack an enemy obviously entails the possibility of victory, increasing power, and accumulating wealth, but also the possibility of defeat, loss of influence and fortune, and even death. Magnússon’s etymology therefore also explains the dual connotation of risk. It signifies loss, but adequately responding to and managing risk can have beneficial consequences.⁸

1.2.5 Modernity

It is not surprising that most of the lexical changes described in the above took place in the last phase of the Middle Ages, when traditional European societies entered the early modern period. Explorers, merchants, and other adventurers set out to broaden their

foregrounding harm in my conceptualisation of risk – and not benefit, or the double nature of risk – is because not all risks contain an element of benefit. Consider a driver who all of a sudden experiences an uncontrollable cramp in his leg, steps on the gas, and is unable to change the position of his foot on the accelerator. He now exposes other road users to an increased risk of an accident, without being in a position to benefit from that exposure. Risky actions are then always possibly harmful, but only sometimes possibly beneficial.

⁸ The fact that my analysis of risk is Eurocentric can be explained by the Indo-European roots of the English word. Moreover, definitions and etymologies of words that signify risk in other language families have not been researched extensively. There is therefore no other academic literature available other than a Eurocentric one to explain the subtleties of the risk concept. Moreover, apart from the lack of academic sources, in my own preliminary research I found for example no dual connotation in some African languages. Risk-related terms mostly refer to danger, hazard, or threat: the Zulu *ngozi* means risk, danger, accident, injury, or catastrophe; the Yoruba *ewu* means risk, danger, or havoc; the Sesotho *kotsi* means risk, exposure to danger, or accident; the Somali *khatarta* means risk or threat. I only found a dual connotation in two Swahili words. *Hatari* means danger, but can also be used to describe something good, talented, or beautiful, such as a seductive or attractive girl (Landesman 2004: 135). *Riziki* means livelihood, derived from its Arabic origin (Kitula King’ei 1992: 95).

horizons and discover the world by crossing unknown or unpredictable seas. They could use a term like risk while discussing and arranging expeditions and business ventures (Luhmann 1996: 3; Hacking 2003: 25). But apart from its practical relevance the word also has a more emblematic meaning, which captures the dramatic change in how people in Europe in the early modern period of transition and transformation understood themselves and their place in the world.

Human beings had always lived with and responded to dangers, opportunities, and uncertainty in the world around them. They have always made plans and acted purposefully in order to realise those plans in a future time. Because the chance of failure is an inescapable corollary of purposeful action, human beings have always engaged with risk. Moreover, attempts at predicting and controlling the future and anticipated possibilities of harm and benefit are also as old as humankind (Garland 2003). Historical records of fortune-tellers, oracles, and prophecies, of rituals and sacrifices aimed at securing a desirable future, and of discovered patterns and cycles in seasons and other events support this claim.

But in a traditional European context, confronting and trying to master risk was done within the religious or spiritual confinements of fate, destiny, and predestination. People had limited choices with regard to the course of their lives, and most future successes and adversities were ascribed to God, the goddess Fortuna, Nature, or other authorities (Giddens 1990; Luhmann 1996; Cline 2004). With overseas trade and exploration, the need for understanding, forecasting, and managing future events intensified enormously. This encouraged the realisation in the 16th century, the heyday of the transition from traditional or pre-modern to modern times, that unanticipated results could not merely be the result of spiritual powers: human beings themselves had to be able to create and influence future outcomes through their own choices and actions (Bernstein 1996; Hacking 2003; Bollig 2006). Moreover, the human capacities to know, forecast, influence, and even control the future have in fact been revolutionised since the beginning of the modern time period through the discovery and development of probability theory. David Garland (2003: 72) writes: “What distinguishes modern society from its predecessors is not the attempt to master risk and to colonize [*sic*] the future, but the invention and widespread adoption of rational, systematic methods for formally and effectively doing so”. Human agency, with its related notions of choice,

influence, and control, as well as knowledge about an uncertain future through foresight, prudence, prediction and probability, are therefore of paramount importance for understanding risk, and will be discussed further in the next sections.

Since the transition from traditional to modern times, conscious dealings with risk obtained a central place in human existence. Many scholars, mainly sociologists, have supported the claim that in a subsequent societal transitional period, from modernity to postmodernity, the awareness of risk in everyday life has increased even more: developed societies have been denoted ‘risk societies’, in which the central organising social principle is the control over, and management of, risk (Giddens 1990; Beck 1992; Lupton 1999b; Fox 2000). In the context of the relation between risk and modernity, many claims have been made: that modern, but especially postmodern individuals live and act in a context of risk; that risks today are different from dangers in pre-modern times and that their nature changes constantly; and that the amount of risk is growing exponentially. It is outside the scope and intent of this research to delve much deeper into all these claims, but in the next section a beginning will be made by investigating the transformation of human agency since modern times.

At the basis of the abovementioned claims lies the argument that risk has become an increasingly central notion in modernity and postmodernity. This is illustrated by the fact that the word risk is being used more often than the words threat, danger, or hazard (Lupton 1999b: 9 – 10). A chart from the Google Ngram Viewer supports this. Ngram Viewer is a graphing tool developed by Google that searches through more than 5.2 million books digitalised by Google up to 2008 for selected n-grams, i.e. combinations of letters. It displays these n-grams in a chart in terms of use per year, and such charts give an overview of how many times certain words have been recorded over the years. The following n-gram shows the use of the words risk, threat, danger, and hazard between 1900 and 2008 in the corpus of English books digitalised by Google. While the use of the last three words slowly increases, stagnates, or even declines, the use of the word risk increases (much more).⁹

⁹ An ngram can obviously not provide proof, but is merely an illustration and partially representation at most, for it only displays uses of letter combinations recorded in books that Google digitalised. However, it offers an interesting visualisation of the main claim, namely, that risk has become an increasingly central notion in modernity and postmodernity.

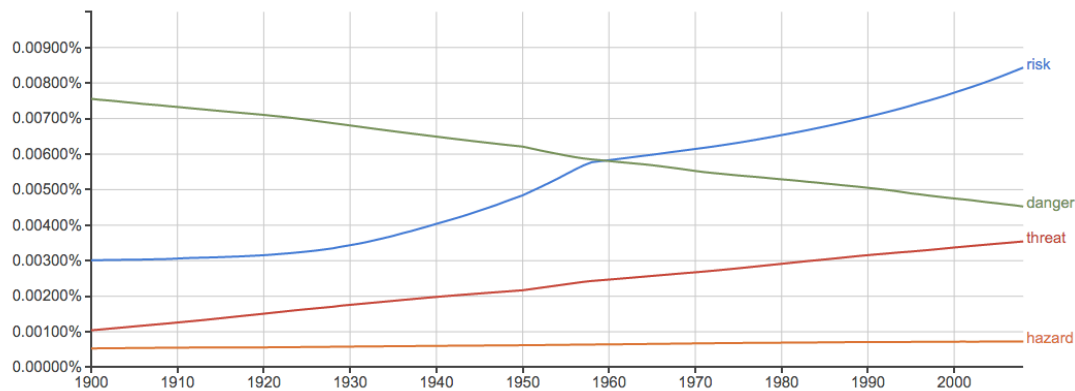


Figure 1: Ngram chart of risk, threat, danger, and hazard [Google Ngram Viewer 28 March 2016].

1.2.6 Concluding remarks

I started this section by breaking down the definition of risk into five characteristic aspects: knowledge, human agency, time, evaluation, and technical approach. I then built up a definition of risk that reflects these characteristics: a risk is a future possible harm that is related to human choice, or the probability of that harm. I nuanced this predominantly negative definition of risk by noting that even though risk mostly signifies something negative, it also has a potential positive connotation. This claim was supported by examples from personal development and identity forming of children and adults, and by examples from business contexts and economic development. The ambiguous meaning of risk was then further investigated by looking at the etymology of the word. The historical analysis showed that the first lexical ancestor of risk, the Arabic *rizq*, had a solely positive meaning of provision or fortune. When the word was adopted into Romance languages it referred negatively to the loss of wealth. Along the way risk came to signify a future possible loss or harm, but the positive connotation was preserved in the potential advantage of risk-taking, imposition, and management. The realisation that, by taking, imposing, and managing risks, human beings can create and control future outcomes themselves, instead of being surrendered to a higher authority, is a product of modern thinking. Risk therefore symbolises a fundamental change in how people perceive their personal influence on and knowledge about the future.

1.3 Agency

In the transition from pre-modern to modern times, spiritual authorities and the ideas of fate and predestination lost their monopoly on the future. As a result, human beings had

“no choice but to make choices about their self-identity, their relations with others and about how to plan and live their lives” (Ekberg 2007: 347). People took over the responsibility of shaping their own destiny. In later definitions of risk nouns such as attempt, trial, and adventure, and verbs like to undertake, to dare, and to chance, introduce elements of human agency and choice. These notions will be discussed in this section, as will the extent to which human beings can influence and control the consequences of their choices and actions.

1.3.1 The capacity of choice

Many things changed in the aforementioned transitional period, including the conceptions of choice itself. Zygmunt Bauman (1993) argues that in a traditional Western or European context choice was something condemnable. The laws of God and the Christian religion were paramount. Following His laws and living one’s life in accordance to His will were the right things to do. The content of the good was self-evident, fixed, and non-negotiable. There was no choice involved in doing the right thing: this was to avoid choice and conform to, and comply with, the customary way of life. Choosing was considered synonymous with straying away from, or breaching, God’s commandments, and pre-modern persons could then only exercise their decision-making capacity by making wrong choices. The biblical story of Adam and Eve, and their decision to eat fruit from the tree of knowledge, is an archetypical example of the pre-modern religious perspective on choice: choice misleads people and plunges them into a life of sin, danger, and anxiety. As the importance of this perspective gradually declined in increasingly secularised modern societies, the content of the good was no longer given but had to be chosen just like the content of the bad. A good life was now not only the life lived according to religious rules, but could be lived in many different ways. Now choice could also be exercised for the good, i.e. to make right decisions, and as a result the conception of choice changed dramatically (Bauman 1993).

Making choices necessarily involves taking risks, and taking risks means acting in a context of uncertainty. Imagine Samuel: he is standing on a ten-metre-high bridge while his friends are swimming in the water below. He is aware of the fact he might harm himself if he jumps from the bridge into the water: he could land awkwardly, or there could be rocks in the water. If he nevertheless chooses to jump, “risk implies the

voluntary taking of a dangerous chance [he jumped at the *risk* of his life]” (Webster’s New World College Dictionary 1989, s. v. ‘risk’, original italics). Voluntary risks are the risks a person takes knowingly, or that one willingly exposes oneself to, assuming that one understands the dangers involved. Examples are the risks involved in flying, climbing a ladder, or eating junk food. Involuntary risks are the risks that are imposed on a person without the consent of that person: examples are the risks of getting mugged, breathing in polluted air, or passive smoking. The element of choice is obviously present in actions of voluntary risk-taking or risk exposure, such as Samuel jumping off the bridge. But choice can also be present in cases of involuntary risk imposition. Consider Samuel’s friends swimming in the water below the bridge. By jumping, Samuel imposes a risk of harm on his friends, as he might land on top of one of them. Even though the friends have no choice with regard to the occurrence of the risk, for Samuel chooses whether or not to jump, they have a choice with regard to their exposure to the risk. If they identify the risk they can model their behaviour in response to it: by swimming away they could mitigate their exposure to the possibility of harm.

It is important not to overestimate the extent of personal choice in the context of risk, and to be precise about determining the locus of choice and responsibility. Consider the involuntary risk of a break-in. In the face of this risk a homeowner is not completely passive: he can make sure not to leave valuable things in sight, organise a neighbourhood watch, get a dog, install an anti-burglar alarm or a CCTV-camera, or even move to a safer area. These choices mitigate one’s exposure to risk, and can significantly lower the probability of a break-in. If one fails to act in such ways, does that mean that one contributes to the risk of a break-in, or even consents to it? Can making the wrong choices turn an involuntary risk imposition into a voluntary act of risk-taking? One should be cautious not to take the presence of individual choice in relation to risk to extremes, but understand it as being context-specific: it depends on the alternatives available to a person, and what choices he or she can be reasonably expected to make. Someone who is well off might be in the position to purchase anti-burglar devices, whilst a less fortunate person lacks the means to do so.¹⁰ In the context of exposure to crime, choice is then present to varying degrees on a personal level. However, on a community level, other entities can be said to have a choice. The

¹⁰ Someone who is well off might also have more (material) possessions to protect, and might therefore also have a stronger need of protection tools.

government, police forces, and social workers are in a better position to mitigate citizens' exposure to crime: they bear a greater part of the burden of choice with regard to the existence and management of crime. This element of choice characterises involuntary exposure as risk, not danger.

Danger is often used as a synonym for risk. Consider the following dictionary definitions: danger is “the possibility of harm or death to someone; the possibility that something bad will happen; something or someone that may harm you” (Cambridge Dictionary 2016, s. v. ‘danger’); risk is “the possibility of something bad happening [or] something bad that might happen” (Cambridge Dictionary 2016, s. v. ‘risk’). Even though the meanings of both words share the element of potential harm, or the possibility of something bad happening, they do not have exactly similar significations. Niklas Luhmann (1993) proposes to differentiate between risks and dangers on the basis of decision: he argues that only if the possibility of a negative event is linked to a choice one should call it risk, otherwise one can only speak of danger. Elísio Macamo (2012: 267) makes a similar point when he states that “Hazard refers to phenomena which occur without conscious human agency, whereas risk involves a decision on the part of social actors”. The risks of radiation from cell phones, driving a car, or eating genetically manipulated food are obvious examples of manufactured risks, i.e. risks that are created by humans. But evidently not every risk finds its origin in human choices. Consider the risks of natural disasters and contagious diseases: earthquakes and tsunamis occur, and bacteria and viruses exist in the world independent of human interventions. If one follows Luhmann and Macamo in their claim that risks are negative events whose occurrence is related to human choices, natural disasters and diseases cannot be considered risks.

I however argue that even though the occurrence of natural disasters or diseases is beyond the scope of human influence, there is again an element of choice present in the level of exposure to, and management of, them. This element of choice can be found at different levels of agency. Individuals could for example decide against living in an earthquake-prone area or they could choose to be vaccinated. Construction companies could insist on building earthquake-proof buildings and health care organisations could participate in providing medical aid. Local and international governments can prioritise, subsidise, or sponsor safe building practices and health care programs. In the context of

natural hazards or diseases human choice influences the extent to which persons expose themselves or others to risk. Choice then differentiates dangers from some risk, but where only some risks are the direct consequence of decisions, all risks are at least potentially manageable (Bollig 2006: 7). Again, different people might have different alternatives available to them when it comes to mitigating their risk exposure, and for some people natural hazards or diseases are more dangers than they are risks. But according to the terminology presented here, the fact that they are potentially manageable – perhaps not by those exposed but by others agents – qualifies them as risks. If there is no element of choice in the creation or occurrence of risk, in the exposure or response to risk, or in the control or management of risk, and every stakeholder is truly passive in the face of it, such a potential harm constitutes a danger, not a risk.

1.3.2 The extent of influence and control

Risk then refers to all possibilities of loss that human beings either bring about or can manage in some way or another. Something that is a danger for one person can be a manageable risk for another. This invites the question of how power relations are distributed. Who is in the position to make choices about risk creation or management? And who has the information and the capacities to assess, impose, or react to risks? But also, does this make the term danger superfluous? The discovery and widespread implementation of statistical techniques have enabled people to rationally and systematically predict the future (Garland 2003: 72). Modern scientific and technological developments enable people to increasingly influence and manipulate the outcomes of their actions. With the human endeavour to understand and control the state of the world in mind, Luigi Pellizzoni (2005: 570) argues, “as we attempt to extend our control over nature (and society), we transform dangers into risks”. By drawing the world into the human sphere of influence, facts are turned into choices and thus dangers, threats, or hazards into risks. Examples of this change are artificial human enhancement technologies, such as gene therapy and embryo selection, which aim at “temporarily or permanently overcoming current limitations of the human body” (Nouvel 2015: 103). However, modifications to the human body can have risky side-effects, and such new risks seem to be the price of progress. But then again, because almost every activity is conceived as entailing a decision on some level of agency, most

potentially harmful outcomes are considered potentially controllable or manageable. This explains why the concept of being at risk is used to refer to health threats, technological hazards, governmental distrust, and societal fears (Wilkinson 2001: 6). It also explains why risk management is such a buzzword in today's world.

This development is not so surprising if one considers that since the Industrial Revolution the human capacity to have an effect on the state of the world and on other people has changed fundamentally. Many risks today are therefore no longer merely external to human beings or by-products of the way in which they are subjected to nature, but are manufactured or created by humans. One can think of big risks such as nuclear wars or ecological disasters, but also of everyday risks such as the risks involved in drinking soft drinks or taking medicines. Scientific knowledge and technological power might make human lives easier, more comfortable, even better. But they also carry the potential for unwanted side effects and repercussions, for example the unforeseen negative health effects of medicines. They also entail new possibilities for misuse of that knowledge and power: consider the fact that cyber wars would never have been a real threat if the internet had never been invented, or creating 'designer babies' would never have been an issue if gene selection was not scientifically possible. New risks are "the inevitable price of the benefits of progress in an advanced industrial society" (Bazon 1979: 1066).

Even though human influence on the world and the future is increasing, i.e. risk creation, human control does not necessarily increase with it, i.e. risk management. This is the result of the fact that the temporal and geographical scope of human actions and their consequences continues to widen. And as interconnectedness and interdependency between people intensifies, the world becomes ever more complex. Consider for example the seemingly simple act of constructing a building in a city. To come from an initial design to an actual building, a complex array of multiple production chains, transport and delivery services, safety and quality standards, materials from different parts of the world, engineers and builders have to be brought together and managed. In such complex and interdependent contexts, it can be difficult, even impossible, to foresee and control all the consequences of human actions. This is complicated by the fact that one mistake, however small, can have a vast impact and far reaching consequences in interconnected systems. A prime example is the 2008 economic crisis,

when a crash in one sector led to multiple others through a domino effect that eventually led to a breakdown of the whole system. Moreover, consequences might lie so far in the future that one cannot envision how a present risk will then be perceived. Consider the storage of nuclear waste and an inevitable leak: people in future times and places will be exposed to these negative consequences, but in present times one does not know how they will be affected and whether they will be able to deal with such risks.

Negotiating the future in term of risk implies “a willingness to place trust in the powers of reason and a confidence in our technological mastery of nature” (Wilkinson 2001: 5). In the '70's of the last century however, Hans Jonas (1979, 1984) already warned against the uncontained extension of the human sphere of influence through technological developments and practices. To think that people can completely control the outcomes of their actions and shape the state of the world by means of technology exhibits an attitude of hubris and recklessness.

1.3.3 To live is to confront risks

In this section I have discussed the importance of human agency in the context of risk. I found that if human beings are completely passive in the face of possible harms, they cannot be called risks but should be considered dangers. One can speak of risks when on some level of human agency there is an individual or collective agent with some influence on the possible harm. This influence can entail either the capacity to create the risk, or manage it. The human capacity to create risks has increased since the Industrial Revolution: risks related to nuclear power, radiation from technical devices, genetic modification, cyber space, and modern transport and medicine are examples of risks that are manufactured through human intervention. The human capacity to influence the future and control risks has also increased, mainly through scientific knowledge, technological power, and the invention and development of mathematical and statistical forecasting techniques. However, increasing interconnectedness and interdependency between people results in a growing complexity in the world, and this complicates the human capacity to predict and control the consequences of their choices and actions. Human agency then seems to create risks, but also problematises the possibility of managing them.

I also critiqued the idea of ultimate control over uncertainty: there will always be an element of uncertainty and indeterminacy in human life. If the future were certain, there would be no need for judgement or to make choices. When making choices in the face of uncertainty, one also faces the possibility of loss, harm, or failure. To live is to make choices, and to make choices is to confront risks.

1.4 Knowledge

Another prerequisite for speaking about risks is the human ability to know about risks. To know about risks means to anticipate and foresee what could happen, to predict the future to a certain extent, to be not completely ignorant or uncertain about the consequences of one's own actions or those of others. This section will focus on the background and importance of these notions.

1.4.1 Foresight and prudence

In order to make good choices in one's personal dealings with risk and uncertainty, and to not succumb to randomness and trivialities, one must be able to have some insight into how one's action will unfold in the future. This capacity of foresight is captured by the ancient virtue of *prudentia*, which derives from the Latin *pro-uidere* or *providere*: seeing before, or seeing ahead (Santangelo 2013: 57). An instructive definition of *prudentia* is provided by Cicero (1949: 159 – 160):

Wisdom [*prudentia*] is the knowledge of what is good, what is bad, and what is neither good nor bad. Its parts are memory, intelligence and foresight. Memory is the faculty by which the mind recalls what has happened. Intelligence is the faculty by which it ascertains what is. Foresight is the faculty by which it is seen that something is going to occur before it occurs.

According to this definition, *prudentia* entails more than foresight: hindsight and understanding of the present are also important. A prudent person then has knowledge about the past, present, and future.

In Cicero's time, the future was the realm of deities and religious authorities. To "see something is going to occur before it occurs" (*ibid.*) then meant reading the plans of the gods, making appropriate religious choices in an attempt to appease the gods, and alter or positively influence their plans. However, prudent action was seen as strictly opposed to divination, or the prediction of the future through spiritual signs and rituals. Prudence was the ability to make intelligent, sensible, and informed decisions by being aware of one's own actions and foreseeing their possible consequences (Santangelo 2013: 56–68). Risking an anachronistic comparison, the Greek philosopher Thales of Miletus could be described as prudent. He foresaw that the olive harvest of a particular year would be bountiful. For a small deposit, he secured the use of all olive presses in the area nine months before the harvest, and when his prediction turned out to be correct, sold his claims to use the presses against great profits (Aristotle 2013: 20).

However, Thales was said to have made his prediction on the basis of his knowledge of astronomy, and in Ancient Greece astronomy was strongly connected to the gods: the planets, stars, and constellations had mythological significance (Seznec 1981: 38). For centuries, predicting the future and making prudent choices, either through astronomy or other intellectual activities, retained a connection with the divine. Much later, in the emerging commercial societies of 16th century Europe, prudence lost its godly relation to destiny and became more strongly connected to reason. It now was the capacity to choose wisely between alternatives that can be reasonably expected and that are contingent on the choices of others (Luhmann 1996; Aradau & Munster 2007). The focus shifted predominantly to the ability to know and predict the future on worldly grounds, as prudence was "the moral duty of attending to the future, of saving for a rainy day, the virtue of foresight" (Hacking 2003: 25 – 26).

1.4.2 Prediction and probability

Predicting the future and making prudent choices was eased by an important development that fundamentally shaped the understanding of risk today: the invention and widespread application of probability. Probability is the measure of likeliness that a certain event will occur, and as such it is the quantitative or numerical expression of chance. Moreover, "Probabilities are epistemic facts. They describe what is known or knowable about future consequences as of the particular point in the life of a (potential)

action at which we assess them” (Fried 2012b: 52). Even though ideas of likeliness and chance were already used in earlier times, the quantification of these ideas only became properly established in the 17th century, when scientists and mathematicians Blaise Pascal and Pierre de Fermat discussed how to divide the stakes in a game of chance that was suddenly interrupted (Gigerenzer *et al.* 1989; Bernstein 1996; Hacking 2003; Everitt 2006). By studying chance as a mathematical subject, they quantified possible future outcomes, and as such possibilities became probabilities. Probability is a tool that enables one to predict the future by estimating the likeliness of alternative outcomes, under the basic assumption that historical and present events determine the future to a certain extent. Consider the statement that the lifetime risk of cancer for British people born after 1960 is larger than 50%, meaning that at least 1 in 2 persons in the UK will in the course of their lives be diagnosed with some form of cancer (Ahmad, Ormiston-Smith & Sasieni 2015). This future risk is presented as a probability estimate, i.e. 50% or 1 in 2, which is based on prior and present evidence of cancer in the UK population.

Recall that Hansson (2013) defines risk as an unwanted event; the cause of an unwanted event; the probability of an unwanted event; the expectation value of an unwanted event; and the fact that a decision is made under conditions of known probabilities. These definitions can now be divided into different understandings. The first two definitions are part of a colloquial understanding of risk: the possibility of an unwanted event. The last three definitions are part of a technical understanding: the probability of an unwanted event. The technical understanding of risk as probability of harm, or another unwanted outcome, has become widely used in disciplines and systems of decision-making and risk-management, such as probabilistic risk analysis and cost-benefit analysis. In these and other contexts risk is often defined as probability times severity of consequences (Adams 1995; European Commission 2000; Institute of Risk Management 2002; Cranor 2009).

It is also generally accepted that the potential to assign probability estimates to possible outcomes is what distinguishes decisions made under risk from decisions made with certainty or under uncertainty (Luce & Raiffa 1957). When a decision is made with certainty, one is sure that an action will lead to a specific outcome. When a decision is made under uncertainty, one might or might not know the possible outcomes of an action, but in any case, the probabilities of these outcomes are unknown or cannot be

meaningfully estimated. When a decision is made under risk, one might not know what the outcome will be, but one knows the range of possible outcomes and the distribution of their probabilities. This means that to understand risk in terms of probability is to assume that adverse causes and effects, or events and their possible negative consequences, can be known in advance, and are objectively quantifiable (Slovic 2000).

But to what extent can people know the possible consequences of their actions, and to what extent do history and present determine the future? How can one be certain of having taken all relevant possibilities into account, which is necessary to calculate their probability correctly? If there is uncertainty about the validity of probabilities, should decision-makers and risk-managers venture to reason upon them? As the French mathematician Henri Poincaré (1952 [1905]: 184) said more than a century ago: “The very name of the calculus of probabilities is a paradox. Probability as opposed to certainty is what one does not know, and how can we calculate the unknown?” Even though probability calculus has developed tremendously since Poincaré, his question is still relevant. In this context, a statement made in 2002 by Donald Rumsfeld, the former US Secretary of Defence, is illuminating. In reply to a question about there being insufficient evidence to hold the government of Iraq responsible for supplying weapons of mass destruction to terrorists, he stated:

Reports that say that something hasn't happened are always interesting to me, because as we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns – the ones we don't know we don't know. (Rumsfeld in Couto 2010: 956)

‘Known knowns’ are events that have already occurred or are certain to happen in the future. ‘Known unknowns’ are risks, identified possibilities with known probabilities, i.e. the calculated, or calculable, unknown. ‘Unknown unknowns’ are surprises, or possible events of which one is ignorant until they occur.

The relevancy of Poincaré’s question lies in the practical irrelevancy of probability estimates for general decision-making. In order to determine the probability of a certain

event or outcome, one must know the set of possible alternatives of which it forms a part. For such a list to be available and for a probability estimate to truly represent the likeliness of an outcome, one has to think through every possibility that might happen. For an average layperson in a complex and interconnected reality this is close to impossible, and one can question whether humans have the practical ability to adequately estimate the probabilities of possible outcomes. Standard probability theory assumes that human beings are rational, objective, and calculating decision-makers, but in fact most people do not involve probabilities in their decisions (Douglas & Wildavsky 1983). Psychologist and Nobel Prize winner Daniel Kahneman (2011) argues that the human mind makes decisions and judgments based on known knowns: things it has previously observed, identified, and dealt with. The mind rarely pays attention to known unknowns, risks, or probabilities. The average mind might know these phenomena to be relevant, but it is not a good judge of rational calculations and therefore chooses to ignore them. Moreover, the mind appears ignorant or completely oblivious about the possibility of surprises, unknown unknowns, or unknown possibilities with unknown relevance. Kahneman calls this the ‘What You See Is All There Is’ mental bias (Kahneman 2011; see also Taleb 2007).

The mathematical perspective of probability theory has come to dominate approaches to risk. Dealings with risk based on trust, emotion, intuition, or fate, are often dismissed as unfounded, irrational, superstitious, and plainly false. It cannot be denied that quantifying uncertainty makes the future better manageable and eases decision-making. But to characterise the distribution of possible consequences as objectively quantifiable is not only incomplete, but also misleading (Bolaito Asiata 2010: 309). As Kahneman (*ibid.*) shows, in everyday decision-making situations under uncertainty human beings do not base their choices on rational calculations of probability estimates. Not only because many lack the mathematical intellect to do so, but also because in most decision-making situations in real, intricate, and interconnected life, probabilities of possible outcomes are simply not known. As Hansson (2009: 423, original italics) expressively describes:

Life is usually more like an expedition into an unknown jungle than a visit to the casino. [...] Nevertheless, it is common in decision-supporting disciplines to proceed as if reasonably reliable probability

estimates were available for all possible outcomes, i.e. as if the prevailing epistemic conditions were analogous to those of gambling at the roulette table. This mistake can be called the *tuxedo fallacy*.

The illusion that the future can be always understood and managed in terms of possibilities with known probabilities leads Hansson to refute the idea that most decisions are made under risk: instead, he argues, most decisions are made under uncertainty. I however argue that one can still state that most decisions are made under conditions of risk, if one understands risk as a future possibility – and not necessarily a probability – of harm. This colloquial understanding of risk is generally more acceptable and tenable than the technical understanding. It captures the endeavour of facing an uncertain future by thinking through possible courses of action, without necessarily quantifying the alternatives.

1.4.3 Uncertainty and ignorance

As stated in the above, risk is a way of dealing with an uncertain future by predicting it. Even though predictions might turn out to be extremely accurate, at the time of forecasting it is still a prediction, not a certainty. This is because no event is identical to a previous one: there are always discontinuities, irregularities, and variations in the way past and present determine the future (Bernstein 1996). As Gilbert Chesterton (1909: 146) remarked, the world is “nearly reasonable, but not quite”. This results in an irresolvable tension between history and future, certainty and uncertainty, knowledge and shortage of knowledge. Knowledge about the future always remains incomplete to an extent: otherwise it would not be the future, but the past or present. And even in the present there are many things one does not know or does not have full information about: “Uncertainty is everywhere and you cannot escape it” (Lindley 2006: xi).

However, being uncertain is not the same as having no information whatsoever: uncertainty is not an unknown unknown. Uncertainty must be placed somewhere on the continuum of knowledge about future events. This continuum ranges from complete absence of knowledge to full knowledge: from the unknown, unforeseen, and unpredictable to the known, foreseen, and certain (Emblemsvåg 2003; Caron 2013). Because one does not possess any knowledge about unknown events, they escape one’s

analytical capacities and cannot be predicted. About known events full information is available and they can then be predicted with complete accuracy: in reality, no future event is a known event according to this description. Uncertain events lie somewhere in the middle of unpredictability and certainty. One lacks certainty about such events, but there is not a complete lack of knowledge: information might be incomplete but at least to an extent present, and uncertain events can therefore be anticipated in varying degrees. Within the class of uncertain events a distinction has to be made between events that are quantified and those that are not. The latter are possibilities about which so little information is available to the person assessing the situation that the distribution of their probabilities cannot be estimated. The former are possibilities about which the decision-maker has enough information to express them in terms of probabilities. Some have argued that an uncertainty one can measure is so unlike an immeasurable one that in essence it is no uncertainty at all (Knight 1921). I see more value in understanding both risk and uncertainty as either quantifiable or unquantifiable, as consisting of possible and probable events: risks are then expressions of uncertainty.

If enough information becomes available, unpredictable events can be reduced to uncertain events (Emblemsvåg 2003: 62). In turn, future uncertain events can transform from possible into probable, and eventually become certain in hindsight. It seems as if technological developments and scientific discoveries enable people to also make future events certain in foresight, by calculating and predicting the future in extremely accurate ways. One can estimate how late a train will arrive, forecast the weather in two weeks' time, speculate about the outcome of elections, make a prognosis about the healing time of an injury and come up with predictions about which products consumers will buy. However, these calculations will remain estimations, forecasts, prognoses, and predictions: to speak of certainty about future events is a logical impossibility. It is therefore not the case that if one acquires more knowledge, all uncertainty can be drained from risks and future events can be made certain. As was discussed in the previous section, one can never be sure to have taken all relevant possibilities into account, and to have estimated their probabilities free from mental biases.

Moreover, the accelerating pace of change and increasing interconnectedness and complexity of modern life seems to intensify uncertainty. With science and technology, mathematical tools are developed with which to calculate probabilities, which in turn

enable one to manage uncertainty and provide stable, liveable conditions within a context of constant flux (Giddens 1990; Luhmann 1993). Examples of such tools are calculators used in predicting the weather, choosing an insurance policy, planning the layout of a city, organising a social event, deciding to invest in a business, and determining a sport tactic. However, quantifying uncertainty does not eradicate it altogether, it only makes it better manageable. Moreover, insights into probability theory continuously change and develop, and so do the tools one uses to calculate, measure, and predict, as well as the information they provide. Knowledge about risk is in fact knowledge about the lack of knowledge (Hansson 2014).

1.4.4 Risky knowledge

This section delved into the notions of foresight, predicting the future by calculating probable events, and the difference between uncertainty and ignorance. I found that the technical definition of risk in terms of probability has become standard in decision-making and risk-management disciplines, but that probability theory is not free from criticism. The primary criticism is that general, normal, everyday decision-making is not made on the basis of probability estimates. Moreover, psychological research suggests that emotions, personal differences, and value-laden perceptions are as important for effective dealings with risk as accurate probability estimates. I therefore argued for the colloquial understanding of risk as a future possibility of harm: this definition captures the act of facing an uncertain future by thinking through possible courses of action, without needing to quantify them.

In the investigation into the difference between certainty, uncertainty, and ignorance, I argued that both the quantified and unquantified variant of risk, i.e. probability and possibility of harm, are both part of uncertainty. One knows everything about what is certain, and one knows nothing about things that cannot be predicted, or about one is ignorant. About uncertain events one possesses some, but incomplete knowledge. This knowledge can sometimes be expressed in terms of probability and other times it cannot, but in both instances, one can speak of risk. Quantified uncertainty, i.e. uncertainty expressed in terms of calculated chance, does not eradicate uncertainty but only makes it more manageable. Probability estimates can aid human beings to cope with constantly changing situations, and in this respect, they are very useful.

However, one must acknowledge that there are many things one does not know, cannot predict, or assign meaningful probability estimates to. The belief that one can rationally know or control everything is not only illusory: it can also be very dangerous, as it nurtures hubris, recklessness, and carelessness (Jonas 1979, 1984). Moreover, it feeds thoughtlessness, as people might hide behind numerical calculations instead of using their own judgement. In a 1968 court case, the Supreme Court of California (*The People vs. Collins* 1968, 68 Cal.2d 319; 438 P.2d 33; 66 Cal. Rptr. 497; 36 A.L.R.3d 1176, as cited in Kadane 2008: 413) warned that “Mathematics, a veritable sorcerer in our computerized [*sic*] society, while assisting the trier of fact in the search for truth, must not cast a spell over him”. Probability estimates are not a panacea for uncertainty, and they should not overshadow one’s moral intuitions¹¹ and judgments about the future and how one should approach it.

1.5 Conclusion

In this chapter I broke down the concept of risk into characteristic aspects, which formed the basis for defining risk as the future possibility, sometimes quantified as probability, of harm related to human choice. In the investigation into the dual connotation of risk as potentially harmful and potentially beneficial, the development of the word was followed from ancient times to postmodernity. This historical expedition gave the impetus for further investigating the importance of human agency and knowledge. The human capacity to choose, as well as the ability to influence and control the future, was explained and delimited. The same was done for the capacity to know and the ability to predict the future. As such, the first step toward a more thorough understanding of risk has been taken in this chapter. The next chapter will focus on ethical concepts related to risk, which reveal that risk and morality stand in some kind of relation to one another. Understanding the morality of risk is necessary to approach risk from the perspective of ethical theories in later chapters.

¹¹ I acknowledge that moral intuitions, while psychologically compelling, are not always rationally convincing, and therefore should not be taken as the sole decisive factor in determining one’s moral attitudes and judgements (I thank Susan Hall for pointing out this assumption). However, I think intuitions can indicate what one values, deems important, and wants to protect. To simply discard them as irrational would be to miss out on their potential for moral guidance. Moreover, intuitions can be helpful in making ethically justifiable decisions, especially if they are developed through experiences – I will return to this point in Chapter 8. I argue then, that predominantly emotional factors, like intuitions, as well as predominantly rational factors, like probabilities, should influence how one manages the future.

2. THE MORALITY OF RISK

2.1 Introduction

Why is risk an interesting discussion and research topic from an ethical perspective? There are two main reasons. Firstly, risk is a thoroughly moral concept, as it has to do with what human beings consider to be good and bad. Secondly, risk impositions can by definition have negative effects on other persons, and therefore demand justification. In this chapter I will focus on the first reason, and analyse the morality of the notion of risk itself. In the following chapters I will take on the second reason, and evaluate how various ethical theories could answer the question as to when it is acceptable to expose other persons to risk.

2.1.1 Facts and values

In the previous chapter risk was defined as the future possibility, sometimes quantified as probability, of harm related to human choice. More generally, a risk is an undesirable possible future event, created or manageable by humans, and is often taken, run, or imposed to realise an associated benefit. The specific mentioning of human choices, as well as their potential positive and negative consequences, already hints at the (inter)personal and moral character of risk. Since the last decades of the previous century there is a growing interest, especially from sociological and psychological perspectives, in how people perceive risks and what cultural values underlie that perception (cultural values: Douglas & Wildavsky 1983; Lupton 1999a, 1999b; risk perception: Slovic 2000). In most sciences however, such as economics and business, health and medicine, and many of the social sciences, a purely technocratic and scientific definition of risk ($\text{risk} = \text{probability} \times \text{magnitude}$) remains dominant. This empirical approach sees risks as something measurable that can be directly and objectively perceived in the world, and of which the extent and likeliness can be statistically calculated. Examples are technologies, toxic exposure, radiation, global warming, terrorism, or smoking. Riskiness is then a characteristic of something, independent of who perceives it. The subject who perceives risk or riskiness is mostly excluded, and there is little or no focus on the values that influence or even determine its perception. People are assumed to be calculative, risk averse, and self-interested beings, who will make similar and rational choices once provided with the correct

information. Laymen can only understand most risks through technical assessments devised by professionals with expert knowledge.

This view has been heavily criticised for the fact that it neglects values and contexts that influence human decision-making: “of course human beings are not disembodied, rational calculators; they are complex beings radically situated in nature, culture and history” (Grove-White & Szerszynski 1992: 288; a similar point is made by Fay 1987: 143ff; as well as by Ledilow & Car 1997: 30). In an attempt to acknowledge the influence of value-laden contexts on the understanding of risk, the technocratic approach has distinguished between risk assessment and risk management. The former refers to the scientific process of objectively gathering and assessing information about risks, whereas the latter denotes the non-scientific undertaking of evaluating, responding to, and regulating risks. From a technocratic perspective values are important in risk management, but risk assessment is (or should be) a value-free undertaking (National Research Council 1983).

However, this distinction does not acknowledge that scientific knowledge itself is not free from normative convictions: it is influenced, based on, or even constituted by values. Risk is neither completely objective nor directly observable but:

[...] a multidimensional construct. ‘Risk’ exists as an intuitive concept, which for most people means more than the ‘expected number of future damage’. Its mental presentations are shaped by knowledge on the subject matter, by characteristics of the cognitive and motivational system and finally by social reality with its inherent interests and values. (Jungermann & Slovic 1993: 201, translated by Bollig 2012: 111 – 112)

Scientific facts are only one component of risk, next to the value-laden background of the individual assessing that risk, formed by his or her personal and social characteristics.

To understand that risks generally have a factual and a value-laden component, consider the simple statement that ‘a risk of being bitten by a puff adder is severe muscle damage’. The factual component consists in the knowledge that a puff adder bite can

lead to severe muscle damage when left untreated. The value-laden component consists in the judgement of reduced muscle tissue as ‘damage’, as something undesirable and unwanted. This value-laden and therefore moral component of risk is often overlooked because risk is mostly used in the context of things that most people find undesirable, such as reduced muscle tissue or other physical conditions, diseases, environmental destruction, and death. But as Hansson (2009: 424) points out: “from a philosophical point of view, it is important not to confuse uncontroversial values with no values at all”.

There are some risk researchers who have specifically argued that risk discourses promote, at least implicitly, moral ideas of right and wrong (Douglas & Wildavsky 1983; Beck 1987, 1992, 2006; Douglas 1992; Lupton 1999b; Garland 2003; Hacking 2003; Hunt 2003; Hansson 2004, 2013). Ulrich Beck (1987, as cited in Beck 2006: 333), who together with Anthony Giddens founded the sociological concept of the ‘risk society’, already in his first publication on this topic points out that “even the most restrained and moderate-objectivist account of risk implications involves a hidden politics, ethics and morality”. In a later publication, he adds that “risks lie across the distinction [...] between value and fact” (Beck 1992: 70 – 71; a similar point is made by Hacking 2003: 26). Risks therefore also lie across the distinction between morality and science, between what ought to be and what is. An often-heard argument in philosophical debate is that of the ‘naturalistic fallacy’, which refers to the logical error of basing normative statements on objective descriptions: what ought to be cannot, or should not, be deduced from what is. However, “no less fallacious is the assumption that the ‘is’ could be a value-neutral description, free from normative models of reality. Any descriptive account – even of uncertainty – has an implicit link between ‘is’ and ‘ought’” (Ledilow & Carr 1997: 41, note 1).

2.2 Harm and benefit

Identifying something factual as risky entails a value judgement about the state of the world, and the dangers and possibilities in it. Actions, persons, outcomes, or situations are judged as harmful, i.e. bad, or beneficial, i.e. good, from the perspective of an individual or a group of people. The thoroughly moral terms of harm and benefit then constitute the conceptual basis of the notion of risk.

2.2.1 *Focus on harm*

As was discussed in the previous chapter, the focus in risk definitions is on harm. Recall the basic dictionary definition of risk as “the possibility of something bad happening [or] something bad that might happen” (Cambridge Dictionary 2016, s. v. ‘risk’). This ‘something bad’ or undesirable possibility is often interpreted as damage, loss, injury, or adversity, but most generally as harm. Dictionaries define harm as injury or damage to a person’s physical or mental state, caused by the actions of others or by an event (Longman Dictionary of Contemporary English 2016, s. v. ‘harm’); or “something that causes someone or something to be hurt, broken, made less valuable or successful, etc.” (Merriam-Webster 2016, s. v. ‘harm’). Being harmed or suffering harm is then being in a worse situation than one was before, or could have been in: one is set back in one’s interests, made worse off, or “put into (or is perhaps simply [being] in) a certain sort of bad state or condition” (Hasner 2008: 421; a similar point is made by Feinberg 1984; as well as by Hall 2012). With regard to risk, harm has to be understood in the broadest sense of the word: a person suffers harm not only when he is physically injured or psychologically damaged, but also when he experiences adverse effects on his projects or goals. A person takes a risk when he exposes himself to the possibility of suffering harm, and has risk imposed on him when someone else exposes him to this possibility.

2.2.2 *Harm and morality*

Harm is also defined as the “immoral or unjust effects” of an action (American Heritage Dictionary of the English Language 2016, s. v. ‘harm’). This shows the moral character of harm: it is something people deem undesirable, want to avoid, and should not have inflicted on them without their consent or without justification.¹² This is captured in the ethical principle of non-maleficence, which demands that one ought not to perform actions that are harmful to others without qualification (Beauchamp & Childress 2009: 149). Harm in fact functions as a basis for morality, meaning that things, actions, or people are judged to be immoral or wrong because they cause harm. The connection between harm and morality was properly established during the nineteenth century, and ethically solidified in the utilitarianism of Jeremy Bentham and John Stuart Mill.

¹² Harm is sometimes straightforwardly justified by reference to beneficial outcomes: one can reprimand a child in order to teach it a valuable lesson, or perform an operation in order to save a life. But what justifies harm is a topic of much debate: does self-defence for example justify harming or killing an attacker? And what principles make abortion and euthanasia acceptable?

Utilitarianism is based on the idea that harm is bad, and that it is therefore wrong to cause a person to suffer harm. Bentham phrases harm's opposite as pleasure, but it can also be interpreted as advantage, profit, or more generally as benefit. Benefit is seen as something good, and it can be considered obligatory or praiseworthy to help others attain a benefit. "Nature has placed mankind under the governance of two sovereign masters, pain and pleasure. It is for them alone to point out what we ought to do, as well as to determine what we shall do. On the one hand the standard of right and wrong, on the other the chain of causes and effects, are fastened to their throne" (Bentham [1832] 1970: 11). Harm and benefit, or pain and pleasure, as synonyms for bad and good are the cornerstones of utilitarianism. Even though other normative theories do not necessarily place emphasis on benefit as an expression of the good, many share harm as an expression of the bad as ethical common ground.

A distinction is sometimes made between non-moral and moral concepts of harm in terms of wrongfulness. Harm in a non-moral sense simply refers to a setback of interests, whereas harm in a moral sense is a wrongful setback of interests (Feinberg 1984). The distinction assumes that not all setbacks of interests are morally wrong. Consider scoring a goal in a soccer match, or opening a new bakery in a village: the opponent as well as the baker are set back in their interests, but they are not wronged.¹³ However, I suggest to slightly alter this distinction. Instead of stating that not all setbacks of interests, i.e. instances of harm, are morally wrong, I argue that they are always moral, but not always wrong. Instances of harm are by definition open to moral evaluation, but whether they are wrong, depends on their justifiability. The fact that neither the opponent nor the baker suffers a wrongful setback of interest, is because such setbacks are part of the game they play – whether it is the game of soccer or the game of free market enterprise. By playing, by entering into a sphere of competition with others, sportsmen and businessmen accept the possibility of harm, and their consent – albeit implicit – justifies the harm they suffer. This might be obvious, but even when harm can be straightforwardly justified, it still requires justification. Harm remains something that people should not have inflicted on them without their consent or without justification. Recall Hansson's argument that uncontroversial values are still

¹³ I thank Marcel Verweij for providing me with this example, and pointing out the distinction between moral and non-moral harm.

values: similarly, obvious justifications of harm are still justifications, and as such, moral expressions.

Since the end of the twentieth century morality has not only centred on actual harm, but also on the possibility of suffering harm, i.e. risk. This means that morality is increasingly expressed through the discourse of risk (Hunt 2003: 165 – 192). Exposing others to risk, without their consent or without adequate justification, as well as not attempting to avoid or minimise risks, are intuitively judged as wrong and morally condemnable. As John Oberdiek (2012: 342 – 343) argues, harming another person “is clearly morally significant, plainly requiring justification. Linking the moral significance of risking to harming therefore holds out the hope of transferring the obvious moral significance of the latter to the former”. But the wrongness of risk is not so straightforward or obvious as one might think. Risks are a part of life, and people expose others to risks on a daily basis. Is it wrong to serve one’s guests pasta, even though eating pasta allegedly increases the risk of Alzheimer’s? Is it wrong to drive a car, because one directly exposes other road users to the risks of a collision? Is it wrong to use a mobile phone, because one indirectly supports the mineral mining industry that imposes risks of violence, abuse, poverty, and bad health on Congolese citizens?¹⁴ The wrongness of risk impositions is determined by how one understands harm and the relation between cause and effect, as well as where one draws the line between merely possible and certain or actual harm. Just as with actual harm, the wrongness of possible harm depends on the extent to which it can be justified.

2.2.3 Does a risk imposition constitute harm?

It is sometimes argued that the moral significance of harm equals the moral significance of risk, in the sense that to be exposed to risk is in fact to suffer harm. Claire Finkelstein for example makes the claim that just as the chance of benefit can be a real benefit, the possibility of harm can be a real harm. Think of two persons, Annie and Nomsa, of whom only Annie has the opportunity to study. Annie decides not to study, which puts both Annie and Nomsa in the same position of not being academically educated. Most people would still consider Annie better off than Nomsa, merely for having had the

¹⁴ Congolese mines – and mineworkers – are exploited for their rich resources of the mineral coltan, indispensable for the circuitry of cell phones, computers, and other electronics (Eichstaedt 2011: 1).

opportunity to benefit from academic education. Finkelstein deems risky situations analogous to potentially beneficial ones. Imagine that Nomsa lives in an extremely unsafe area, whereas Annie never has to worry about her safety. Even if Nomsa is never attacked or mugged, the fact that she is exposed to such risks everyday could inflict actual harm on her: the situation could make her anxious and fearful, and might affect her financially because she has to take security measures. Moreover, even if one does not compare the girls' situations, one can still think of Nomsa as worse off by comparing her actual state to a state she could have been in if she was not exposed to risk. If she would not be exposed to risk she would not feel unsafe, and feeling unsafe is less preferable than feeling safe: Nomsa is then set back in her interests, i.e. harmed.¹⁵ The heart of Finkelstein's (2003: 996) argument is that "agents have a legitimate interest in avoiding unwanted risks. A person, who inflicts a risk of harm on another, damages that interest, thus lowering the victim's baseline welfare". Understanding risk of harm as harm explains general moral attitudes to for example reckless driving or attempts at murder: even if no actual harm results from those actions, one considers them wrong and the persons who are subjected to the risks as wronged.

However, even though every risk imposition to some extent sets a person back in his or her interests, it is not the case that every risk imposition constitutes harm. Just as not all instances of harm are condemnable, not all risk impositions are wrong. For example, there is a small risk of a gas explosion if Nigella uses her stove. But it would be too strong to claim that by using her stove she harms and wrongs other people in the house, say, her husband. It would not make sense if her husband demanded that she not use the stove, and it would be equally strange to state that Nigella acted wrongly by using it. The difference between this and the previous case partly lies in the likeliness of harm that will result from the risk exposure: whereas Nomsa will most likely experience harm, Nigella's husband will most likely not. As these examples indicate, there are levels of risk, kinds of risk, or risky situations, that are acceptable. To live and to act is to expose ourselves and others to risk, but the question remains: what is it that makes certain risk impositions acceptable?

¹⁵ Muggers, rapists, or vandals expose Nomsa to actual safety risks. But her community, as well as the local and national government, also carry responsibility for the harm she is exposed to.

2.3 Safety and security

Risk's antonyms are safety and security. Safety is a state in which, or a place where, a person is "not in danger or at risk" (Cambridge Dictionary 2016, s. v. 'safety'); meaning that one is "protected from or guarded against hurt or injury [or] danger" (Oxford Dictionary 2016, s. v. 'safety'). Security can similarly mean a "state or condition of being protected from or not exposed to danger" (Oxford Dictionary 2016, s. v. 'security'); however, it often signifies a more institutionalised form of safety, referring to the "protection of a person, building, organization, or country against threats such as crime or attacks by foreign countries" (Cambridge Dictionary 2016, s. v. 'security').

2.3.1 *The paradox of being too safe*

In the previous chapter I noted that risk is mainly defined in negative terms. As its antonyms, it is not surprising that safety and security are generally seen in a more positive light. Most people value a safe living and working environment, safe drinking water, roadworthy cars, tested pharmaceuticals and cosmetics, secure train stations and airports, trustworthy police officers, transparent institutions, etc. To live a good and free life, safety and security are indispensable. Thomas Hobbes (2003 [1651]) points out that, to establish safety and security and subsequently enable and protect basic human freedoms, certain societal structures are necessary. To live outside of society would mean to live in "continuall feare, and danger of violent death; And the life of man, solitary, poore, nasty, brutish, and short (*ibid.*: 89). Safety and security are therefore some of the most important motivators for national and international politics. In fact, contemporary societies attach such value to being free from internal and external threats that they have been accused of being obsessively, even neurotically, preoccupied with the pursuit of safety and security (Bauman 1993: 235; Wilkinson 2001: 6). The downside of striving towards complete freedom from threats is that it entails a trade-off with, or limitation of, other liberties. A paradox then arises: one needs to be safe in order to be free, but one is less free because one is safe. The 18th century American statesman Alexander Hamilton (1787) already foresaw this paradox when he stated that "To be more safe, [nations] at length become willing to run the risk of being less free". Rights of freedom of expression, movement, and organisation are curtailed, and local government, police, and international institutions closely monitor citizens, in an attempt to minimise or eliminate threats to individual safety and national security. Camera

surveillance, speed limits, no-smoking signs, obligatory vaccination programmes, and taxes on consumer products that are considered a threat to health, are also examples of ways in which governments restrict individual liberty for the sake of protecting their safety and wellbeing.

2.3.2 Undesirable and impossible

It might seem contradictory at first, but attaining absolute safety, or zero risk, is not truly desirable. People simultaneously have an elementary need for security and for breathing space from security (J. Hamilton 2015). Striving to eliminate all threats constrains individual liberties, but also ignores the potential upside of risk. As was touched upon in the previous chapter, successfully managed risks can have significant positive consequences. If one would succeed in minimising risks, one would miss out on the many benefits risky behaviour can yield: for example, eliminating all the risks associated with driving essentially entails relinquishing the benefits of being mobile. Attaining safety and security should therefore not function as the sole guiding principle for individual and interpersonal conduct. Such a focus could inspire a patronising inhibition of change, development, and improvement. As David Bazelon (1979: 1067) wrote: “regulators are accused of stifling creativity and innovation in the name of the false gods of safety”. Moreover, attaining absolute safety and eliminating risk is impossible. For “The universe is so constructed that complete safety is a metaphysical impossibility. To succeed in securing complete safety is to deny reality” (Miles & Priest 1990 as cited in Cline 2003: 23; a similar point is made by Luhmann 1996: 6; 1993: 19). Risks are a part of life: one can strive towards successfully managing risks, but cannot reasonably expect to prevent all possible harms from realising. In real life, safety therefore does not necessarily imply the absence of actual or possible harm, loss, and other adversities, but the control over these things. At any moment in time one then finds oneself on a continuum from danger to safety in which one aims for what one experiences as a comfortable balance between risks and rewards, between acceptable danger and desirable safety.¹⁶

¹⁶ This balance loosely corresponds with what Gerald J. S. Wilde (1998) has coined the ‘target level of risk’. However, I do not agree with Wilde’s argument that the balancing process is homeostatic, meaning that trade-offs between safety and risks always settle into some sort of equilibrium.

2.3.3 *Nothing ventured, nothing gained*

Danger and risk are often associated with uncertainty and the unknown, whereas safety and security are associated with certainty and surety. However, to realise the potential upside of risk one has to successfully engage with possible dangers and an uncertain future. One has to venture out into the unknown and familiarise oneself with it. Recall the example of risk-taking in the context of personality development: only when a child ventures out into the world does it truly learn that one should not come too close to the fire, cannot put everything into one's mouth, and has to look left and right before crossing the street. The positive potential of trying and venturing out is captured in the saying 'nothing ventured, nothing gained', which implies that in order to obtain something worthwhile or desirable, one has to take risks (Cambridge Dictionary 2016, s. v. 'nothing ventured, nothing gained').

The noun 'adventure' is made up from the Latin words *ad* and *venire*, respectively meaning 'to' and 'come': in Latin, *adventura* meant 'a thing about to happen'. As the word found its way into other European languages, it acquired the passive connotation of 'that which happens by chance, fortune, or luck', and the purposeful connotation of 'a trial of one's chances' and 'a perilous undertaking' (Etymology Dictionary 2016, s. v. 'adventure'; Oxford Dictionary 2016, s. v. 'adventure'). The latter, active meaning is present in modern usage of the word: "an unusual, exciting, and possibly dangerous activity" (Cambridge Dictionary 2016, s. v. 'adventure'); "the encountering of risks; an exciting or remarkable experience" (Merriam-Webster Dictionary 2016, s. v. 'adventure'); "a perilous or audacious undertaking the outcome of which is unknown" (Oxford Dictionary 2016, s. v. 'adventure'). Throughout the history of the word, adventure has maintained a positive connotation, signifying something new, challenging, and exciting such as wonder, miracle, or marvel, and extraordinary thing or novel incident (Etymology Dictionary 2016, s. v. 'adventure'; Oxford Dictionary 2016, s. v. 'adventure'). These significations capture the idea that embarking on an adventure is possibly dangerous, but that encountering risks entails the possibility of positive outcomes. When one actively confronts unknown situations and navigates uncertainty, one reaches out towards the world in order to make something happen, to arrive somewhere, to experience, and to learn. As the German lyric poet and philosopher Friedrich Hölderlin (Hölderlin in Mitchell 2007: 70 – 71) phrases it: "Wo aber Gefahr

ist, wächst / Das Rettende auch [...] But where there is danger, a rescuing element grows as well.”

2.4 Moral judgements, emotions, and values

The general moral stance towards risky things and actions is the conviction that potential harmful outcomes should be avoided, controlled, or minimised, whereas potential beneficial outcomes should be realised and maximised. Because the ethical notions of right and wrong, good and bad, harm and benefit, danger and safety, are so central to the definition of risk, actions of risk-taking and imposition are readily subjected to moral scrutiny.

2.4.1 Blame

Perceiving something as risky evokes moral judgements and reactions. A common reaction when risks are imposed, and especially when they materialise into harm, is to ask who is to blame. Somebody was harmed or exposed to danger, so somewhere something went wrong, and someone is to blame for that mistake. For example, the fact that smoking during pregnancy exposes an unborn child to health risks asks for a choice on the side of the mother to be: will she smoke and expose her baby to those risks? A pregnant woman who continues to smoke, even though the text ‘Smoking during pregnancy harms your baby’ is printed on every packet of cigarettes she buys, is judged as, and blamed for being, oblivious, egoistic, careless, or irresponsible.

For someone to be to blame for a (materialised) risk, she needs to fulfil at least three conditions: she needs to be an agent i.e. have the capacity to act, do something, cause, influence, or control; she must have done something wrong; and she must have caused the dangerous or harmful event (Johnson 2005: 1617). So, for blame to be rightfully cast an agent must not only have created or imposed a risk, but also have done so by knowingly doing something wrong. If risks are created or imposed despite responsible conduct, because of honest mistakes, or without being able to be conscious or aware of it, it would seem unjust to blame someone for them.

One could however ask whether the agent did not actively try to endanger others, could have avoided the risks, should have known about or anticipated them, or should not

have made mistakes that had negative consequences. In those cases, risks are the result of respectively malice, recklessness, negligence, and incompetence. As Jonathan Wolff (2006: 418 – 419) defines the terms in the context of harm and risk:

Malice is to set out a course of action with the deliberate aim of imposing harm or risks to people. Recklessness is to act knowing that it could cause harm or risk, but not taking this properly into account in deciding whether to act. Negligence is to fail to consider whether or not your action carries risks to others, when such risks were reasonably foreseeable. Incompetence, in this context, is to carry out a proper risk assessment and decide to take appropriate action, but fail to do so.

If agents create or impose risks on others due to malice, recklessness, negligence, or incompetence, they can be justly blamed for their actions and their consequences. Blaming is often an emotional process, involving emotions such as shame, guilt, or humiliation on the side of the blamed, and of contempt, disgust, and indignation on the side of the blaming. Blaming can have positive effects, as the fear of being blamed, named, and shamed might inspire people to act responsibly so as to avoid blame. However, playing ‘the blame game’, i.e. looking to find fault, and the fear of doing something wrong can also negatively restrain people in their actions. Moreover, blame can only be cast after a wrongful event has occurred – after a risk has been wrongfully imposed or harm has materialised – and therefore necessarily entails a backward-looking perspective. This is not necessarily a bad thing, for one can work on a better future by learning from the past. However, after the wrong fact has been established and blame has been justly cast, one should turn towards the future and focus on how to prevent such wrongs from happening again.

2.4.2 (Ab)normal and (un)natural

The fact that the expectant mother’s choice to smoke in the previous example is found condemnable shows that identifications of risk convey an underlying idea of what is normal and natural, and therefore good. If the baby’s physiological make-up changes as a result of the mother smoking, this is deemed ‘malfunctioning’ and ‘not normal’. Other examples of risks as threatening the normal and natural status quo are anthropogenic

climate change or genetically modified organisms (GMO's). The risks of climate change caused by human activities are often illustrated by examples of 'freak' or 'extreme' weather events such as sweltering heat waves or extremely cold winters. These events deviate from a state of the weather or climate that is conceived as normal, and are therefore perceived as weather anomalies or unnatural weather phenomena.

Now consider GMOs: plants (or animals) of which the genetic material has been altered to create desirable traits such as a longer shelf-life, convenient size, and lower water requirement. GMO foods cannot be found in nature or are not produced by natural processes such as traditional crossbreeding, and are therefore understood as unnatural. The term 'manipulated' already signifies that things are different from what one would 'normally' encounter. In risk assessments of anthropogenic climate change as well as of GMO consumption, references to their unnaturalness are sometimes presented as objective or value-free. However, they are often implicit value statements that stem from the conviction that 'natural' and 'unnatural' neatly map onto 'good' and 'bad'. Similarly, the current food trend to consume so-called 'superfoods', like chia seeds and coconut water, is based on the idea that such foods have natural traits that improve physical and mental fitness, fight diseases and aging, and overall fit into a healthy diet. Even though such effects can surely be proven to a certain extent, one must be careful not to equate naturalness with goodness too easily: naturalness is a value-laden concept that is difficult to define in a consistent manner. At the very least, one should acknowledge that naturalness is indeed a value-laden concept.

2.4.3 Rational experts, irrational laymen

A starting point for scrutinising implicit value judgements in risk assessments is the emotional reaction triggered by taking and imposing risks. If one has the option to take risks, or operates in a context in which risk-taking is necessary, one can feel excited and challenged, but also overwhelmed, overly responsible, stressed, scared, and precautionous. A situation in which one is exposed to risks, or is aware of the fact that others are being exposed to risk, can trigger feelings of powerlessness, vulnerability, indignation, sympathy, compassion, care, fear, anxiety, dread, and disgust.

In academic, scientific, or political perspectives, emotions are often displayed as irrational, and therefore deemed unfit as tools for decision-making. In fact, since the Enlightenment the distinction between emotions and reasons has become deeply ingrained in, mainly Western and globalised, modes of thought. The Cartesian split between body and mind, or body-mind dualism, associates emotions with the body and the heart, whereas reasons are associated with the brain, mind, or soul. This nurtures the assumption that rational, logical, and therefore sustainable, justifiable, and good decision-making is done by and with the brain, through informed, conscious, and deliberate reasoning (Macquarrie 1973: 154 – 160; Bortolotti 2015).

It is then not surprising that in the technocratic risk perspective of most experts, which defines risk as the probability of an unwanted event, the value-laden component of, and emotional reactions to, risk are often ignored, not acknowledged, or downplayed in favour of the factual component. Moreover, there is a tendency to view laymen's understanding of or reactions to risk as wrong, contradictory, and overly emotional. The public for example overestimates the risks associated with nuclear power plants in comparison to the risks of driving, while the risk of dying in a car accident is many times higher than the risk of being the victim of a nuclear disaster. Some scientists therefore "question the wisdom of leaving risk regulation to the scientifically untutored. [...] should [the public] be permitted to make decisions for society when it cannot understand the complex scientific questions that underlie the decision" (Bazelon 1979: 1067). These experts can be tempted to suppress the seriousness of possible threats in their communication to the general public, in an attempt to avoid spreading unnecessary panic and fear, or because they want to keep the stifling interference of regulation and too much political accountability at bay.

However, findings from cognitive psychological and neural scientific research refute the dichotomy between emotions and reasons (Damásio 1994; Goleman 1996; Servan-Schreiber 2011; Kahneman 2011; Kandel & Schwartz 2013). To understand why this is so, consider the evolution of the human brain.¹⁷ At the top of the spinal cord one finds the brain stem: this is the most primitive part of the brain that humans share with all

¹⁷ The brain is the most complex organ in the human body, and a thorough elaboration falls outside the scope of this research, and my capacities as a philosopher. For my purposes, this simplified description suffices.

species that have a basic nervous system – like reptiles. It regulates metabolism, breathing, heart rate, blood pressure, sleep cycles, hormone secretion, and other bodily functions needed to keep the body alive and functioning. Around the brainstem one finds the limbic brain, also called the emotional brain. This part regulates drives, impulses, emotions, and feelings. The limbic brain comprises a thin cortex made up of two layers, which respectively enable one to learn and memorise. This cortex lies at the basis of the neo-cortex: the rope-like and convoluted part that one sees on standard images of the brain. The neo-cortex, or the thinking brain, manages language, attention, thought, awareness, strategizing, long-term planning, problem-solving, and conscious deliberation (Kandel & Schwartz 2013). The fact that the thinking brain has evolved around the emotional brain indicates that, even though these different parts of the brain have their own properties, they work together: emotions and reasoning are very much intertwined. Emotions play a vital role in human rationality, as they influence and guide one's thinking and decision-making. Both emotions and reasons are then indispensable for human intelligence (Goleman 1996).

The emotional and thinking brain correspond with two systems of thinking, enabling different forms of decision-making, as elaborated by Kahneman (2011). System one is unconscious, immediate, spontaneous, and automatic reasoning that makes it possible for us to operate smoothly and quickly in a complex and dynamic world. It is an affective system based on emotions and intuitions. System two is conscious, slow, deliberate, and controlled reasoning that helps one to reliably understand and make sense of one's being and experiences. It is an analytic system based on reasons and abstractions. Emotions are then not opposed to reasons, but are the source of a distinct form of reasoning. They enable contextualised and practical decision-making that is just as vital to human functioning and flourishing as abstract and theoretical thinking is (*ibid.*).

When people then identify, weigh, assess, react to, or in general make judgements about risks, they use their emotional as well as their thinking brain. Contemporary psychologists and normative philosophers have taken up these findings to argue that emotions should not be shunned from moral justification in decision-making about risk. In fact, emotions show people what they care about, what concerns them, and what they value (Slovic *et al.* 2004; Roeser 2012; Lupton 2013). Over the course of several

decades of research, risk perception psychologist Paul Slovic (2000; cf. Roeser 2012: 821) discovered that laymen should not be considered to have a wrong, but an alternative perception of risk. In their judgements on what determines the acceptability of the creation and imposition of risks, laypeople tend to include many more considerations than the technocratic definition of risk – as the product of probability and magnitude of harm – allows for. Based on their emotions, they consider for example voluntariness, autonomy, and fair distribution of harms and benefits, which shows that laymen's perception of risk is ethically much richer than the technocratic perception of scientific experts.

2.4.4 Valuable emotions

There is a general tendency to feel anxious, worried, fearful, and cautious when confronted with things one is uncertain about. Uncertainty puts in motion innate defence mechanisms that warn one against possible dangers and harms. For example, the call for precaution in matters of climate change is inspired by scientific uncertainty about the workings of causes and effects in the Earth's natural systems. The fact that many people consider precaution to be an appropriate reaction to the uncertainty that clouds the topic of climate change shows that they value and want to preserve natural biodiversity – perhaps for its own sake, or because it enables them, and future generations, to live the way they do now. If those things did not matter, people would not be bothered if they were affected by changes in the Earth's natural systems. Other emotions that are common in climate issues are indignation and outrage. Consider that the world's richest countries have not only become rich through industrialisation, but also remain high on the list of the biggest contributors to global greenhouse gasses emissions, and are in a position to adequately deal with, and recover quickly from, changes in the climate. The world's poorest citizens on the other hand are the most vulnerable to climatic shocks and benefit the least from industrial developments (Althor, Watson & Fuller 2015). This prompts questions of fairness and justice, of equitable social systems and equal distributions.

Other examples of emotions exposing values are the resentment and repugnance most people feel against the use of human subjects in scientific experiments, or the aversion, disgust, and feelings of abnormality, weirdness, or creepiness triggered by cloned

beings, cyborgs, and hybrids between humans and animals (Hurlbut 2011: 162; Ball 2011: 289; Roeser 2012: 825). Ethicist Sabine Roeser (2012), who has made a convincing claim for acknowledging the guiding moral function of emotions, points out that such negative emotions do not necessarily dictate that such actions are wrong. However, they should be taken seriously as signs of warning, and can make one aware of, and reflect on, the morally important features of risky activities, policies, or technologies that are often overlooked in the dominant techno-scientific risk perspective. In the case of experiments on human subjects, morally important questions concern voluntariness, autonomy, and dignity; in cases of human-animal or human-machine hybridisation they concern tampering with nature, control, and responsibility.

Emotions then enable practical reasoning and can enrich theoretical reasoning. However, the suspicion that emotions undermine rationality is not completely mistaken, for they can indeed be misleading when they are based on a wrong understanding or representation of facts, which is the case with phobias, stereotypes, and biases. Overly focusing on small or improbable risks, like the risk of being pecked by a chicken or being attacked by aliens, can lead to unjustifiable decision-making with regard to risks, such as demanding the extermination of all chickens or spending the whole national military budget on building a defence wall in outer space. But, as Roeser (2012: 285) states, this should not be taken as an argument against the capacity of emotions to guide practical decision-making: instead, it calls for educating individuals out of unwarranted beliefs through presenting factual information in an emotionally accessible way. Emotions, irrational or educated, are real and should be genuinely acknowledged. In a similar vein neurobiologist William Hurlbut (2011: 162) argues that moral emotions “are telling us something. Nonetheless, we should seek coherent, consistent, and broadly accessible reasons for our ethical judgements”. Having the opportunity to express one’s emotions in dialogue with others can first of all reveal irrationalities, which can then be addressed by presenting counterfactual information. Secondly, such a space is receptive to an honest, respectful, balanced, and open dialogue that nurtures well-placed trust and the willingness to discuss, explain, understand, and sympathise with issues concerning risk and danger.

2.5 Trust and responsibility

The last two morally salient notions in the context of risks themselves, as well as actions of risk-taking and imposition, are trust and responsibility. Moral emotions and values are at the basis of considerations of trust and responsibility. For example, if one feels aversion to testing pharmaceuticals on human subjects without their consent, because one values voluntariness and autonomy, one will mistrust and deem irresponsible a pharmaceutical company that is involved in such risk impositions.

2.5.1 To trust or not to trust

Trust can have different meanings, but it is relevant for my investigation in the sense of a “Firm belief in the reliability, truth, or ability of someone or something” (Oxford Living English Dictionary 2016, s. v. ‘trust’). Trust should be distinguished from confidence (Giddens 1990; Luhmann 1979, 2000; Uslaner 2001; Earle, Siegrist & Gutscher 2007; Nickel & Vaesen 2012). Confidence is a cognitive attitude that things will turn out the way one expected, where this expectation is based on past experience or evidence: one can be confident that the sun will rise tomorrow, that the letter one posted will be delivered, or that one will not be killed by a piano falling from the sky. Trust on the other hand is a social commitment to make oneself vulnerable to others, where this willingness to expose oneself is based on the ethical judgement of shared values or a similarity of intentions: one trusts one’s partner not to cheat, the pharmacist to deliver the right medicine, and the owner of the local grocery store to sell good produce.

People engage in trust on different levels, extending it in different social circles: to personal relations like friends, family, or acquaintances; to more distant ones like scientists, politicians, government representatives, professionals, or experts of some sort; and even to abstract entities like ‘the medical practice’ or ‘the economy’. The trust extended to the latter two levels (of experts and abstract systems) is deeply ingrained in modern life. In fact, trust has become a necessary precondition of daily activities in modern societies (Giddens 1990). Switching on a light, using a coffee machine, making a call, riding a bus, drawing money at an ATM, getting insurance, having an operation, or flying in an airplane: all these activities and routines presuppose trust in the

knowledge and expertise of others, on whole systems of knowledge and expertise of others.

Placing trust in systems of knowledge and expertise helps one to live a normal and comfortable life in a complex and dynamic world. Confronted with options, and the benefits and risks associated with them, trust in others mitigates the necessity to constantly support one's choices to act in a certain way. For example, one lets one's children be vaccinated because one trusts medical research and practice in the country one lives in, and one casts a vote for a representative of a political party because one trusts they can make a difference. If people did not have or extend this trust, they would feel anxious, insecure, and vulnerable more often. Not only would they live a frightened life without trust, people would have a hard time living at all, for the "total inability to place trust would produce total paralysis of action, and is untenable in practice" (O'Neill 2002: 12).

Trust not only influences how one operates in the world, but also how one perceives dangers in it. First of all, what one considers as risky is often based on trust in others. For example, does one trust scientists who argue that tipping points in the climate will be reached in less than twenty years and runaway climate change will then uproot the current way of life? Does one trust those who say one should not be too worried about climate extremes and changes, for fluctuations have occurred as long as the Earth exists? Or does one trust those who claim that the climate is not changing at all?

Moreover, trust in others determines how one personally acts with regard to risks. To continue with the same example, if one believes that the Earth's climate is actually changing and something should be done about it, one trusts others in providing information about what activities do not contribute, or contribute less, to the warming of the Earth, such as recycling plastics, taking shorter showers, and using public transport. Most people do not have the time, opportunities, means, or talents to do scientific research themselves, and therefore rely on, and trust in, information provided by others who have. The problem individuals face is how to evaluate and judge different and conflicting knowledge claims, and who to trust and involve in their decision-making in the context of risks. In other words, who can be trusted to provide truthful information about risks and personal responsibilities in dealing with those risks? As information

becomes more specialised and technical, the gap between inexpert individuals and expert professionals gets wider, which makes it more difficult for the former to judge the knowledge claims of the latter.¹⁸

Moreover, information is often passed on through different channels, minds, and mouths before it reaches the person who uses it in his decision-making, and might have become distorted in the process. People make decisions based on unchecked, probably imperfect, or possibly even wrong information all the time: trusting a friend who read an article on foods that heighten the risk of developing cancer, trusting a television commercial or a supermarket sign promoting breakfast cereals as healthy, or trusting a politician claiming that immigrants are stealing local jobs. The process of distortion of information can lead to misplaced trust and eventual mistrust, as well as unclear responsibilities. Communication is then vital for placing trust well:

Our ability to live together in communities depends on our ability to communicate. [...] for these [social] exchanges to work, we must be able to rely on one another to speak honestly. Moreover, when we take people at their words, we make ourselves vulnerable to them. By accepting what they say and modifying our beliefs and actions accordingly, we place our welfare in their hands. If they speak truthfully, all is well. But if they lie, we end up with false beliefs; and if we act on those beliefs, we end up doing foolish things. We trusted them, and they let us down. This explains why lying is offensive. It is at bottom a violation of trust.
(Rachels & Rachels 2010: 164)

If information about risks is miscommunicated or misunderstood, who shoulders blame or responsibility for harmful outcomes? Professionals have the obligation to communicate risks in ways that are as understandable and accessible as possible, but individuals share in the responsibility of making an effort to understand the information handed to them, and critically discuss it in the public domain. Only then can their trust be genuine.

¹⁸ But, as was discussed in the previous paragraphs, the distinction between expert and inexpert does not map directly onto the distinction between rational and irrational. Arguing that laymen do not have the ability to assess the validity of scientific claims about risks does not necessarily mean that their judgments and decisions about risks are irrational or wrong.

Consider a person who trusts a certain statement to be true, but makes no effort to understand or check the information on which he bases his commitment: his trust might not be betrayed and even be accidentally well placed, but it cannot be genuine. This leads Onora O'Neill (2012) to focus on autonomy, understood as the moral maturity to choose and criticise rules, as a necessary precondition for trust. Being able to make morally mature choices with regard to risk then entails making an autonomous choice to trust, but does not necessarily entail cognitively understanding comprehensive, detailed, or technical information about risk. Firstly, most inexpert individuals lack the capacities to fully grasp such information. Secondly, such information cannot always be retrieved, as is the case with unforeseen risks, or adequately communicated, as is the case with big or complex risks. I argue that in such cases genuine trust can still be extended: trust is then not based on an evaluation of risks, for this is either difficult or impossible for the individual extending trust, but on an autonomous determination of trustworthiness of the agent in whom trust is placed. When one trusts an accountant who gives financial advice, an electrician who works on the wiring in one's house, a government approving the construction of a nuclear waste management facility, or a research institute conducting social experiments, one bases one's trust on the trustworthiness of the respective agents (unless one has expert knowledge on any of these topics).

When extending trust based on trustworthiness, an individual exercises its autonomy by not just acting on a leap of faith, free-floating, or blind trust, but by forming an informed judgement based on particular evidence of trustworthiness. Such evidence could comprise past experience, reputation, and competence; transparency and adequate communication of decisions and actions; integrity, honesty, and reliability; a clear explication of values, goals, intentions, and motivations; or a combination of these. It is then not merely a belief in the benevolence of the agent who is trusted, but consists of a conviction that this agent will treat them as was assured or promised, and will respond adequately when harm materialises, by for example showing remorse and changing one's course of action to minimise or avoid further harm.¹⁹

¹⁹ For a more thorough analysis of the possibility to extend trust based on trustworthiness (in the context of informed consent), see the article by Annemarie Bijloos (2015): *Unknown Risks, Consent and Trust: Making Informed Consent Possible under Uncertainty* (unpublished paper: available on request).

There is always the possibility of misplacing one's trust: one can misunderstand or misinterpret information about risks or the agents one trusts, or one can be coerced, deceived, misled, or betrayed by those agents. But apart from unjustified or misplaced trust there can also be unjustified or misplaced mistrust (Montpetit 2003; Kydd 2005; O'Neill 2012). Examples of misplaced mistrust are the xenophobic perception that all foreigners and refugees are risks to one's current way of living, and the paranoid worry that all experts, governments, media, and businesses are untrustworthy. To find well-placed trust between misplaced trust and misplaced mistrust is a difficult, but necessary task. As I remarked, to live normal and comfortable lives in a complex and dynamic world, it is practically indispensable to – to an extent – trust agents, institutions, and systems shaping and managing society.

The question then is how one can place and refuse trust intelligently when one is faced with incomplete evidence (O'Neill 2015). This is not only the responsibility of the trusting individual. Individuals should make an honest attempt, in line with their abilities, at understanding information about risks, be sensitive to the trustworthiness of other agents, and place their trust intelligently. Experts conveying information about risks should be transparent about, and communicate clearly, what they do and do not know. Also, the context in which both inexpert individuals and experts operate should be circumscribed by just legislation, good policies, honest enforcement, ethical obligations, and professional conduct. Inspiring and maintaining trust is therefore a collective effort, the result of which is built up slowly, but destroyed easily.

2.5.2 Responsibility

To be responsible is, as the word already indicates, to respond, to answer for one's actions: I therefore understand responsibility as answerability. In Chapter 8 I will discuss responsibility as answerability in much more depth, but for now it suffices to say that one of the ways to be responsible for a risk imposition is to be in a position where one can rightly be asked to answer for one's actions. One then has to justify the risk exposure and the harm that possibly results from it by providing reasons for one's actions. Crudely stated, this kind of responsibility entails that one thinks before one acts, and reflects on whether one can justify the negative outcomes that one foresees resulting from one's actions to those who might be affected by them. So, if one is asked

why one chooses to have one's child vaccinated with the MMR vaccine (against measles, mumps, and rubella) despite possible health risks, one might answer that one believes the general risks associated with vaccinations do not outweigh the benefits of being immunised against the three diseases. Or one might answer that one chooses not to have one's child vaccinated because of the rumoured correlation between the MMR vaccine and an increased risk of developing autism. One is responsible for the risks one exposes one's child to in two different ways. Firstly, one is responsible in the sense that one can be expected to provide reasons for one's decisions. Secondly, one will be considered a responsible parent if one's reasons are accepted as good or adequate justifications. This shows that assignments and evaluations of responsibility, just as other ethical judgements, are fundamentally an interpersonal affair: persons can hold each other responsible, and evaluate the responsibility of each other's choices.

The example of vaccinations and their potential positive and negative health effects also points back to the previously discussed relation between risk and trust, and brings responsibility into this relation. Conflicting knowledge claims (does the MMR vaccine increase the risk of autism, and if yes, is it a small or improbable risk worth taking?) push individuals, who do not have the time or capacities to research the validity of these claims, to trust others to help them in their decision-making. How do people understand their individual responsibility, given the necessity of trust in and dependency on experts, abstract systems, and other individuals? Do they see themselves as bearing responsibility at all, and if so, how much?

I argue that individual responsibility is often not absolute, as everybody depends on others to make moral choices about what to do, who to be, and how to live their lives. One is fully responsible if one completely understands, foresees, and intentionally and directly imposes confined risks on others, such as throwing a brick off a building onto a busy street and the associated risk of killing a pedestrian. A rational person does not require the knowledge of others to determine the riskiness of such a situation, or how to manage it. However, in the case of larger and more complex risks, the need for trusting the knowledge of others increases, which seems to decrease the extent of individual responsibility. Individual responsibility in the case of risks one contributes to, but does not cause personally, such as environmental and social risks associated with climate change or global poverty, is ambiguous and can be assigned to multiple actors. The

extent to which individuals are then responsible for a risk they impose on others depends on what they do – or can be expected to – know about the risk, on their abilities to manage possible negative consequences, and on the extent of their dependency on the knowledge of others. In Chapter 8 I will return to these issues.

2.6 Conclusion

In Part I of this research I have sought to answer the first research question: *What is a risk?* I have defined risk as the future possibility, sometimes quantified as probability, of harm related to human choice. Moreover, I have explored the ethical relevancy of risk by looking at value judgements relating to harm and benefit, normality and naturalness, emotions, blame, trust and trustworthiness, and responsibility.

As was mentioned in the introduction of this chapter, risk is interesting from an ethical perspective because a) defining risk comprises a value judgement, and b) the fact that exposing others to risk requires an ethical justification. Having a general understanding of the morality of risk then enables us to continue with Part II of the research, which together with Part III focuses on the acceptability of risk impositions. This chapter's last section on responsibility in a way already introduced this topic, for evaluating a risk imposition as responsible entails a moral judgement about that action as being permissible, acceptable, and perhaps even good, but in any case, justifiable. I have briefly touched upon a few moral considerations that are sometimes used in justifying risk impositions, such as beneficial outcomes, voluntariness or autonomy, and consent. In the following chapters I will continue explicating these considerations and discuss four ethical perspectives that prioritise such considerations differently in the evaluation of risk impositions: utilitarianism, deontology, rights-based ethics, and contractualism. I will investigate whether one can come to a convincing evaluation of risk impositions from any of these perspectives.

PART II

3. THE UTILITARIAN PERSPECTIVE

3.1 Introduction

In Part II, the second research question becomes relevant: *Do mainstream ethical theories provide a convincing evaluation of risk impositions?* In this chapter specifically I focus on utilitarianism, and the central question in this chapter then is: *Does utilitarianism provide a convincing evaluation of risk impositions?* But before attending to this question, I will first explain how I understand utilitarian theory.

Utilitarianism is a form of consequentialist ethics. In consequentialism actions are morally evaluated in terms of consequences, which means that the rightness of an act depends on the goodness of its consequences. Different forms of consequentialism provide different understandings of what determines the goodness of a consequence. In utilitarian ethics, the moral appraisal of a consequence is expressed in terms of utility. Utility comes from the Latin *utilitas*, meaning usefulness, and an action is good or bad depending on whether it is useful in a sense, whether it has the ability to satisfy a certain need or desire. As was already touched upon in Chapter 2, classic utilitarianism, as developed by Jeremy Bentham and John Stuart Mill, understands the fundamental need or desire of all sentient beings as the drive to seek happiness and avoid pain. The basic moral focus of human beings is therefore always on maximising happiness, pleasure, flourishing, wellbeing, i.e. the good, and minimising pain, misfortune, deterioration, disadvantage, i.e. the bad. Actions are good insofar they produce happiness and minimise pain, and they are right insofar they secure these outcomes for the greatest number of people. Mill (1867: 53) argued that “Each person’s happiness is a good to that person, and then the general happiness must be a good to the aggregate of all persons”. Securing good outcomes for the greater good is then at the basis of utilitarianism. Which actions are in the interest of the greater good is determined by weighing their aggregate positive consequences against the aggregate negative ones: actions are right insofar they result in the best overall net balance of consequences.

From a utilitarian perspective then, risks can be worth taking or acceptably imposed if the beneficial outcomes associated with risk-taking or risk-imposing actions outweigh the harmful outcomes. On face value this is an intuitively appealing approach, for weighing advantages against disadvantages and aiming at obtaining the best overall result is something that is by default incorporated in decision-making about risk. The utilitarian approach is fairly straightforward in the evaluation of actions when the outcome of a course of action is, or can be, known in advance. If the outcome is known or knowable, it can be assessed according to the criteria of utility and a verdict about the goodness of the action can be reached. But the more indeterminate an action, i.e. the more uncertainty there is about the consequences of that action, the more difficult it becomes to evaluate it on utilitarian grounds.

In the context of actions that involve risk one can be more or less certain about outcomes. Consider the following situation. A primary school teacher wants to take her class on an outdoor trip. The teacher believes the children will benefit greatly from such an experience. They will learn about nature, get to know each other better, have to be resourceful and resilient in an unknown environment, gain valuable life skills, and have fun along the way. The teacher knows that none of the children can swim. Taking the school class on an outing to swim in a deep lake is risky, as it is very likely that harm will occur. For illustrative purposes, take the ultimate form of harm: death of one, some or even all children – which of course can result in second-order forms of harm like shock and grief of the parents, and guilt and job loss of the teacher. Of course, one cannot know with certainty that death will occur: it is for example not given that swimming will take place. But considering the particularities of the situation it is likely that such harm will result, in which case the negative consequence outweighs all the positive ones. This makes the risk imposition of taking children unable to swim on an outing that will involve swimming morally unacceptable, other things being equal.

But now consider a more indeterminate situation, a situation in which the outcome of a course of action is highly uncertain, or even completely unknown in advance. The teacher still wants to take the children on a trip but is now contemplating to take them strawberry picking on a nearby fruit farm. Things could still go horribly wrong: a child could wander off and get lost in the surrounding forests, where he could eat a poisonous plant or be attacked by a wild animal. But the chance of harm occurring is much

smaller, or far less obvious, than in the previous example. This chance is further reduced if the teacher takes reasonable safety measures such as asking parents along for extra supervision and instructing the children to stay together. The question now is how this risk imposition, i.e. the teacher's decision to take the school class on the strawberry-picking trip, is evaluated from a utilitarian perspective. How can one determine the utility of actions of which the outcomes are uncertain?

I will discuss two ways in which risky actions can be evaluated from a utilitarian perspective. The first approach focuses on the consequences that in fact result from a risk imposition, whereas the second approach focuses on consequences that might result from such an action. A precondition for both forms of utilitarian evaluation is that consequences are – or can be – known, assessed, and compared, either after the fact or in advance. In the next sections I will discuss these alternative routes, and the problems that result from utilitarianism's dependency on either actual or hypothetical consequences.

3.2 The focus on actual consequences

A utilitarian focusing on actual outcomes would claim that, in order to know whether actions in general are good, and risk impositions specifically are morally justifiable, one should look at the way in which they unfold in the world. This utilitarian could even go as far as to insist that one has a duty to perform the action that in fact produces the best overall outcome (Moore 1912). In the example of the teacher and the outdoor trip, taking the children either to the lake or the farm will be good, and the risk imposition justified, if the children all return home safely. However, if a death occurs, it would have been a bad decision and an unacceptable risk imposition.

3.2.1 Actual consequences matter

One cannot deny that actual outcomes do influence the overall appraisal of choices and actions. Think of a villain who actually succeeds in murdering someone and one who attempts murder but fails. Because they both intended to kill another person, the first as well as the second villain will be convicted – a legal reaction – and blamed – a moral one. However, the type of conviction and degree of blame is different in both cases. The law reflects the general moral attitude that the first villain is more at fault than the

second one. The first villain will be sentenced to a heavier punishment, even when the second villain could have failed in his attempt only through no ‘fault’ of his own: maybe the police showed up in the nick of time, or he tripped, dropped his gun, and gave the victim time to get out of harm’s way, or he did shoot but missed. Whatever the reason, he somehow failed to kill his victim. This difference is also present in the evaluation of risky actions in which no harm was intended in the first place. Bernard Williams’ (1981: 28) example of a lorry driver who accidentally hits a child that runs onto the road can be illuminating in this context. It is a typical case of ‘wrong place, wrong time’, for the driver did not have any intention of causing the child harm and he did not drive negligently. B. Williams phrases the situation in terms of luck: the fact that the driver ran over the child is the product of bad or ill luck. Nevertheless, the unlucky driver who hits and kills a child is still considered to be more at fault than the lucky driver who happens not to encounter a child or who is able to swerve out of the way.

3.2.2 Actual consequences escape one’s control

It then must be acknowledged that the eventual evaluation of decisions and actions is influenced by their actual consequences. At the same time, one has to be cautious not to let those consequences fully determine one’s evaluation, for such an approach runs into several insurmountable difficulties. The first problem for actual outcome utilitarianism was touched upon in the above: actual outcomes often escape an agent’s control. The second villain fails to murder his victim because the police arrive, and the unlucky driver kills a child because it did not look both ways before crossing the street. Actual outcome utilitarianism disregards the fact that the ways one’s actions materialise in the world are influenced by chance or luck, and the choices and actions of others.

Luck and the choices of others

To go back to the example of the teacher and the strawberry-picking trip, consider a mother who does not like the teacher and has told her son that whatever the teacher says is nonsense. The teacher warns the children never to go beyond the fence around the farm, for a river runs alongside it and she knows none of the children can swim. But the little boy, having his mother’s words in mind, wanders off, climbs over the fence, falls into the river and drowns. According to actual outcome utilitarianism this instance makes the overall outcome of the decision to take the children on an outdoor trip a bad

one and renders the risk imposition unjustified. To grasp the arbitrariness of actual outcome utilitarianism, compare this to the other examples of the lucky and the unlucky driver. In the lucky case the risk imposed by driving is justified, for the action resulted in an overall positive net balance. In the unlucky case the same risk is unjustified, for the overall net balance is negative.

The lack of, or merely partial, control over the actions of others becomes even more apparent when one looks at actions embedded in wider contexts. The state of the world depends largely on the combined consequences of actions performed by countless people, now, in the past, and in the future. Reflecting on this complexity, Charlie Dunbar Broad (1914: 313) argues that: “since the rightness of your action is at mercy of all that is going to happen in the universe throughout all future time, there is no reason to expect better results from conscientious acts than from the most stupid and biased ones”. This statement might not acknowledge the effects informed decisions can have on the state of the world, but it does illuminate the overly demanding stance actual outcome utilitarianism takes when it makes the rightness of an action completely dependent on the actual outcomes of that action.²⁰ The bottom line is that one does never, or can never, know all the possible outcomes of an action.

To evaluate risky actions based on actual outcomes, without acknowledging the influence of luck and the lack of control over the actions of others, is then wrong for three reasons. The arbitrariness of the approach firstly leads to unfair judgements of agents and their actions. Secondly, it extends personal responsibility to apply to consequences over which one has no control, which renders it an unintelligible concept. Thirdly, it leads to a society of extremists: daredevils and opportunists who take every risk in the hope they turn out to be justified, and unassertive, overly principled or cowardly people avoiding all risks for the fear of being blamed.

Responsibility and blameworthiness for actual outcomes

But do actual consequences escape an agent’s control in such a way that she cannot be

²⁰ Rachels and Rachels (2010: 162) point out that utilitarianism in general is demanding because it demands agents to always do what has the best overall consequences for everyone concerned. For example, one should give away one’s money until the point at which further generosity would be more harmful to oneself than it would be helpful to others. Most people are reluctant to fulfil this demand because it prevents them from living normal everyday lives.

considered responsible or to blame at all? An element of control is generally seen as a precondition for responsibility and blameworthiness. If an agent has no control over the action she performs or the way they develop into outcomes, she cannot be ascribed responsibility or be appropriately blamed for her actions or their outcomes. I argue that luck and the choices others make do not annihilate an agent's control over an uncertain situation. The teacher still decides how, or to what extent, she cares for the children under her supervision. She can take precautions or make less risky decisions. A driver still makes decisions about driving in the first place, what car to drive and how to drive it. Because agents retain elements of control over their decisions and actions, they also retain part of the responsibility – and blameworthiness – for their outcomes.

I am also convinced that agents have a choice when it comes to responding to the actual outcomes of their actions, even if these outcomes escape their control. If the teacher or the driver shrugs off the death of a child with a simple 'I couldn't help it', 'I did what was within my power' or 'better luck next time', that would be considered an obtuse, inappropriate, even morally wrong reaction – which in itself can be blameworthy. It is equally inappropriate if the teacher and the driver would praise themselves for 'saving a child' if no harm occurred. The lucky teacher and driver are recipients of luck just as the unlucky teacher and driver are victims of bad luck. Susan Wolf (1990) introduces a distinction that is helpful here. She differentiates external from internal praise and blame, and argues that from an external point of view, i.e. others blaming the teacher or driver, no distinction can be made between the lucky and unlucky ones. But from an internal point of view, i.e. the teacher or driver blaming herself or himself, the lucky and unlucky ones should judge themselves differently: even though outsiders cannot rightly blame unlucky agents, they should blame themselves. This self-blame can be expressed in the form of remorse, regret, or the wish that things had turned out differently.²¹

In Chapter 8 I will return to the question as to what constitutes a morally appropriate response in unfortunate cases. Here it suffices to state that agents to some extent have control over the outcomes of their actions, as well as their reaction or attitude to those outcomes, and can be judged and held responsible accordingly. The evaluation of their actions should be susceptible to this and not be solely determined by actual outcomes.

²¹ For a more detailed elaboration on regret and actual outcomes of risky actions, see Dickenson 2003: 59 – 64, and Fried 2012a: 243 – 244.

3.2.3 Comparing consequences

The second problem for a utilitarian evaluation based on actual outcomes is how to determine whether an action has the best overall net balance of outcomes, or in other words leads to the greatest amount of good for the greatest number of people. To know this, one must not only scrutinise the consequences of the action under consideration, but also compare those to the outcomes alternative courses of actions would have had if they had been performed. It is difficult – if not impossible – to evaluate whether the action that is performed is preferable to other actions that could have been performed. For one has to then compare the realised consequences of a performed action to the realised consequences of other actions that were not performed. But as Hansson (2013: 24), following Marcus Singer (1977, 1982), points out: “unrealized [*sic*] alternatives have no actual consequences”, making it impossible to evaluate them according to actual criteria. A logical alternative would be to compare the actual outcomes of performed actions to counterfactual outcomes of unperformed actions, i.e. the outcomes that would, could, or might have come about if the considered alternative actions were carried out. However, this seems to be an unfair comparison. The description of consequences of unperformed actions is always incomplete: one can never be as certain about the particularities of counterfactual outcomes as one is about actual outcomes. A counterfactual assessment then remains “vague and uncertain” (Hansson 2013: 25), which makes it an unsteady basis for moral evaluation.

3.2.4 Cold comfort of hindsight

The last difficulty for actual outcome utilitarianism is that it provides us with hindsight as the sole basis for evaluating risk impositions. Now firstly: when has an action ever reached an end-point, at which all its consequences have materialised and one can truly look back and judge an action in hindsight? The Chinese politician Zhou Enlai (Enlai in McGregor 2011) is sometimes – mistakenly, but expressively – quoted to have said that “It is too early to say” what the impacts of the French Revolution are. But apart from hindsight being epistemologically problematic, it is also practically impossible. Only under conditions of strict determinism would one be able to know the actual outcomes of possible courses of action before acting, and use hindsight as an evaluation method in the present. But the future state of the world is not set in stone. There is a deterministic element to the state of the world, for it could, and would have been, different if things

had gone differently in the past. However, the fact that they could have gone differently already indicates indeterminism. Also, how things are in the present influences – but not determines – how things will be in the future. There will always be an element of uncertainty and a need to make choices. Moreover, if the world were determined free will would not exist and ethical reasoning would be unnecessary.²² It would not make sense to speak of the evaluation of actions, of right and wrong choices, of acceptability or justifiability of risk impositions, or of risk at all. There is no place for moral language or talk of uncertainty in a determined world. An undetermined world is then a necessary precondition for a discussion about the evaluation of risk impositions. The outcomes of most events are not determined, and one does not know in advance what the actual consequences of one's actions will be. As Peter Bernstein (1998: 229) remarks: "Uncertainty makes us free". But it also calls for moral judgements and decisions, and for ethical guidelines that help one make justifiable choices under uncertainty and risk.

In an undetermined world, hindsight as a method for moral evaluation is especially useless when outcomes are very uncertain or completely unknown. Consider a government deciding whether to spend part of its defence budget on researching alien life and preparing for an attack from outer space. Recognised scientists, such as Stephen Hawking (BBC News 2010), have claimed that it is perfectly rational to assume that intelligent life exists elsewhere in the universe, and that it might very well not be friendly, perhaps even violent, to human life. Following a utilitarian approach based on actual outcomes provides no action guidance whatsoever for the government. It must randomly choose a course of action – to invest or not to invest in extra-terrestrial research and defence – rendering the evaluation of its decision utterly arbitrary.

Judith Jarvis Thomson (1986: 185) states that "[w]e do not think that the permissibility of acting under uncertainty is to be settled only later, when uncertainty has yielded to certainty". Clearly the acceptability of a risk imposition cannot depend merely on whether it materialises into harm. By relying on hindsight as an action-guiding principle one is left without guidance, for one does not have the luxury of looking back at the time of decision-making. Actual outcome utilitarianism therefore fails to live up to the

²² The compatibilism vs. incompatibilism debate is about whether free will can exist in a determined setting. I do not enter this debate, as I personally do not see world as determined. Moreover, free will or the ability to choose is consistent with and necessary for moral responsibility.

fundamental task of any moral theory, which is to guide human actions in a consistent way. As Barbara Fried (2012a: 243) states: “a moral theory that cannot judge whether actions are wrongful until they are completed is not a theory of action at all”. Especially in a context of risk and uncertainty retrospective tools to evaluate a decision or action are hopelessly insufficient. Under those conditions one is very much in need of principles to guide actions and justify decisions before their outcomes are known.

3.2.5 Writing it off

It can now be concluded that utilitarianism based on actual outcomes does not provide a satisfactory account of the evaluation of risk impositions. Firstly, it does not take into account the extent to which actual outcomes are influenced by luck and the behaviour of others. To base the moral appraisal of risk impositions on actual consequences would therefore be unfair to agents, it would incomprehensibly enlarge their responsibility, and it would result in a society of extreme risk takers and risk avoiders. Secondly, such an evaluation cannot be applied because it is impossible to compare the actual outcomes of performed actions with the actual outcomes of unperformed actions. To compare actual outcomes of performed actions with counterfactual outcomes of unperformed actions misses the point of a utilitarianism based on actual outcomes. And thirdly, this form of utilitarianism provides hindsight as the only action-guiding principle, which performs badly under conditions of risk and uncertainty.

3.3 The focus on hypothetical outcomes

An obvious solution to the problems mentioned above is to switch the focus from actual to hypothetical outcomes, i.e. outcomes that might result from an action. This is a powerful alternative to hindsight, and a promising guide for acting and decision-making in contexts of risk and uncertainty. This switch, namely, liberates one from the overly limiting focus on actual consequences and enables one to evaluate a risk imposition at the time when the decision is made to perform the action, so before its outcomes have materialised.

Hypothetical consequences can be merely possible outcomes that could result from an action. But in this variant of utilitarianism the focus is on consequences that are expected to result from an action, outcomes that are probable. An evaluation based on

probable outcomes requires an active stance. An agent cannot excuse himself by saying that he thinks a certain course of action will be beneficial: he needs to make a conscious effort to find out how probable that benefit will be. In other words, the outcomes of his actions must not only be likely, they must be probable (Dickenson 2003). A utilitarian adhering to this line of thought could claim that one has a duty to perform the action that will most probably result in the best overall outcome (Prior 1956). A risk imposition can then be permissible if that action has the highest probability of leading to the best overall net balance of consequences compared to its alternatives. This reasoning feeds into the idea that “individuals can justifiably be inflicted with ever greater levels of risk in conjunction with increasing gains” (Schroeder 1986: 508).

In the following paragraphs, I will discuss the advantages of, and difficulties for, the most well-known interpretation of hypothetical outcomes utilitarianism: expected utility maximisation (EUM). According to this approach an action is right or desirable if it is expected to yield the highest utility compared to other actions. This involves weighing the combination of advantageous and disadvantageous consequences of one alternative against the combination of other alternatives. This utilitarian perspective is the most commonly used approach to risk: it is the standard rule used in theoretical models of decision-making under uncertainty and risk such as cost-benefit analysis and probabilistic risk analysis.

3.3.1 Imposing a risk to maximise expected utility

The utility or disutility of outcomes can be measured in different categories. Bentham (1970) identifies seven categories, namely, certainty or uncertainty, intensity, duration, extent or scope, propinquity, fecundity, and purity. To arrive at an estimate of the expected utility of a considered course of action, one has to calculate the utility of each possible outcome. One does so by multiplying the measure of (un)certainty, i.e. the probability, with the other measurements. I find Bentham’s last three categories – of propinquity, fecundity, and purity – quite vague. The other three seem to make more sense: intensity refers to how strong (good or bad) the effects of the action are; scope refers to who or what is, directly or indirectly, affected by the action; and duration refers to how long each outcome is in effect. I then arrive at the following calculations:

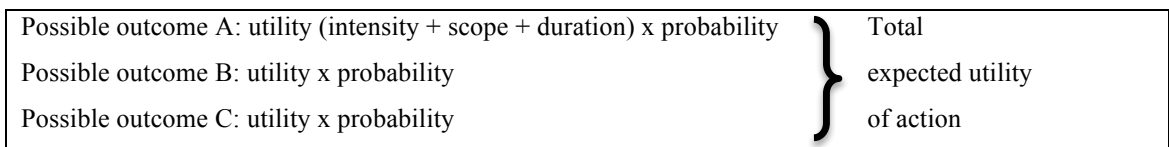


Figure 2: Calculation of the total expected utility of an action.

EUM requires one to choose the course of action with the highest expected utility. A risk-imposing action is then justified – or even required – if the possible benefits associated with it outweigh the possible harms in terms of their utility and probability. Returning to the example of the teacher and the outdoor trip, she can use the criterion of EUM to make her decision. She has to start by determining the alternative courses of action: taking the children to the lake, taking them to the strawberry farm, or staying in the classroom. She then forecasts the possible outcomes of each alternative: for decision-making purposes, she narrows them down to the children all returning home safely, and the occurrence of the death of one child. She then assigns a numerical value to the utility or disutility (a number representing intensity, scope, and duration combined) as well as to the probability of each possible outcome of each alternative course of action.²³

Action	Possible outcomes	Utility Disutility	Probability	Calculation (UxP)-(DxP)	Expected (dis)utility
Lake trip	All home safely	U=95	10	(95x10)-	-8050
	One death	D=100	90	(100x90)	
Farm trip	All home safely	U=95	95	(95x95)-	8525
	One death	D=100	5	(100x5)	
Staying in classroom	All home safely	U=75	99	(75x98)-	7325
	One death	D=100	1	(100x1)	

Table 2: Expected (dis)utility calculations of teacher’s alternatives.

Let us assume that, as shown in Table 2, the teacher assigns a utility of 95 to the outcome that all children return home safely after either a trip to the lake or to the strawberry farm. She bases this number on the prospect that the children will learn much and enjoy themselves, but also on the consideration that some children might get homesick or sustain minor injuries. When she opts for staying in the classroom, the outcome that the children return home to their parents safely she assigns a utility of 75,

²³ The numerical values used in this example are complete guesses. Whether these numbers truly represent the utility and probability of choice alternatives is beside the point: the example is merely meant to show how utilitarian calculation can function in practical decision-making situations.

seeing that the learning and enjoyment curve of the children will be smaller than if she would have taken them on a trip. The outcome of the occurrence of one death as a result of any of these activities she assigns a disutility value of 100, assuming that nothing good will result from the death. Now with respect to the probabilities she forecasts that the occurrence of a death will be very probable in the lake trip case, improbable in the farm trip case, and extremely improbable in the case of staying in the classroom. This means that the corresponding alternative outcome of all the children returning home safely is very improbable in the lake trip case, very probable in the farm trip case, and almost certain in the case of staying in the classroom. Now she can calculate the expected utility of each alternative by first multiplying utility times probability for the positive outcomes ($U \times P$), then multiplying disutility times probability for the negative outcomes ($D \times P$), and finally subtracting the latter from the former ($(U \times P) - (D \times P)$). The lake trip ends with an expected disutility of 8050, a trip to the farm with an expected utility of 8525, and staying in the classroom with an expected utility of 7325. She can now base her decision on a comparison between these numbers. According to the rule of maximising expected utility she should take the children to the strawberry farm.²⁴

The EUM approach seems to provide a clear, simple, and intuitively appealing principle for evaluating risk impositions. However, as I will discuss in the following paragraphs, it is not without complications. The approach completely depends on the ability to predict possible consequences of one's actions beforehand, and to ascribe probability estimates to those consequences: both of these can prove to be impossible. Also, the approach can oversimplify and dehumanise the process of determining utilities.

3.3.2 Problems with probabilities

The practical problem with the EUM approach is that moments of decision-making are normally much more complex than clear-cut expressions of probabilities have one believe. To precisely determine the probability that a considered course of action will result in a certain outcome, one needs to know the whole range of possible outcomes an action might have. But how can one be sure that one has taken into account this full range of possible consequences, or that one has calculated their intensity, scope, and

²⁴ If they cannot go to the strawberry farm (it for example might not accommodate group visits), and she has to choose between the lake trip and staying in the classroom, she should obviously opt for the latter.

duration properly? Determining precise probabilities then requires an enormous amount of information about alternatives and their outcomes, rendering it extremely difficult if not impossible (Binmore 2008; Bennis, Medin & Bartels 2010; Gigerenzer 2010; Fleischhut 2012; Hansson 2008, 2013: 26). If one treats real-life choices and actions as possessing determinate outcomes and properties to which one can assign probabilities, one in fact subjectively simplifies complex uncertainty.

According to John Harsanyi (1975) most individuals who are uncertain about probabilities of harm – or levels of risk – consider two decision-making options as reasonable. One could assign equal probabilities to all possible outcomes, or one could rely on the subjective probability estimates of experts. However, the arbitrariness of the first option makes it a rather unhelpful candidate for responsible decision-making. Moreover, experts are sometimes notoriously overconfident in ruling out or minimising the probability of negative outcomes or serious accidents resulting from risky actions (Shrader-Frechette 2010). So far, EUM seems to provide an overly simplistic, subjective, or even arbitrary evaluation of risk impositions.

Unforeseen and unforeseeable consequences

Decisions and actions can also have unforeseen or even unforeseeable outcomes. Consider laboratory experiments that test new treatments, drugs or technologies, or social experiments that investigate the more widespread effects of technological applications or policy interventions. In many of these experiments, complete or statistical information about risks and benefits is not at hand. There might be some knowledge about possible effects of an experiment, but it is impossible to characterise all the risky scenarios that might result from it. Because of this uncertainty or even ignorance about possible effects, unforeseen or even unforeseeable outcomes might result from conducting such research. In the case of testing a new drug or technology it is difficult to identify all risks because of the novelty of the subject matter. In the case of social experiments, the difficulty with identifying risks lies in fact that they are conducted in a more uncontrolled setting and involve many more human subjects than standard laboratory experiments. The uncertainty is even greater when clinical research is combined with social research and novel technologies are tested in the form of social experiments, such as nuclear waste management, the use of Google glasses, or

implementation of geo-engineering techniques.

Even if possibilities can potentially be foreseen, it does not mean that they will be. Human history proves that people often are oblivious to the possibility of harmful consequences of their decisions and actions. The 9/11 attacks of 2001 are an example of unforeseen, but arguably foreseeable, effects resulting from concatenations of causes and effects that are explainable in hindsight. In general, people were not aware that providing military training to Al Qaida, in combination with the lack of enforcement of airspace security, could contribute to an attack on the World Trade Centre. In hindsight, this can be considered short-sightedness, or a failure to notice, and can be explained by the previously mentioned ‘What You See Is All There Is’ mental bias explained by Kahneman (2011). His theory states that when the human mind makes decisions it tends to focus obsessively on phenomena it has encountered before. It therefore disregards phenomena about which it does not have any or incomplete information, and is completely blind to the possibility of phenomena it does not know. When people form a hypothesis about the world, they focus on things they know and neglect the possibility of things they do not know (*ibid.*). The formation of such hypotheses is enforced by the confirmation bias as introduced by risk analyst Nassim Taleb (2007): the mind looks for confirmation of the things it understands and knows, and tends to forget or ignore the unknown. Attempts to forecast possible outcomes of considered actions are then opposed and impeded by the tendency of the human mind to primarily focus on available knowledge, and seek for confirmation thereof. Most people did not even consider a hijacked airplane crashing into the centre of New York City as a possible event before it happened. But after it happened and entered the general consciousness as an observed phenomenon, underestimation turned into an obsessive focus on that possibility realising again (*ibid.*). The idea that terrorism forms a threat to the nation state resulted in the War on Terror, even though the risk an average American citizen runs of being a victim of a terrorist attack is much smaller than the risk of freezing to death or dying by falling down a flight of stairs (Calabresi 2015).

If one is unable, or fails, to identify possible harmful outcomes, one cannot ascribe probability estimates to those outcomes. Also, the fact that the list of consequences is, or might be, incomplete, affects the exactness of the probability estimates of the possible outcomes that are identified. This lack or incompleteness of probability

estimates hampers the ability to forecast which course of action will yield the greatest overall utility. Depending on the EUM principle without acknowledging such epistemic uncertainty then results in actual uncertainty about what should be done in a particular situation (Sollie 2009; Fleishhut 2012).

The importance of the improbable

Even when it is possible to fairly accurately estimate the probability of a negative outcome occurring, it is not always what motivates agents' decisions and actions with regard to that outcome. Consider the building of a nuclear power plant and the risk of an accident. Due to high safety levels, there is a low statistical expectancy of harms, i.e. diseases, deformations, or deaths due to an exposure to radiation poisoning. Moreover, there is a high statistical expectancy of benefits, i.e. cheaper and more widely available energy (Goldemberg 2009). From the perspective of EUM the decision to build the power plant is easily made. In reality, however, such decisions are not that simple, and are often characterised by cautiousness and risk averseness. As Hansson (2013: 26) remarks: "the avoidance of very large catastrophes, such as a nuclear accident costing thousands of lives, is often given a higher priority than what is warranted by the statistically expected number of deaths". EUM cannot morally justify why one in such cases attaches more weight to improbable negative outcomes than to probable positive outcomes. In fact, if building the power plant maximises expected utility compared to not building it, the building is not only justified but also morally obligatory: cautious or risk averse decision-making is then morally impermissible. From a perspective of EUM, a significantly low probability of a negative outcome can invalidate the disutility of that outcome, regardless of the scope, duration or intensity of the possible harm. However, these factors can remain to influence one's moral attitudes, irrespective of their probability. The fact that the EUM approach completely disregards other considerations once they become improbable is problematic: it indicates that it does not acknowledge the importance of the improbable, and therefore renders the approach incomplete.

3.3.3 Problems with utilities

The EUM approach also encounters difficulties when determining utilities needed for the calculation of expected utility. In the previous paragraphs, I already mentioned the technical problem of determining utilities, in the sense that uncertainty about possible

consequences of actions also complicates the calculation of their intensity, scope, and duration. But there are also problems relating to the impartial and impersonal character of the EUM approach and utilitarianism in general. For utilitarianism is an impartial normative theory: it considers all individuals as equal and promotes their aggregate wellbeing. If one follows the objective principle of maximising overall utility one needs to be able to decide what would be the best overall outcome for everybody, or at least the largest group of people. This means that individual advantages and disadvantages have to be aggregated to reflect collective wellbeing. But when one understands such an objective, impartial, and impersonal principle to apply to, and govern, interpersonal morality, one, in the words of Thomas Nagel (1970: 134), “fails to take seriously the distinction between persons. It [the principle] treats the desires, needs, satisfactions, and dissatisfactions of distinct persons as if they were the desires, etc., of a mass person”. From the perspective of EUM the values of probable utilities, i.e. benefits, and of probable disutilities, i.e. harms, are agent-neutral: they are independent from, and unrelated to, individuals, and can seamlessly be transferred from one person to another (Parfit 1984: 27; Nagel 1986: 164–185; Hansson 2003: 295–297).

With regard to risk-imposing actions, then, the EUM approach turns a blind eye to who imposes the risk and who is affected by it, and how benefits and harms resulting from risk impositions are divided between these distinct agents. What counts in the evaluation of risk impositions according to the EUM principle, are overall beneficial and overall harmful outcomes. This however is at odds with moral reality, for when one evaluates specific instances of risk people tend to feel more strongly about harms and dangers that threaten their own livelihood, that of others close to them, and things they feel strongly about. To force people to adopt the perspective of the impersonal and agent-neutral ‘mass person’ is to blur their moral vision, and deny them their personal and agent-centric perspective that necessarily influences their judgement of actions, outcomes, and values. There is no obvious place for such humane partiality in utilitarianism. Also, differences between persons and the distribution of harms and benefits do matter. I turn to these latter problems in the next two sections.

Differences in perception and experience of risk

There are large differences between individuals with regard to their attitude towards

risk: some love taking risks and seek adventure, others are more risk averse and cautious. The EUM principle does not accommodate into its evaluation of risky actions the influence of personal differences on decisions made under uncertainty. Consider the following situation: Bongani, who suffers from severe arachnophobia, finds a spider in his house. He believes it to be a button spider, the neurotoxic venom of which is extremely dangerous, especially to small children. As Bongani is completely overtaken by his deep-seated fear of spiders his daughter, still a baby, crawls in the direction of the spider. Assuming that Bongani is responsible for the wellbeing of his daughter and that he knows button spider venom to be potentially fatal to children, he imposes a risk on her by not managing the risk properly and taking her out of harm's way. It might turn out that it is not a button spider after all, the spider may scurry out of sight, or the baby may crawl the other way, but the particularities of the current situation make it an extremely risky one for the baby. Also, even if Bongani would be bitten while trying to save his child, the risk he runs as an adult of suffering severe complications or even death is much lower. However, his phobic condition makes him perceive and experience the risks involved differently from objective statistics: he thinks he will die if bitten.

The EUM approach can accommodate Bongani's phobia by weighing the disutility of his experience of extreme fear, or the disutility of his death, against the disutility of the baby suffering injuries or dying. But whatever is included in the calculation, from the perspective of EUM Bongani will fairly straightforwardly be allocated the duty to protect his child, and the risk he imposes on her by not doing anything is an unacceptable one. If from an objective or eagle eye perspective a certain course of action is expected to yield the highest possible utility, one has to see it through, even if there are small or unlikely risks involved and even if one has a risk averse personality. EUM then "fails to respect the distinctiveness of people's responses to risks" (Teuber 1990: 247). Even though people should commit themselves to not letting their lives be dominated by irrational fears and beliefs, they should also not be expected to neglect their emotions and experiences. There is something wrong about the way in which the EUM approach disregards reasons and deliberations that are specific, relative, and unique to distinct agents, and the influence of personality traits on their identification and assessment of risks.

On a social level, there are also differences in risk perception. South African Bongani might be afraid of spiders, but members of the Piaroa community in Venezuela hunt, fry, and eat goliath tarantula spiders. Piaroa Indians surely know that hunting goliath tarantulas involves certain risks, but their assessment of these risks differs wildly from people outside their community. One's personal and cultural make-up then seems to influence one's perception of the world and the chances and dangers in it. Sociological and psychological research confirms that cultural and subjective differences influence the identification and experience of risk (Douglas & Wildavsky 1982; Otway & Thomas 1982; Otway & Von Winterfeldt 1982; Slovic *et al.* 1982; Bradbury 1989; Slovic 1999).

The reality of individual and group-specific risk perception contributes to debunking the dominant objective-scientific understanding of risks as either facts or personal illusions. It also complicates the possibility of evaluating risky actions according to the impartial criterion of maximising expected utility. It shows, namely, that there is not one objective, impersonal, or 'right' perspective from which to evaluate risky actions and to judge whether they will maximise overall utility. Every appraisal is done from a specific standpoint, and this should be acknowledged by an ethics of risk aimed at guiding decision-making under risk and uncertainty.

What should also be accounted for is that in practical instances of decision-making people are often not capable of understanding the statistical information needed for the precise calculation of expected utility. The possibility of objectively and precisely calculating probabilities and utilities has already been questioned, but when people start assigning subjective estimates when decisions need to be made, expected utility calculations tend to become even more arbitrary. The EUM approach then depends too heavily on the assumption that people are calculative and rational decision-makers, which, as I pointed out in Chapter 2, they are often not. Psychological studies show that individuals differ in their sensitivity to uncertainty and missing information, and their ability to understand, formulate, and engage with probability estimates (Natalier & Wilson 2008; Kahneman 2011; Fleischhut 2012). For example, Jens Zinn (2008: 443) points out that smokers, confronted with the probabilistic fact that half of all smokers die from lung-related diseases, "can exploit this uncertainty to argue that they are in the 'safe half' because of special personal characteristics such as being a 'careful person', having 'good genes' or 'living a balanced life'". Normal people do not always – and

some do not ever – calculate the possibilities of future harm, nor weigh up costs and benefits of different alternatives. Truly maximising overall utility might then be an overly ambitious goal for the layman, or the individual human mind.

Permitting unfairness

Because the EUM approach promotes overall wellbeing, the wellbeing of a collective ‘mass person’, it is insensitive to where the potential benefits and burdens of risky actions accumulate. It can therefore justify exposing one person or group of people to the possibility of harm by referring to a) a larger possibility of benefit or advantage for someone else or another group of people, or b) the prevention of a lesser risk to a larger group of people. For example: risks of anthropogenic climate change have for a long time been justified in a utilitarian fashion by referring to large benefits in terms of progress, wealth, and power associated with industrialisation and the emission of carbon dioxide. This justification is insensitive to the fact that only a small and already developed part of the world’s population continues to reap the benefits, while the risks are systematically imposed on a significantly larger, and more vulnerable, group. If the benefits resulting from a risky action are expected to be greater than the potential harms, the EUM perspective justifies the exposure of some to risk for the benefit of others.²⁵ Such justifications however contradict moral intuitions concerning interpersonal fairness, and culminate in what Madeleine Hayenhjelm and Jonathan Wolff (2011: e37) call “the problem of ‘permitted unfairness’” for consequentialist theories.

Since climate change is a complex and controversial topic, consider the following simplified situation to make the problem of permitted unfairness more tangible. A tunnel is being constructed through a mountainous area. The vibrations of the drilling project have caused rocks on the slope of one mountain to shift in such a way that a rock avalanche is imminent. There is one mountaineer in the area who is experienced enough to hike up and secure the rocks with a safety net. But once he has put the net in place he will have blocked off the safe way back down. He then has to descend via an

²⁵ This attempt at justification had some argumentative force when benefits of industrialisation were reaped in the present but harms remained merely probable, i.e. risks. Now that the risks of carbon dioxide emissions and connected changes in the world’s climate systems become reality, it becomes less convincing. Moreover, some climate experts even claim that the future harms of climate change will eventually completely reverse the current benefits gained from industrialisation. As such the disutility expected to result from the emission of carbon dioxide outweighs its expected utility.

extremely dangerous route: 90 percent of the people who have taken this route have died. The alternative is to do nothing, which will not put the mountaineer at any specific risk but expose the 10 inhabitants of a village at the bottom of the mountain to a 0.9 percent chance of being killed by the rock avalanche. The table below shows the calculations of the expected disutility of both options, with (M) standing for the mountaineer, and (I) for the inhabitants of the village. The probability that the inhabitants will live if the mountaineer secures the net, as well as the probability that the mountaineer will live if he does not go up the mountain, are both estimated at 95 percent: this incorporates the chance that even in those cases the inhabitants and the mountaineer respectively could die of other causes.

Action	Possible outcomes	Utility Disutility	Probability	Calculation (UxP)-(DxP)	Expected utility
(M) secures net	(I) live	U=10	95	(10x95)-	860
	(M) dies	D=1	90	(1x90)	
(M) doesn't secure net	(M) lives	U=1	95	(1x95)-	86
	(I) die	D=10	0.9	(10x0.9)	

Table 3: Expected utility calculations of mountaineer's alternatives.

Seeing that the expected utility of the first option (i.e. mountaineer secures net) outweighs that of the second option (i.e. mountaineer does not secure net), the EUM approach demands that the mountaineer has to venture up the mountain to secure the safety net. To maximise expected utility, one person must be exposed to an extremely high risk of death in order to shield 10 people from a significantly smaller risk of death. The problem of permitted unfairness becomes even more apparent if the probability of the inhabitants being killed by a rock avalanche in the second option is reduced, or the probability of the mountaineer dying on the dangerous route in the first option is increased. Even if those chances are extremely low or extremely high respectively, the expected utility of the second option will still be lower than that of the first option, merely because of the difference in the number of people benefitting from the alternatives.²⁶

²⁶ James Lenman (2008) makes the interesting point that utilitarianism provides no guidance when the expected utility of alternative courses of action is the same: it cannot explain the difference between killing 20 people out of 20 million, or imposing a risk of 1 in 1 million on 20 million people.

The utilitarian calculus, characterised by a strict disregard for individuals or minorities, holds that one life is worth less than the lives of ten people combined. But this does not sit well with general moral attitudes, which are far less cost-benefit orientated than the simple EUM principle presents them, and which require that people be treated and respected as individuals. As J. E. J. Altham (1984: 23) points out, it might be perfectly fine if an individual chooses to run a risk, but it is wrong to choose for someone else that he or she should run it. The mountaineer might then freely and voluntarily choose to go up and secure the net, but it would be wrong to force him to do so. Permitting unfairness on the basis of numbers then “reflects a serious and ineradicable flaw in utilitarian-based legislation theories. None of these theories adequately addresses a major anxiety of modern society: the fear that each individual inevitably will be overborne by society's pursuit of collective goals” (Schroeder 1986: 507).

3.3.4 Why EUM does not work

I conclude that the maximisation of expected utility does not provide a satisfactory account of the evaluation of risk impositions. Often the two conditions on which it rests, probability estimates and utility determinations, prove impossible to formulate. Firstly, the ever-present possibility of unforeseen or unforeseeable consequences increases the level of uncertainty about probabilities, which are indispensable for a proper calculation of expected utility. Secondly, improbable but very undesirable outcomes sometimes determine the overall evaluation of risk-imposing actions. Thirdly, the impartial and impersonal goal of maximising overall wellbeing does not account for the distinction between persons. There can be vast differences between individual and social perceptions and experiences of risk. And fourthly, understanding persons as impersonal bearers of want and needs allows unfair actions that expose some to risk for the benefit of others. This disregards other moral considerations such as individual rights and fairness as weighty influences on the evaluation of risk impositions.

3.4 Conclusion

The question guiding this chapter was: *Does utilitarianism provide a convincing evaluation of risk impositions?* I discussed that utilitarian ethics runs into significant problems when applying its rules and principles to situations of risk and uncertainty, and therefore it cannot provide a complete account of the appraisal of actions involving

risk to others. But even though a utilitarian perspective on risk is not unproblematic, its core principle of determining the moral status of an action by reference to its consequences should not be completely disregarded. To do so would be to throw the baby out with the bathwater, because consequences, as well as their probabilities, do play an important role in the evaluation of risk impositions. I will return to this in the following chapters.

4. THE DEONTOLOGICAL PERSPECTIVE

4.1 Introduction

The most fundamental problem of a utilitarian evaluation of risk impositions is that it straightforwardly allows, or even commands, imposing risks on an individual (or a group of people) if such impositions have large enough possible returns for another individual (or society as a whole). By calculating potential costs and benefits according to an aggregative procedure across individuals, utilitarianism fails to take into account the separateness of persons. The search therefore continues for an answer to the second research question: *Do mainstream ethical theories provide a convincing evaluation of risk impositions?* In this chapter, as well as the following two chapters, I approach this question from the perspective of normative theories that aim to protect individuals against such disadvantages: deontological ethics, rights-based – or libertarian – ethics²⁷, and contractualist ethics. These ethics are based on the conviction that human beings have inherent value. Any action or decision should then respect human beings as persons, and cannot – and should not – merely be justified by reference to their actual or hypothetical outcomes, however useful, beneficial, advantageous or even morally required those outcomes may be. In contrast to utilitarian and other consequentialist theories, which are teleological in their orientation, deontological, rights-based, and contractual theories specifically refrain from letting their moral appraisal depend on outcomes, and can therefore be considered non-consequentialist theories (Fried 2012a). In this chapter I focus specifically on deontology, and the central question in this chapter is then: *Does deontology provide a convincing evaluation of risk impositions?*

Just like utilitarian ethics, deontological ethics focuses on the rightness of actions. Both types of ethics ask the question: ‘How should I act?’ instead of the virtue-ethical question: ‘What kind of person should I be?’ (Roeser 2012). But where utilitarianism understands the rightness of actions in terms of the goodness of their consequences, deontology sharply diverges from this idea by stating that some acts are just not right, like lying, stealing or killing, however preferable, beneficial, or useful their

²⁷ Deontological and rights-based theories approach the principle of respect for persons from the perspective of duties and rights respectively. Even though many duties have corresponding rights, I discuss them separately. As will become clear later on, a deontological approach to the acceptability of risk impositions highlights different important aspects and runs into different problems compared to a rights-based approach.

consequences. The rightness of an action depends on its adherence to and strict observance of moral rules. *Deon* means duty in Greek, and the action-guiding principles deontological theories provide come in the form of duties, obligations, strict prohibitions, and authoritative requirements.

The 18th century philosopher Immanuel Kant is seen as the intellectual father of this branch of normative thinking. He argues that one should have a rational conviction and dedication to fulfil one's duty for the sake of fulfilling one's duty alone, regardless of the produced consequences (Hallgarth 1998). By stressing formal adherence to rational moral rules, Kant (1996) uncouples morality from consequences and grounds it in human motivation, intention, or what he called the 'good will'. What matters is not that an act leads to good outcomes, but that it is performed with good will and the right intention, i.e. that it is in accordance with moral duty. This tends to make deontology a less practically tangible theory than utilitarianism, which leads Terje Aven (2007: 304) to describe utilitarianism as 'an ethics of consequences' and deontology as 'an ethics of the mind'. There are many ways in which Kant's purely rational theory of duty diverges from intuitions, but deontological thinking in general does capture how people intuitively think about moral issues. For example, most people find it wrong to cause harm or to break promises, and deem it right to help others and treat them with respect: these are intuitively understood moral rules. For most people then, it is not only the outcome that counts when evaluating an action: they also incorporate deontological assessments of intentions with which they are performed and their adherence to intuitively endorsed moral rules. Kant rationalises intuition and argues that it is one's duty to adhere to these rules: if one rationally explores how to act, one cannot come to any other conclusion than to follow these rules. Deontology then is rule ethics: it considers an action right or wrong depending on its adherence to rational moral rules.

Kant argues that there are different kinds of duties. There are conditional duties, which are dependent on situational or personal factors and come in the form of 'if X, then do Y'. For example, 'if you want to lose weight, then follow a low-carbohydrate diet'. These are mostly positive duties that urge one to actively do something, and the strength of such demands is context-dependent: it would not make sense to claim that it is obligatory for any person in any place at any time to follow a low-carbohydrate diet for example. Positive obligations are then hypothetical in the sense that they are optional,

and Kant therefore calls them imperfect duties. There are also perfect duties or, in Kantian terms, categorical imperatives. These duties come in the form ‘do Y’, meaning that they are absolute, unconditional, and should be adhered to at all times. These are mostly negative duties, such as prohibitions against harming, killing, stealing, or lying. To determine what such unconditional duties exactly entail, Kant composes three rules. The first rule states that one must act according to that personal rule of conduct, or a maxim, of which one can always at the same time will that it is a universal law: this is called the Formula of Universal Law. The second rule states that one must always act so that one treats persons as ends and never merely as means to an end: this is the Formula of Humanity. The third rule states that one must act so that one treats the will of oneself and other persons as being capable of autonomously legislating universal laws: this is the Formula of Autonomy (Kant 1996; Hallgarth 1998).

This set of rules embodies the principle of respect for persons, and generates the principle of non-maleficence. This is the duty not to harm others, or to avoid harming others’ physical and mental wellbeing, safety, and happiness. For Kant, the duty not to harm others is a categorical imperative, an absolute moral requirement that must never be violated. For if one causes another person harm one contradicts the three rules. One can never will that everyone is always allowed to perform harmful actions, and one does not respect the other as a person with intrinsic value and the capability to make moral decisions by harming him. Because non-maleficence is something that all persons owe to all other persons by virtue of both being human, some have denoted it a natural duty, a duty one has regardless of the acts one performs (Rawls 1971: 114; Simmons 1979: 13; Schroeder 1986: 495). It is this principle of non-maleficence that is of fundamental importance when evaluating risk impositions from a deontological perspective.

4.2 Risk impositions and the duty not to harm

Risk impositions are by definition actions that expose others to the possibility of harm, loss, disadvantage, or any other setback of interests. As mentioned in the previous paragraph, the Kantian rules generate the duty not to cause others harm. The question is whether risk impositions can be in accordance with this duty or, phrased negatively, if risk impositions violate the principle of non-maleficence. One has a duty not to harm others, but does one also have a duty not to expose others to a possibility of harm? Does

one have a duty not to impose risks? One is for example prohibited to perform actions that will undeniably harm others, such as firing a loaded gun at innocent people walking on the street. Now does this prohibition also apply to actions that will not directly harm, or will not certainly harm, but that are likely to, or could possibly, have harmful consequences? Think of aiming a loaded gun at passers-by, playing with the trigger of a gun in the vicinity of others, or even just carrying a gun in a public space. What makes firing the gun wrong is that harm will be unduly inflicted on other persons. In the other three actions harm is not necessarily, but only probably or possibly, unduly inflicted on others. Can those examples then be considered wrong because of this probable or possible harm? Hansson (2003: 298, 2013: 29) calls this the extension problem for deontological theories: whether deontological rules, applicable to cases with determinate outcomes, can be extended to cases with indeterminate outcomes.

There are a couple of ways in which the duty not to cause harm can be understood, and each alternative perspective has a different judgement about the permissibility of risk impositions. Firstly, the duty can be understood in the Kantian, categorical sense of an unconditional and absolute demand, i.e. a duty not to impose any risk of harm on others. Such a duty would prohibit every increase in the possibility of harm and therefore render even the imposition of the slightest risk unacceptable. Secondly, one can imagine a cut-off point at which the duty not to harm ceases to be valid, allowing risk impositions if they are improbable or otherwise insignificant. Thirdly, the duty not to harm can be understood in relation to other important duties, most importantly the obligation to do good: to foster the happiness of others, as well as their health, development, and safety, and to increase general wellbeing. This principle of beneficence has to be weighed against the principle of non-maleficence when evaluating risky actions. A risk imposition, and its implicit violation of the duty of non-maleficence, can then be considered justified if it potentially brings about benefits that outweigh the possible harms, and that the risk-imposer is obliged to bring about according to the principle of beneficence. In the following paragraphs these three alternatives will be discussed.

4.3 Alternative one: an absolute duty not to impose risks

Returning to Hansson's question of the extension of moral, and in particular

deontological, rules, the answer is simple: “a prohibition to bring about a certain outcome implies a prohibition to cause an increase in the probability of that outcome (even if the increase is very small)” (Hansson 2003: 298). The prohibition to cause harm then entails a strict prohibition to make the occurrence of harm probable, likely, or even merely possible. This is a binary and uncompromising perspective on the principle of non-maleficence: an action either increases the chance of harm or it does not, and if it does, then it is unacceptable. Therefore, all risk impositions, which are by definition actions that increase the possibility of harm, are considered impermissible.

4.3.1 Moral differences between probabilities

It is obvious that deontological ethics formulated in absolute terms is overly demanding, especially when it comes to risks. Firstly, it does not account for the moral difference between slight, larger, or major probabilities of harm. Consider actions that impose a small possibility of harm on others, like standing next to a window and the risk of falling out on top of someone else, putting out the garbage and the risk of someone tripping over the garbage bags, or walking on the pavement and the risk of bumping into someone. Most people intuitively judge such actions differently than conduct that imposes a significant probability of harm on others, such as driving fast through a suburban area, smoking near a petrol station, or throwing a brick from a building onto a busy street. An absolute interpretation of the duty not to cause others harm does not explain why people deem some risks negligible and others not.

4.3.2 Deadlocking social life

Secondly, one should not even want to eradicate risks altogether, even if some expose others to a significant probability of harm. For there are many significant risks that are accepted nonetheless, with certain precautions, because of their social productivity and usefulness. One can think of the risks associated with construction work and driving. These risks are socially accepted to a large extent because they increase efficiency of, and pleasure in, human life, and are controlled by safeguards such as construction regulations and speed limits. Of course, to say that risks are socially accepted does not necessarily make them morally acceptable (Taebi 2016). But prohibiting actions purely on the basis of the fact that they increase the possibility, albeit remotely, of harming someone would mean prohibiting most actions altogether, or it would at the very least

make social life impossible. To do so would lead to what Hayenhjelm and Wolff (2011) call the ‘problem of paralysis’: the deadlocking of social life.²⁸ In order to make interactions between persons possible at all they need to be allowed to perform actions of which one knows that performing them will expose others to a small chance of harm. To then make such interactions efficient and pleasant they need to be allowed to expose others to sometimes significant, but controlled, possibilities of harm. One simply cannot, and should not want to, rule risk out from life completely: “in practice it is impossible to obtain a zero risk as anything more than a vision when facing uncertain future events and consequences” (Ersdal & Aven 2008: 203).

4.3.3 Rejecting absolutism

An absolute interpretation of the duty not to harm as a duty not to impose risk of harm has to be rejected. Questions that any theory of permissible risk impositions has to answer are then not if, but “When [...] people [can] knowingly impose risks on each other” (Wolff 2006: 410), and “where to draw the line [between permissible and impermissible harms]” (Fried 2012a: 235). An absolutist deontological perspective is unable to answer these questions because it cannot make sense of the fact that some risks are accepted – and acceptable – because they are by-products of activities that are necessary, productive, or otherwise advantageous.

4.4 Alternative two: drawing a line (or two)

To counteract the strictness of alternative one, Fried’s question can be answered in a literal sense by drawing a line that indicates where risks tend to become so insignificant that they are considered negligible, and where the principle of non-maleficence therefore ceases to be valid. The idea is that exposing others to negligible risks is not necessarily a breach of the duty not to cause others harm. The extent of this duty depends on the likeliness and severity of harm: the more likely or severe harm is, the less acceptable an action is that exposes people to such harm. Legal scholars John Goldberg and Benjamin Zipursky (2002: 1689) acknowledge that drawing such a principled line is by no means easy. With regard to risks of HIV infection they admit that: “A [...] very difficult question is whether the duty to be vigilant of causing a threat

²⁸ This problem is also mentioned or elaborated by Altham (1986), Thomson (1986), and Hansson (2003, 2013).

of HIV infection involves a duty not to cause actual exposure to HIV or a duty not to cause possible exposure through a medically possible means of transmission”.

Now if a risk is very unlikely, very small, or both, one generally considers it negligible. Likelihood and severity, as factors that influence the negligibility of risk impositions, are the most obvious candidates for establishing a cut-off line for moral scrutiny. This line distinguishes negligible from significant risk impositions. Because the duty not to cause others harm is in effect in the case of significant risky actions, these are unacceptable according to this form of deontological reasoning.

4.4.1 A duty not to impose likely or probable risks

Likelihood is an unscientific expression of the chance that an event will occur, arrived at through common sense, whereas probability is the numerical measure of likelihood, established by means of statistical calculation. If a certain estimate of likelihood or probability is taken as the cut-off line, one states that if the likelihood or probability of a harm occurring is lower than the cut-off estimate, the risky action that imposes the harm is permissible. Drawing a line based on likelihood or probability has different advantages and disadvantages, and therefore both options will be discussed consecutively. The idea of determining whether the duty of non-maleficence is in effect by referring to a common-sense limit of likely harm is intuitively attractive: people often make use of differentiations between likelihood and unlikelihood in their everyday assessments of risky actions. It is for example generally considered acceptable to walk on a busy sidewalk because it is very unlikely one will harm another by doing so: walking on a busy sidewalk is not seen as a breach of the principle of non-maleficence. But it is considered unacceptable to drive through a bustling town at night without headlights because of the likelihood of an accident: this action is considered as a breach of the duty not to cause others harm.

A likelihood threshold

This kind of reasoning is also applied in tort law. An example is the Dutch ‘Swishing branch’ court case (Dutch: *Arrest Zwiependende tak*, HR 09-12-1994, NJ 1996, 403). Four friends were walking through a forest, and one of them, Werink, kicked against a loose branch. The branch then swished back and hit one of his friends, Hudepohl, in the eye.

As a result of this unfortunate event Hudepohl lost his eyesight. He pressed charges against Werink, claiming that the latter had engaged in careless and inexcusably risky behaviour, thereby imposing an unacceptable risk of harm on him. The Dutch High Court denied Hudepohl's appeal, arguing that it was not likely that Werink's action of kicking against the branch would result in Hudepohl's loss of eyesight. The Court stated that the possibility of an accident was inherent in Werink's action, but that this possibility did not make the conduct unlawful. "Such risk-creating behaviour is only unlawful, if the degree of likeliness of an accident (incurring harm as a result of someone else's behaviour) as a result of that behaviour is so high, that the perpetrator should have refrained from acting as such according to standards of care" (free translation from Dutch statement, HR 09-12-1994, NJ 1996, 403). Here one can clearly distinguish the argument that risk-creating or risk-imposing behaviour does not necessarily forsake the duty not to cause others harm: this is only the case if the harm such behaviour creates or imposes exceeds a certain limit of likeliness.²⁹ According to the Dutch High Court, the likeliness of the harm Werink imposed on Hudepohl through his act of kicking against the branch fell below that limit. Subsequently Werink could not be held accountable for the unfortunate outcome of the event, and neither could he be said to have violated the duty not to cause others harm.

When the court stated that it was not straightforwardly likely that the branch kicked by Werink would swish back and hit his friend in the eye, it addressed a common-sense idea of the likeliness of that event, as a reasonable person would understand it. But what determines the reasonableness of an assessment of the degree of risk and its likeliness in any given situation is debateable. Also, assessments of likeliness might differ per individual and social perspective. There does not seem to be only one correct answer. The arbitrariness or subjectivity of likeliness assessments could be overcome by expressing likeliness statistically in terms of probability: the line between permissible and impermissible risk impositions would then be drawn with reference to a probability estimate of harm.

²⁹ In tort law, the duty not to cause others harm is understood in relation to the duty to care for others (Fried 2012a: 232). The duty to care is a legal obligation to "adhere to a standard of reasonable care while performing any act or omission that could foreseeably harm others" (Icheku 2011: 118). As the Swishing branch case shows, in tort law both duties are considered to be in effect only from the moment that the risked harm is foreseeable, i.e. exceeds a certain degree of likeliness.

A probability threshold

The idea behind a probability threshold is that it provides a more objective and precise differentiation between likely and unlikely events. One could propose a probability limit of 0.000,001 for the prohibition to harm another person, and argue that the duty not to cause others harm applies to actions that expose others to risks of harm with a probability of 0.000,001 and higher. If the risk of harming another person by twirling a bunch of keys is lower than 0.000,001, then walking around while twirling a bunch of keys is not a breach of the duty of non-maleficence. The idea of fixing one numerical limit that demarcates the acceptability of all risk impositions, and making duties applicable in cases of high-probability risks but not in low-probability ones, is explored by Hansson. However, he is quick to dismiss this option because it does not take into account the benefits associated with imposing, and being exposed, to risks. People generally find a risk with a small probability of significant harm acceptable, if taking or being exposed to that risk entails the obtainment of a valuable benefit. But that same small measure of probability of significant harm would be considered unacceptable if it was associated with a risk that did not come with considerable benefits. As Hansson (2013: 30) argues: “Most of us would accept a very small probability [...] of a deadly outcome if it comes from a vaccination against a serious disease, but not if it is caused by food additives that improves the colour of orange juice”. The alternative would be to establish individual probability limits for all risk impositions, but practically this would be quite impossible.

Another important argument against a probability limit from a deontological perspective is that it numerically expresses the value of invaluable things, such as a human life. According to the option of a probability limit of acceptable harm, a risk that imposes a deadly harm is acceptable if its probability is sufficiently low. But even risk impositions that impose an improbable lethal harm can and will sometimes result in death. From the perspective of a probability limit an improbable death of a person could be considered a risk worth taking or accepting. Such an evaluation of deadly risks based on a probability estimate of harm attaches a number to the value of human life. Another way to numerically express the value of life is to determine what one is willing to pay (WTP) to retain it, or how much compensation one is willing to accept (WTA) for the loss of it. But WTP and WTA are utilitarian conceptions that aim to produce the greatest good for

the greatest number of people. As Glenn Blomquist (2015: 16) remarks, a deontologist would categorically claim that “If it is morally wrong that people are exposed to risks of death, then it is wrong to construct a value of life to be used to guide decisions involving risks of death”. From a deontological perspective, a likeliness limit of acceptable harms is more appealing than a probability limit because it does not place a numerical or monetary value on human life and the acceptability of risk impositions. In the next option likeliness will therefore be considered instead of probability.

4.4.2 A duty not to impose severe risks

Another option is to attach the cut-off line to an estimate of severity, and to argue that if the harmful consequence that might result from a risky action is smaller than the cut-off estimate, the risk imposition is permissible. One then has a duty not to impose severe risks. But on the basis of previous arguments one can quite easily dismiss this option as well. For it would mean that one would have to prohibit risks that might be large but very unlikely, controlled by safety measures, and highly beneficial even for the person exposed to risk. Imagine that telecom companies were not allowed to sell any mobile phones because of the risk that they could explode and kill their users. First of all, mobile phones are almost indispensable for a modern lifestyle. Moreover, the risk of a phone exploding is highly unlikely, especially if companies take sufficient safety measures.

Or is it not? In September 2016, telecom company Samsung, lauded for its product quality and innovativeness, had to recall millions of its newly released Galaxy Note 7 smartphone, and in October it was forced to stop their mass production. As it turned out, the risk of this device exploding is not completely unlikely: exploding phones have already ruined cars and resulted in skin burns (Solon 2016; Said-Moorhouse 2016). According to newspaper headlines, the risk of exploding phones is now not only severe, but also likely. The significance of such risks is discussed in the next paragraphs.

4.4.3 A likeliness-severity grid

Understanding the cut-off line in terms of either likeliness or severity does not aid the evaluation of risk impositions. A last option worth discussing is to envision likeliness and severity as two axes making up a grid of four categories, in which risk impositions

can be classified. Risky actions can impose a harm that is likely and big, likely but small, unlikely and small, and unlikely but big. Whether a certain risk imposition breaches the duty not to cause others harm depends on its order of negligibility. And whether a risky action imposes a negligible harm can be decided by determining the classification of the risk imposition in a certain category on the likeliness-severity grid. Recall that risks are negligible if they are unlikely, small, or both. This means that risky actions that impose likely and big harms, such as the risk of selling explosion-prone smartphones, are not negligible and therefore violate the duty of non-maleficence.³⁰ Actions that impose unlikely and small risks are negligible and can be considered as being in accordance with this duty. But the other categories, i.e. likely but small risks and unlikely but large risks, form stumbling blocks for the grid alternative.

Likely but small risks

Actions that impose likely but small harms would at face value be considered negligible and therefore not seen as violations of the duty not to cause others harm. Consider Emma smoking a cigarette in the vicinity of Bill, who is a non-smoker. The harms imposed on Bill are considerably small: he might have to cough or dislike the smell of smoke, but Emma does not cause him permanent damage. However, a necessary condition for this negligibility is that the action is performed once or by one person. If a small but likely harm is imposed constantly, or by many people simultaneously, it ceases to be small. Imagine that Emma is a chain-smoker, that Bill shares an office with Emma, and that Bill and Emma live in a society without smoking laws. Emma now continuously exposes Bill to the harms of passive smoking. An act that in itself only creates a likely but small risk can create a likely and big risk if it is repeated sufficient times. Or consider Bill being in a room with ten other people who smoke: pretty harmless acts of smoking single cigarettes are now aggregated into a collectively risky action that imposes a likely and big harm on Bill.

³⁰ It is alarming that citizens of developing countries are often exposed to likely and big risks, such as risks of climate change, air pollution, unsafe drinking water, road traffic injuries, workplace accidents, poor health care, lack of education, political unrest, and economic instability. Actions or omissions that impose such risks, like emitting vast amounts of CO₂, dumping toxic waste, not maintaining the built environment, not prioritising education, or failing to provide medical aid, can be said to violate the principle of non-maleficence. But the challenge is to determine where responsibilities lie, which agent imposes which risks, and from whom justification can be demanded.

The paradoxical character of this situation can be described as a ‘problem of many hands’. The notion was initially introduced to describe the difficulty of identifying a cause or holding someone accountable for harms to which many individuals contributed (Thompson 1980). It is now also used to denote difficulties with understanding harm and negligibility in cases where many contributors are involved. Climate change is a paradigmatic example of a problem of many hands in this sense: one person’s share of carbon dioxide emissions exposes others to negligible harms, but contributes to significant harms on a collective level (Van de Poel *et al.* 2012; Van de Poel, Royakkers & Zwart 2015). In conclusion: not all risks that fall in the category of likely but small harms fit neatly into the binary distinction between negligible and not negligible, or insignificant and significant. It is not immediately obvious, then, whether a risk that imposes a likely but small harm is a violation of the duty not to harm.

Unlikely but large risks

Risk impositions that fall in the category of unlikely but large harms also do not always adhere to the above-mentioned distinction. Call to mind the example of the nuclear power plant in the previous chapter, which illustrated that people tend to be more cautious and risk averse with regard to risks that impose unlikely but severe harms. This would lead one to assume that the duty not to cause others harms is valid in the contexts of such risks: one is not permitted to expose others to very grave risks, even if it is highly unlikely that these risks materialise into harm. But this would also mean that actions or omissions that impose extremely unlikely risks are impermissible by the standards of the principle of non-maleficence. According to the grid alternative governments for example have a duty to spend a significant part of their defence budget on preparing for an alien invasion, because failing to do so could expose citizens to the risk of an attack from outer space.

4.4.4 Rejecting cut-off lines

Compared to the uncompromising and absolutist first alternative of an absolute duty, the second alternative of a cut-off line is less rigid because it distinguishes significant from insignificant risks. But the latter is still too rigid because it does not differentiate within the categories a cut-off line creates. For example, it does not differentiate between merely unlikely and almost unthinkable risks. Once the harms risky actions impose fall

on the wrong side of the line, other considerations are excluded from influencing the acceptability of risk impositions, such as social necessity, convenience, and acceptability of spending the budget on defence measures against more real threats than an alien invasion.

Whether the duty not to cause others harm is valid with regard to certain risk-imposing actions, is affected by the measure of negligibility of the harms such actions impose. However, negligibility of harms can be difficult if not impossible to unambiguously determine: a negligibility estimate might not be interpersonally shared, or might change depending on how often the risky action is performed. And as was discussed in the above, negligibility alone cannot determine the validity of the duty of non-maleficence: benefits gained from risk impositions, together with their social necessity and acceptance, play a role in this regard. In what follows I will elaborate more on the effect of benefits and the duty of beneficence – as well as other duties – on the strength of the duty not to harm.

4.5 Alternative three: a balancing act of duties

The third alternative allows for a more flexible approach by proposing a gradual and variable understanding of the duty of non-maleficence. The duty is gradual in the sense that as the amount of harm imposed by risky actions increases, the duty of non-maleficence gains validity and becomes a weightier obligation. It is variable in the sense that it is influenced by several factors. Whether, or to what extent, the duty of non-maleficence is valid does not only depend on the likeliness and severity of a risked harm: it also depends on the strength of other duties, which can override the duty of non-maleficence. Apart from not harming others, one might be obliged to keep promises, do good, give back, and act fairly towards others. In any given situation multiple duties may apply, and one has to weigh the various applicable duties in order to arrive at a moral judgement on what should or ought to be done in that particular context.

The 20th century philosopher W. D. Ross (1930) is a well-known advocate of this kind of deontological balancing. He lists seven *prima facie* duties, i.e. duties that apply other things being equal, but that in specific situations can be overridden by other duties. Ross

mentions the duties of fidelity, reparation, non-maleficence, beneficence, justice, gratitude, and self-improvement. By reasoning from *prima facie* duties applicable in a given situation, one can arrive at one's actual duty, or duty proper. Another list of duties or principles with a similar *prima facie*, or *pro tanto*, character is provided by bioethicists Tom Beauchamp and James Childress (2001, 2009). They argue that in biomedical decisions the principles of respect for autonomy, non-maleficence, beneficence, and justice have to be balanced against each other in order to make ethically acceptable decisions.

4.5.1 Imposing a risk to reduce risk for the risk-bearer

In situations in which both the duty of non-maleficence and other *prima facie* duties apply, it is a rule of thumb that the duty of non-maleficence has priority. As the Apostle Paul (Holy Bible (King James Version): Romans 3:8) proclaims: “And not [...] Let us do evil, that good may come”. Avoiding harm is more important than anything else. Consider a father, who has the duty to protect and save his child from a sinking ship. Does this allow him to snatch a life vest from another child in order to save his own? In such situations, duties of justice, fairness, and non-maleficence come into direct conflict with the duties of beneficence and protection. I would argue that – even in such a life-threatening situation – the father's duty to do no harm is weightier than his other duties. I would find it humanely understandable if the father did snatch the life vest to save his own child, but would nevertheless find his actions ethically condemnable: one cannot condone putting an innocent life at risk to bring another to safety. The father's duty proper is then, other things being equal, to bring his child to safety without exposing other lives to risk. The tragedy is that he might be unable to do so.

But what if an agent exposes a person to risk to reduce another risk for that same person? The fact that the benefits of risk exposure now accrue to the person exposed to risk seem to positively influence its evaluation. Consider a mother, taking her child to hospital to receive vaccinations. This is not without risks, as it is possible that the child will not respond well to the vaccine and develop health problems, or that the nurse uses equipment that has not been disinfected. Also, the trip to the hospital can be risky: the mother and child might have to walk, take a bus, or drive, and have an accident along the way. But if the mother decides not to have her child vaccinated, it is exposed to the

risk of contracting – perhaps life-threatening – diseases. The risks to which the child is exposed if they undertake the journey to the hospital seem to be outweighed by the risks it is protected from if it receives the vaccination. The mother's duty proper is then, other things being equal, to take the child to the hospital.

Risk consultants Chris Elliot and Tony Taig (2003: 7) therefore acknowledge that the uncompromising deontological principle that “No person or organisation has a moral right to expose another to risk” in some cases must allow for exceptions. Others can be legitimately exposed to risk when “the person creating the risk is acting entirely to reduce net risk for the other person” (*ibid.*). Such an exception respects the value of individual life. Both the father and the mother in the previous examples, in their role as guardians, have parental responsibilities do act in their child's best interest, to safeguard it, and to adhere to duties of beneficence and protection. However, only in the mother's case do those duties trump the prohibition to expose a person to harm, as the benefits of the risk exposure befall the same person and reduce that person's overall risk exposure.

4.5.2 Imposing a risk to reduce overall risk

In the previous example, the person exposed to risk can also be said to benefit from that risk exposure. But even if the potential benefits and harms do not accrue to the same person, a risk imposition can still be considered acceptable. Consider the example of Nicolas Espinoza and Martin Peterson (2012: 10), concerning a severe type of pandemic influenza that has a high mortality:

Suppose a vaccine for humans has been rapidly developed. Naturally, before the vaccine can be distributed to the population, it must be approved by the medical products agency. [...] There are some concerns about the safety of the new vaccine. Preliminary results indicate that it may cause serious cardiovascular health risks to the elderly, even though it is likely to be safe in all other respects. No other vaccine is available.

It seems that the most reasonable option in this situation is to approve the vaccine. A pandemic and possibly lethal influenza would pose such a serious and widespread threat that the demonstrated benefits provided by administration of the vaccine outweigh the

known risks.³¹ The duty to help the majority of the population is stronger than the duty not to inflict harm on a minority. The duty of non-maleficence is then outweighed by the duty of beneficence, i.e. the duty to maintain or increase general wellbeing. This is not only because of the difference in the number of people aided and affected, but also because the vaccine will *most likely* benefit the majority, whereas it will only *possibly* harm a minority. Also, the fact that there is no available alternative contributes to the acceptability of imposing cardiovascular health risks on the older part of the population.

4.5.3 Critique on balancing

According to Ross (1930) as well as Beauchamp and Childress (2001, 2009), it might be difficult, or even practically impossible, to know which principles actually override others in a given situation. Despite this, they believe it is always possible, at least theoretically, to conclude what the duty proper is. Espinoza and Peterson (2012) argue on the contrary that determining the duty proper is not so straightforward: the principles of non-maleficence and beneficence are sometimes incomparable and therefore trade-offs between them are impossible to make. In the vaccine example the two situations which have to be compared are a) immunising the majority against a possibly lethal influenza but exposing a minority to the risk of possibly lethal cardiovascular disease; or b) not exposing a minority to the risk of possibly lethal cardiovascular disease but failing to immunise the majority against a possibly lethal influenza. These situations have to be assessed according to how much benefit they yield and how much harm they inflict, but the benefits and harms are not of the same kind, and they do not affect the same people. The incomparability between the benefits of the vaccine, the risk of influenza, and the risk of cardiovascular disease, makes the principles of non-maleficence and beneficence so dissimilar that there seems to be no common ground on which one can balance them against each. It might therefore be impossible “to find out whether it is more important to protect citizens from the risk of getting pandemic influenza, than from the risk of being harmed from some adverse effect of the vaccine” (*ibid.*: 11). This leads the authors to conclude that some risks are morally indeterminate, and there is not always a clear answer to the question as to which principle overrides the

³¹ Espinoza and Peterson base this argumentation on the 2005 *Action Plan to Further Progress the European Risk Management Strategy*. This plan streamlines decision-making on the European level with regard to drug safety in contexts of risk and uncertainty, and was developed by the European Medicines Agency. The condition of demonstrated benefits outweighing known risks is a core feature of the action plan.

others. One might have an obligation to immunise the majority against a possibly lethal influenza, but at the same time also have an obligation not to expose a minority to the risk of possibly lethal cardiovascular disease: “the obligation to perform the act in question is only valid to a limited degree” (*ibid.*).

Moral indeterminacy

This moral indeterminacy is strengthened by the uncertainty surrounding both risks. Which, and how many, people will contract either disease? Which, and how many, infected people will eventually die? And what will the ripple effects of either approving or refusing the vaccine be? More research could lessen the uncertainty but it will only disappear once the risks do, or do not, materialise. This means that the duty proper, if it can be determined at all, can only be determined after the fact. Given the outcomes of a certain decision one can reason in hindsight whether or not the decision was in accordance with what one ought to have decided. If there is no uncertainty clouding the particularities of a decision-making situation, and if the outcomes of a choice are known in advance, a deontological balancing act of duties can be performed fairly easily. Imagine that one knows that the vaccine will result in serious cardiovascular health problems only for people above the age of 85 who have suffered two or more heart attacks in the past. One also knows that the vaccine will safely immunise all others against the influenza. Lastly one knows that there in fact are no other options. Such knowledge about consequences, partly identifiable victims, and alternatives, facilitates the act of weighing harms against benefits. The more one knows, the stronger one’s moral convictions become about the right choice and the right action in a given situation. Ross (1930: 32) himself argues that what is right in a given situation is “that which if I were omniscient I should see to be my duty”. However, in most decision-making situations people are not omniscient. Especially everyday cases of risk impositions, are characterised by uncertainty to an extent that problematises the notion of a duty proper.³²

³² A similar kind of critique has been voiced concerning the unrepresentativeness of philosophical thought experiments for real life problems, such as the Trolley Problem (Foot 1967), the Famous Violinist (Thomson 1971), Jim and the Indians (B. Williams 1973), or the Lifeboat (Hardin 1974). Fried (2012b), Hansson (2013), and Fleischhut (2013) have argued in a similar fashion that even if such thought experiments would expose people’s true moral intuitions, they provide little to no guidance to people in real-life decision-making situations. The uncertainty present in such situations frustrates or negates any clear or strong moral intuitions exposed by philosophical thought experiments.

The deontological unjustifiability of balancing

Apart from these difficulties with determining one's duty proper, a balancing act of harms and benefits encounters other problems from a deontological perspective. As I stated in the beginning of this chapter, deontological ethics are based on the principles of respect for persons and sanctity of human life. Allowing the offsetting of duties against each other enables the justification of risk impositions by referring to benefits outweighing harms, or other duties overriding the duty of non-maleficence. This means that harm to one person or a group of people can be justified by large or important enough benefits to another, and this is exactly what deontological ethics opposes. Even if harms and benefits would be knowable in advance, weighing them against one another in the context of duties tends to become a bastardised form of utilitarianism. One could adjust this weighing in favour of the person or people exposed to a risk: a risk imposition can then only be justified if the possible benefits outweigh the possible harms for the affected person. Such an addition would secure the principle of respect for persons as ends and not merely as means to an end. But this would also entail that many socially necessary and beneficial risks cannot be allowed, and this renders the adjusted deontological principle too stringent.

4.5.4 Rejecting balancing

Balancing the duty of non-maleficence against other duties can legitimise imposing risks to reduce risks for the risk-bearer specifically, or for society in general. However, these arguments cannot originate from deontological theory itself. Deontological, non-aggregative principles of respect for persons and non-maleficence do not manage to draw the line between permissible and impermissible risks based on competing duties.³³

³³ The same critique applies to other possible obligations in the context of risk impositions. An example is a duty to take a chance and impose a risk, provided that the benefits expected from that imposition are significant and accrue to the risk-exposed person. A related question is whether one can be blamed or punished for refusing to take a chance, or for being too risk averse? Another example is a duty to share the benefits that result from risk impositions: if a risky action has unexpected or unimagined benefits for a person, is that person then obliged to share their good fortune with the risk-imposer? I am indebted to Andrea Hurst for pointing out these duties pertaining to beneficence, luck, and good fortune. They generally come to the fore when one views risk in a more positive light than I do. My definition of risk tends to be negative – as possible harm – and I therefore focus mostly on duties not to harm. However, I include these questions as suggestions for future research, which are offered in the conclusion.

4.6 Conclusion

Deontological ethics in general draws attention to the importance of moral rules, principles, or duties. In this chapter I investigated whether such rule-ethics, and especially the duty not to harm and its founding principle of respect for persons, could sufficiently account for the appraisal of actions that expose others to risk. I first explored the tenability of a duty not to impose any risks, but this possibility should immediately be rejected as it prohibits virtually all action. Other duties seemed more promising, such as a duty not to impose likely, probable, or severe risks; a duty not to impose likely but small risks, or unlikely but large risks; and a duty not to impose risks that are not outweighed by (possible) benefits. But in isolation the principle of non-maleficence and respect for persons cannot account for an all-round evaluation of all risk impositions, and they therefore fail to guide decision-making in the face of uncertainty. The question: *Does deontology provide a convincing evaluation of risk impositions?* then has to be answered negatively. I do believe that the conviction that one ought to show respect for the humanity of others by not causing them harm is – and should be – generally held and interpersonally shared. However, such an intention should be complemented, or more robustly expressed, by other normative considerations, to which I will turn in the following chapters.

5. THE RIGHTS-BASED PERSPECTIVE

5.1 Introduction

In this chapter, the second research question – *Do mainstream ethical theories provide a convincing evaluation of risk impositions?* – is approached from the angle of rights. The focal question is: *Does rights-based ethics provide a convincing evaluation of risk impositions?* Rights correlating to the duty of non-maleficence, or the duty not to harm others without qualification, are scrutinised: the right not to be harmed, and the right not to be exposed to risk (from now on: ‘right against risk’). But before I proceed to give an account of rights in the context of risk impositions, let me elaborate on the notion of rights, and the relation between rights and duties.

Rights and duties are both fundamentally based on respect for persons. Also, they are often thought of as related to, dependent on, and interacting with one another. If someone has a right to a certain state of affairs, for example a right not to be lied to, then other persons have a duty to bring it about, for example by being honest. And vice versa, if someone has a duty to bring about a state of affairs, then other persons have a right to it. Joel Feinberg (1980: 143) calls this the “doctrine of the logical correlativity of rights and duties. [...] all duties entail other people’s rights and [...] all rights entail other people’s duties”. Feinberg (*ibid.*) himself questions whether the doctrine is correct and answers: “In a sense yes and in a sense no”. The correlativity holds for many rights and duties, but not for all. Take the duty to pay taxes: this duty is not directly related to a right of other persons, for one cannot claim to have a right that others pay their taxes. One has a right to a just and fair society, so if one has a duty to pay taxes, then every other person in that society also has a duty to pay taxes. But one’s duty to pay taxes is not logically correlated to a similar right of others. Or consider the right to give money to charity: this right is also not directly related to a duty, either of oneself or of other persons. One has a right to give money to charity, but does not have an obligation to do so.³⁴ And if one decides to exercise one’s right to give to charity, it does not entail that others have a duty to do the same.

³⁴ Peter Singer (1972, 2002) would claim otherwise with regard to affluent nations and well-off people: they have a duty to give to charity, or more precisely, to poverty and famine relief.

Because duties and rights are not always logically correlative, it is important to discuss them separately with regard to risk impositions. The discussed interpretations of the duty not to harm or impose risks of harm on others could not fully explain why and under what conditions exposing other persons to risk can be deemed acceptable. This is not to say that there never is a duty not to harm or impose risks of harm on others, or that this duty does not correlate to a right: the right not to be harmed or to be exposed to risk of harm. In this chapter I will consider whether, and if so, under what conditions, these rights can be claimed. The perspective of rights might open up new ways of determining when it is allowed to impose risks on others, and as such aid the understanding of the acceptability of risk impositions.

In ethical theories based on rights, rights of individuals are given priority over other moral considerations. Rights are not just entitlements that are “nice to have [...] [or] generous of others to provide” (Sumner 2012: 298). Rather, one can claim and demand them, others have the duty to respect or provide them, and it is considered unjust to withhold or violate them. Morality is then derived from rights in the sense that rights determine which actions ought to be performed or refrained from. “Rights are *justified claims* that individuals and groups can make upon other individuals or upon society; to have a right is to be in a position to determine by one’s choices what others should or need not do” (Beauchamp & Childress 2001: 357, original italics). Rights then define and demarcate the space in which people interact: they function as boundaries that prohibit and prevent people from acting in certain ways (Teuber 1990). Take for example one of the most basic human rights: the right to property. Because individuals have a right to property they can demand that other persons act so as to respect that property, that they do not unduly use, steal, damage, or destroy it. The foundation of rights-based ethics “seems delightfully self-evident: individuals possess certain rights, and the violations of those rights are wrong. If possible, such violations ought to be prevented” (Schroeder 1986: 499). Rights are also entitlements: having a right means being owed the content of that right. Examples are entitlements or claims to certain freedoms, such as the rights to freedom of speech, movement, and religion, or entitlements to treatment, such as the rights to recognition before the law, to be educated, and not to be tortured (UN General Assembly 1948).

One can distinguish between rights that people have because they are human and rights they have because they are part of a particular community or society. In the first category one finds rights that human beings are born with and that are universally valid. They are considered natural or God-given, such as the Lockean rights to life, liberty, and property (Locke 2004). These rights can never be taken away, and are negative in the sense that they call on others for their inaction: others ought not to interfere with or impede such rights. In the second category one finds rights that are only recognised within a particular community and presuppose socially established practices, rules or laws (Pojman 1989; Mackie 1989). These rights, such as rights to health care, rest and leisure, and employment, are considered positive because they call on others for their action: others ought to realise and advance them.

Rights are based on, and express, respect for persons. In fact, respecting persons and respecting rights are inextricably linked. As Feinberg argues (1980: 152):

To think of oneself as the holder of rights is not to be unduly but properly proud to have that minimal self-respect that is necessary to be worthy of the love and esteem of others. Indeed, respect for persons (this is an intriguing idea) may simply be respect for their rights, so that there cannot be the one without the other: and what is called “human dignity” may simply be the recognizable [*sic*] capacity to assert claims.

To understand human beings as persons means understanding them as possessing human dignity, as being entitled to humane and respectful treatment, as capable of making valid moral claims to that kind of treatment, and therefore as holders of rights. The language of rights translates the abstract notion of human dignity into practical guidelines for human interaction and treatment. To phrase it in Kantian terms, persons can never be merely used as a means to an end, but must always be treated as ends in themselves, because they possess dignity, are entitled to respect, and can claim their rights. Dignity, respect, and rights “are owed to man because of the very fact that he is a man” (Maritain 1943: 37). Principles of equity and equality between persons are important in this context. Respect for persons can be personally orientated as respect for oneself and interpersonally orientated as respect for others, but the reason why one respects oneself is the same reason why one ought to respect others. Infringing upon

another's rights cannot be done lightly, for a wrongful impingement means treating the other as less worthy of respect, as less of a human being. Rights can be rightfully overridden or limited, but such actions always demand justification.

5.2 Rights in the context of risk impositions

It is fairly straightforward to claim a right against, and condemn instances of, certain or actual harm infliction. But can one make a valid claim to a right when harm is only a future possibility or probability? How one understands the connection between harm and risk, or between actual and possible harm, defines what one deems to be wrong about imposing risks on others. As David McCarthy (1997: 205) argues: “any plausible theory of rights will ascribe to us something at least very much like the right that others not harm us [...]. It would be very surprising if facts about the morality of imposing risks of harms did not connect importantly with the morality of harming”. In a similar vein, Fried (2012a: 249) argues that the problem of risk and the problem of harm to others are in fact the same, but approached from a forward-looking and a backward-looking perspective respectively. But even though traditional rights-based ethical theories restrict actions that straightforwardly harm others, they generally do not say much about the impermissibility of risk impositions (Scheffler 1985: 81).

Kirstin Shrader-Frechette (1991: 117) argues: “If all members of society have an equal *prima facie* [*sic*] right to life, and therefore bodily security, as the most basic of human rights, then allowing one group of persons to be put at greater risk, without compensation or for no good reason, amounts to violating their rights to life and bodily security”. A right not to be harmed is inseparable from the rights to life, health, safety, and bodily integrity. A right against harm must entail not only protection against actual instances of harm to life, health, safety, and bodily integrity, but also against being exposed to possible negative effects on these things. But what does a right against risk exactly entail? Can it be overridden, and if so, on the basis of what kind of arguments? Does the notion of rights employed in the context of risk impositions help one understand under what conditions risk impositions are acceptable?

5.3 An absolute right against risk

In a discussion on the nature of rights, Thomson (1990) formulates two theses with

regard to harm and risk. The Harm Thesis (HT) reads that individuals have a right not to be harmed: they have a claim against other persons that they not harm them, and others are obliged to respect that right. Claims can be lost, for example if one waives or forfeits a right, and in those cases the HT is no longer applicable (*ibid.*: 228; Zimmerman 2006: 300). Thomson's second thesis is the Risk Thesis (RT), which reads that individuals have a right that other persons not expose them to risks of harm. Thomson gives the example of a person D, who, in the process of cleaning up his land, throws a log on the highway next to his property. Is it the case, she wonders, that through this risk imposition D has infringed upon a right of every other person on the planet that could have come onto the highway, fallen over the piece of wood, and incurred harm? "We might well prefer that our theory of rights avoid saying this", argues Thomson (1990: 245). Almost every human action imposes some kind of risk on others, however small or improbable. The RT suggests that everyone can file claims against everyone else to not perform actions that merely remotely expose her or him to risk: "each practice that creates a risk of violating a right then becomes an unqualified "wrong" that requires tougher regulation and enforcement" (Bardach & Kagan 2010: 14). This implies an impossible abundance of rights, which would be far too restrictive on human interaction by rendering virtually all action morally impermissible: recall the problem of paralysis discussed in the previous chapter (Hayenhjelm & Wolff 2011). Thomson therefore accepts the HT, but rejects the RT. Interesting to note is that even though she rejects the RT, she nevertheless deems it can still be wrong to impose risks on others. However, she deems risk impositions such an unavoidable aspect of life that they cannot be considered as rights violations.

5.4 A right against likely or severe risk

The extremity of an absolute right against risk must be refuted, but this does not mean the rights-based perspective should be disregarded altogether. A possible solution could be to select a threshold that separates risks that do not violate rights from risks that do. As with the duty not to expose others to risk, a claim to a right against risk can be considered valid if the risked harm exceeds a certain limit. Again, this limit can be based either on the likeliness of the risked harm, its severity, or on a combination of both factors.

5.4.1 *Differences between persons*

A threshold of likeliness or severity entails that risk impositions only infringe upon a right of the person on whom the risk is imposed if the possible harm exceeds an agreed limit. Thomson (1990) briefly considers a limit for rights infringements when she deliberates on whether to nuance the RT to the High Risk Thesis (HRT), which reads that individuals have claims against other persons that they not impose high risks of harm on them. She almost immediately rejects the HRT because she deems the term ‘high’ too vague (*ibid.*: 246). For what is a high risk of harm? Going back to the example of D and the log thrown onto the highway: it depends on what kind of person encounters the log, and under what kind of circumstances he or she encounters it, whether the log constitutes a high risk of harm. There cannot be one threshold that determines this. It might be a high risk if the log is lying on the highway just around a bend that obstructs the view, but not if any road user can see the log from miles away. It might be a high risk for a motorist driving at the speed limit of 120 kilometres per hour, but it is not for the average walker. It might be a high risk for an old and fragile grandfather trying to lift his stout grandchild over the log, but not for a professional hurdling athlete.³⁵ Also, other things might influence the risk, such as someone moving it. The fact that D cannot foresee or predict how his act might play out, as well as the fact that other causes might contribute to the intensity of the risk, impedes the establishment of a clear threshold.

5.4.2 *The motivations of the risk-imposer*

Apart from the vagueness or arbitrariness of such a threshold, another problem for this proposal is that it allows the imposition of malevolent harms if they fall below the threshold. Consider a skilled but malicious driver who suddenly accelerates in a traffic jam to give his passengers and other road users a fright. Compare this to an ambulance driver speeding on a busy highway to get a patient to hospital as soon as possible. Both drivers impose the same unlikely risk of harm on their passengers and other road users. However, most people would morally judge both risk impositions differently, and find the first but not the second imposition a rights infringement. The difference lies in the motivation with which the risks are imposed. I understand motivation here as what one

³⁵ This example is an adaptation of Laura Westra’s (2015: 356) “elderly tripper” and “athletic young person” encountering the log.

desires to result from one's action. The first driver imposes an unlikely risk just for his own enjoyment; the second driver imposes a similar risk but is motivated to save a life. A likeliness or severity threshold does not take into account the motivations of the risk imposer, which influence the moral evaluation of risk impositions and rights infringements.

5.4.3 *Thresholds contradict the essence of rights*

A more fundamental problem for the threshold proposal is that it contradicts the essence of rights. What matters for the infringements of rights is not the extent to which a right is violated, but that a right is violated. Recall that rights demarcate the space in which persons interact by functioning as boundaries that protect the dignity and integrity of persons, their life, and their property. The moment such boundaries are crossed, rights are violated, regardless of how far the limit is exceeded. This can be illustrated with the example of smoking in the vicinity of others, mentioned in the previous chapter. Singular, multiple, or even many combined instances of inhaling second-hand smoke will not necessarily result in severe, long-term damage to others. However, the likeliness that others will suffer such harm increases every time they breathe in cigarette fumes. Inhaling second-hand smoke makes a person more vulnerable and susceptible to negative health effects, and this renders every single instance a risk imposition that is simultaneously a boundary crossing, i.e. a rights infringement.

Peter Railton (1985: 92) remarks: "There is no room in a Lockean view for regarding minor injuries inflicted across boundaries as morally permissible, since [...] whether a boundary is crossed does not depend on the magnitude of the effect, or the value of what was affected". A right is either violated or respected, and whether a boundary is crossed depends on whether harm was done, even if it is small. Consider that if stealing infringes upon a right to property, then even stealing a ballpoint pen from a multimillionaire is an infringement of a right (*ibid.*; Mills 1985: 2). A risk imposition can then only be considered permissible if it can be shown that no harm was done and no boundary was wrongfully crossed, not even a little bit. The proposal to establish a limit, separating rights-violating risk impositions from non-rights-violating risk impositions, dilutes the protective strength of rights. It can therefore never be the product of a rights-based perspective, and it:

[...] cannot be utilized [*sic*] by a tradition which holds that stealing a penny or a pin or anything from someone violates his rights. That tradition does *not* select a threshold measure of harm as a lower limit, in the case of harms certain to occur. It is difficult to imagine a principled way in which the natural-rights tradition can draw the line to fix which probabilities impose unacceptably great risks upon others. (Nozick 1974: 75, original italics)

Selecting a threshold that determines under what conditions the right not to be harmed or exposed to risk of harm is valid seemed a fruitfully flexible alternative to the absolute interpretation of such rights. However, thresholds of any extent of severity or degree of likelihood do not incorporate the intentions of the risk-imposer. Moreover, establishing a threshold that determines the validity of any right cannot originate from rights-based ethics alone, as doing so contradicts the essence of rights as expressing respect for persons and protecting the sanctity of human life.

5.5 A prima facie right against risk

Another alternative is to understand the rights of individuals not to be harmed or exposed to risk as *prima facie* rights, which have to be weighed against other rights, duties, values, and concerns to determine what deserves priority in a given situation. Such a bounded right against risk is proposed by Schroeder (1986: 510), who argues that a “notion of a right against risk that trumps all considerations of countervailing values cannot be so validated by any theory in the rights tradition”.

5.5.1 Imposing a risk for the greater good

Risk impositions on individuals are often justified by referring to the competing, and initially compelling, collective claim to the greater good. Constructing buildings, developing drugs, and peacekeeping are activities that expose construction workers, medical trial participants, and soldiers to heightened risk of harm so that the population in general can reap the benefits of buildings, drugs, and peace. The question is whether individual rights against risk can ever be justifiably limited or overridden to serve the benefit of others. Can for example the installation of surveillance cameras, and exposure

of individual citizens to a heightened risk of privacy infringement, be justified by referring to a collective safety benefit for the population? Lanre-Abass Bolatitio Asiata (2010) believes that this risk imposition is unjustifiable from a rights-based perspective. He (*ibid.*: 320) argues that if individual rights can be sacrificed to provide significant benefits for others, rights lose their value, strength, and protective force: “not infringing on human rights has greater moral force than providing public goods”.

However, it is clear to see that Bolatitio Asiata’s rights-based perspective, in which infringements of rights are absolutely impermissible, is too restrictive. A reason why risk impositions on some individuals for the greater benefit of society can be considered permissible is because those individuals belong to society, and therefore equally enjoy the benefits of such risk impositions. However, an equal share in benefits can in itself not justify exposing some to risk. Because the risk-exposed carry a greater share, or all, of the burden, it would only be fair to allow them a greater share, or all, of the benefits. But public goods such as buildings or peace cannot be divided into shares. Hayenhjelm (2012: 924) therefore argues that “The justification for such cases of increased risk cannot be fulfilled looking at the level of benefits alone”. Apart from a share in benefits, she mentions other important considerations with regard to justification of risk impositions, namely, consent to, and compensation for, the imposed risk. Consent and compensation will be discussed in the next sections, but in the next paragraph the argument of collective benefit is scrutinised further.

5.5.2 *Collective life-saving benefits*

For what if imposing a risk on some provides not merely practical or welcome benefits for others, but saves or preserves the lives of others? Can the individual *prima facie* right against risk then be justifiably overridden? Consider the well-known ethical dilemma of a physician faced with the possibility to harvest five organs from one relatively healthy patient in order to save five dying patients all in need of a different organ. The physician is bound by the duty to do no further harm, and therefore ought not to kill one person irrespective of how many other persons he is able to save by doing so (Hogan & Lairet 2007; Geale 2012). Now imagine that the physician considers harvesting only one kidney from the relatively healthy patient in order to save one of the five dying patients of whom both kidneys will soon stop working. The physician will

then not kill the first patient for she can still live with one remaining kidney, but he is exposing her to risks associated with having one kidney, such as high blood pressure and injury with contact sports. For argument's sake assume that she is not aware of the actual harm done to her, and that she never experiences high blood pressure or engages in contact sports. She does not experience herself to be worse off than when she had two kidneys, and moreover another person lives because of the transplant.

In these kinds of dilemmas Thomson's (1990) Trade-Off Idea can be applied. Instead of clinging on to the inherent value of rights, she provides a more flexible approach to the permissibility of rights infringements with her idea of balancing harms against benefits. The Trade-Off Idea roughly states that a claim to a right can be permissibly infringed upon if the good resulting from the infringement outweighs the degree to which the risk-bearer is being made worse off (*ibid.*: 149–175). This idea renders harvesting the kidney under the described circumstances permissible: the degree of good brought about by the transplant is higher than the degree of harm experienced by the risk-bearer. But, from a rights-based perspective, harvesting the kidney is wrong despite the positive trade-off. The risk exposure is unjustifiable because it violates her right not to be used and unduly exposed to risks of harm so that others may benefit: "To achieve the greater good, the basic rights of another should not be violated [...] no matter what possible benefit to the greater number of people" (Geale 2012: 547). A live-saving benefit to others in this case is not enough to override the right against risk.

Now recall the example provided by Espinoza and Peterson (2012) of the vaccine against pandemic influenza and its severe cardiovascular health risks for elderly people, discussed in the previous chapter. The argument of a life-saving benefit now gains momentum because the vaccine will not merely save a few, but the majority of a whole population. The pandemic influenza that will break out if the vaccine is not approved for administration has a high mortality, meaning that most of the people who contract the virus will die. Approving the vaccine will then fairly certainly save many lives. On the other hand, there are only 'some concerns' that the vaccine 'may cause' health risks for the elderly, something merely shown by 'preliminary results' (*ibid.*: 10). A crucial characteristic of the influenza example is that there is no alternative available. Now imagine the worst-case scenario: all the expectations come true, all the elderly persons to whom the vaccine is administered develop extremely vicious health problems, and all

of them die. Even then the individual *prima facie* rights against risk from the elderly has to be justifiably overridden, for if this is not the case, a significant part of the population will most likely die. If the elderly do not die from complications caused by the vaccine, they will probably die from contracting the virus. The comparison is between life and death: if the vaccine is administered it will save many lives and might take a few; if the vaccine is not administered a few lives are temporarily saved but eventually all will be lost. Another potentially important aspect is that the risks affect the elderly, but the benefits accrue to the younger part of the population. As Sara Geale (2012: 458) remarks: “there remain varied definitions of the entitlements of people related to their age, gender, caste and their political or social standing”. The age difference between elderly persons who might die from the administered vaccine, and younger persons who will escape death by the virus because of the vaccine, might influence the valuation of their rights.

5.5.3 *An unclear outcome*

For rights-based ethics to contribute to the ethics of risk, it needs to be able to explain when a right against risk can legitimately be overridden. An individual *prima facie* right against risk might be legitimately overridden to save the lives of an overwhelming majority, but this example belongs to a very small class of cases in which collective life-saving benefits override the rights of individuals. The example deals with a question of the life and death of a vast majority, and only a few instances of risk impositions satisfy this characteristic. In most daily, average, or in the words of Fried (2012a: 236) “garden-variety cases of risk imposition”, the stakes are much lower, or at least less obvious. The argument that individual rights against risk can be overridden by life-preserving benefits for an overwhelming majority is not relevant for such impositions, and gives no decisive answer to the question of their permissibility. For most cases of risk impositions, it is still unclear whether persons can claim a right against risk.

5.6 *A right against risk without consent*

From the perspective of rights-based ethics, risk impositions can only be considered permissible once the person exposed to risk has freely consented to the imposition. Persons can waive their rights, also their right against risk, by giving consent. This is what makes the crucial difference between simply harvesting a kidney and asking the

patient, or giving her the opportunity, to donate it. Consent is also what makes the difference between forcing persons to construct buildings, take part in medical trials, and wage their lives in war, and ensuring their personal choice in doing so. As Thomas Scanlon (1998: 236) remarks with regard to workers who do risky jobs, such as construction work: “Our sense that it is permissible to undertake these projects also depends crucially on the assumption that [...] workers have the choice whether or not to undertake the risks involved”.³⁶ As such consent has a “morally transformative” character (Kleinig 2010: 4): it can turn wrongful infringements into permissible, welcome interactions (Teuber 1990; McCarthy 1997; Nickel n. d.). Now it also becomes clearer why rights need to be discussed separately from duties. From the perspective of the duty-holder, the government and the physician respectively in the examples above, no moral consideration can make the decision to impose a risk justifiable. From the perspective of the rights-holder, i.e. the citizens and the patient, the risk imposition can be rendered permissible by giving consent. Through the notion of consent, the rights-based approach opens up new possibilities for understanding the permissibility of risk impositions.

5.6.1 Actual consent

Requiring actual consent to justify risk impositions sounds intuitively appealing, but leads to several problems. Neelke Doorn (2015: 356) rightly remarks that “the absolute right not to be exposed to a hazard without one’s consent is difficult to assure in all situations”. Firstly, a person who impermissibly imposes risks on others obviously loses or forfeits the right. Consider Tom who despises Jerry and is intent on killing him. If Tom attacks Jerry, Tom’s right to not be exposed to harm without consent is no longer valid, and it is permissible for Jerry to use force on Tom in an act of self-defence. Secondly, consent can be literally impossible to obtain for risk impositions that concern future generations, children, or mentally impaired persons. Also, for many risk impositions it is impossible to identify the risk-bearers in advance (Sunstein 2002). Requiring consent for such risk-imposing activities rules out the permissibility of any risk-imposing activities that involve these groups of people, even if they themselves

³⁶ It must be noted that risky jobs, such as those in industries like fishing, garbage collection, long-distance transport, logging, meatpacking, and e-waste recycling, are often done by people with a low income. The world’s poor often do not have another choice but to work in dangerous environments, and without alternatives they cannot truly have said to consent to the risks involved in their work. The fact that many risky jobs also do not pay well continues this cycle of poverty (Fleischner 2015).

stand a chance to greatly benefit. Thirdly, consent can be practically impossible to obtain, especially for risk impositions that involve large groups. To require consent from each potential risk-bearer will result in heavy delays without regard for the size of the risk or the possible benefits of its imposition. Delaying the imposition of a risk can itself have more harmful effects, such as in Thomson's (1976: 208) example of US President Harry who debates deflecting an incoming bomb from a large city to a small town. The consent requirement obligates the president to apportion time to obtaining consent of all those involved. This is impossible because there is not enough time, and because it is difficult to determine who exactly will suffer harms as a result of the decision. McCarthy (1997: 216) therefore argues "it is permissible for the about-to-be infringer of the right not to seek consent if seeking it would be unduly onerous". Fourthly, an absolute interpretation of the consent requirement leads to a situation of stalemate (McCarthy 1997; Hansson 2006; Doorn 2015). If each potential risk-bearer has to give consent before a risk imposition can be considered permissible, each individual has the power to veto the process of approving and justifiably imposing the risk. This imprisons the decision-making system in a constant state of deadlock.

5.6.2 *Hypothetical consent*

These problems might be countered by requiring hypothetical, instead of actual, consent. What would a person, if he or she was able or had the opportunity to give consent, consent to? What risk impositions are reasonable and understandable to the average rational person? The first problem for the option of hypothetical consent is how such consent can be binding: what is the legitimising force of such consent, and when can one say that someone has consented? Secondly, not even hypothetical consent is always necessary for making a risk imposition permissible. Philip Nickel (n. d.) identifies a special case of risk impositions in which the right to informed consent, or the right against unconsented risk, can justifiably be overridden. When a risk-bearer has a significant chance of benefiting from the imposition of a certain risk, and that risk imposition is the only way of preventing (risk of) harm to the risk-bearer, it is permissible to infringe upon his rights. Examples are "social experimentation with new technologies for disaster relief, the use of mandatory vaccines for prevention of deadly infectious diseases (where widespread compliance is required), or the implementation of built-in speed limits in automobiles" (*ibid.*: 17). The right to consent should then not be

understood as an absolute right but an important *prima facie* right that in certain situations can be overridden by weightier considerations, or that is sometimes literally or practically impossible to respect.

5.6.3 *Important, but not necessary*

While the notion of consent does open up the right-based approach to new possibilities for understanding the permissibility of risk impositions, consent, either actual or hypothetical, is not always possible to obtain. Moreover, a right against unconsented risks, or a right to be asked for consent in risky situations, can be legitimately overridden. In cases where consent cannot, or does not need to be, obtained, but risk impositions result in harm, it would be fair to require some form of compensation. I turn to this consideration in the following section.

5.7 *A right to compensation*

There is “a strong connection between rights infringements (permissible or not) and duties to compensate. [...] other things being equal, if one person infringes the right of another, then, very roughly, the infringer is under a duty to compensate the bearer of the right,” states McCarthy (1997: 218–219). It is indeed fair to argue that those risk-bearers whose rights have in fact been violated, and who have suffered harm as result of a risk imposition, are entitled to compensation. I generally believe that when harm is inflicted, some kind of compensation or restitution is in order. This is an *ex post* interpretation of compensation, meaning that only when risk impositions result in actual harm is compensation required. But as David Rosenberg (1984: 878) observes: “A right not to be wrongfully interfered with is fundamentally different from a right to compensation after the fact. Transgressions of victims’ rights offend the victims’ human dignity regardless of whether their material losses are “fully” compensated”. A person on whom harm is inflicted has been wronged regardless of whether or not he receives compensation. To mitigate or alleviate this wrong, and to incentivise potential infringers of rights not to perform potentially harmful actions, compensation could be considered obligatory before the actual harm or rights infringement occurs. Risk impositions are by definition actions from which no harm has yet resulted: in the case of risky actions compensation can be required *ex ante*, meaning before actual harm has materialised. But now Hansson’s extension problem recurs: can the compensation requirement for

actual harm and right violations be extended to cases of possible harm and rights violations, i.e. risk impositions? In other words: does the *ex ante* compensation requirement make sense?

5.7.1 *Ex ante* compensation

An *ex ante* interpretation of the compensation rule states that if persons have a right to be compensated for actual harm, they have a right to be compensated for possible harm. Or phrased differently, if actual harm is a rights violation that evokes a duty to compensate on the side of the risk-imposer, the same counts for possible harm. Risk impositions are then permissible if and only if compensation is provided to the risk-bearer, regardless of whether or not actual harm occurs, or rights are in fact violated (Nozick 1974: 75–76; MacLean 2012: 794). This is what McCarthy (1997: 221) calls the Direct Payment Rule: if a risk is imposed, compensation needs to be paid immediately to the risk-bearer. Otherwise the risk imposition qualifies as an impermissible rights infringement. But does a pure risk imposition, i.e. a risky action from which no harm has resulted yet, qualify as a rights violation that can demand compensation?

An *ex ante* compensation requirement for risk impositions makes sense when a person can justifiably consider him- or herself to be worse off purely by being exposed to risk: risk is then itself a form of harm and imposing a risk on someone violates his or her rights. Recall Finkelstein's (2003) understanding of exposure to risk is a form of harm, discussed in Chapter 2. The conception of risk as harm can explain general moral intuitions about reckless driving or attempted murder: even if no actual harm results from those actions, they are wrong and the persons subjected to them are wronged. It can also explain why *ex ante* compensation is required for risk impositions: when risk exposure is itself a form of harm, it violates risk-bearer's rights, which ought to be compensated for in order to make them as well off as they would have been if risk was not imposed on them.

However, Finkelstein's argument presupposes that risk-bearers are aware of the fact that they are exposed to risk, and are worse off because of this realisation. One could claim that risk-imposers have a duty to inform risk-bearers of their actions. But in cases where

individual risk-bearers cannot be identified beforehand, it is simply impossible to communicate with them. If the risk-exposed is not aware of her exposure, she cannot experience herself to be worse-off because of the risk imposition. Her rights cannot be considered violated and *ex ante* compensation is either impossible or unnecessary. Moreover, actual harm is not the same as risked harm, and should be addressed differently. Even if a person is aware of the fact that she is exposed to risk and suffers because of this knowledge, her suffering is not the same as what she experiences when the risked harm actually realises: being hit is not the same as anticipating or dreading to being hit. Even though anticipation of harm is not good or preferable, it is not straightforwardly clear that it constitutes a rights violation just as actual harm does, and why it ought to be compensated, especially if the anticipated harm never realises into actual harm (MacLean 2012: 794). A last difficulty with *ex ante* compensation is that it instigates the problem of paralysis, or even tends to reserve this problem for economically disadvantaged groups. The requirement to pay compensation up front might incentivise less privileged persons to become overly cautious and reluctant to perform any action that is slightly risky, and privileged persons to act recklessly and immorally. Persons who are wealthy and wicked have a free pass to impose any risk as long as they can compensate it immediately.

5.7.2 *Ex post compensation*

A more realistic option is a partial extension of the compensation rule, requiring *ex post* compensation to be paid to those persons on whom harm is actually inflicted, and whose rights are in fact violated (Nozick 1974: 75–76; MacLean 2012: 794). A risk imposition is then considered permissible if and only if resulting harm can be compensated. This is what McCarthy (1997: 221) calls the Natural Lottery Rule, which states that “if an agent imposes a risk of harm on another, then he or she is under a duty to pay the risk bearer compensation for the harm if the risk bearer suffers the harm as a result of bearing the risk, and nothing otherwise”. McCarthy (*ibid.* 222) claims that this rule is easier to apply than the Direct Payment rule, for instead of needing to identify who imposed a risk on whom, one only needs to identify who caused harm to whom. But in many cases of harm resulting from risk impositions it is difficult, if not impossible, to clearly identify an imposer and a victim. Harm from risk often occurs through a chain of many consecutive instances of risk imposition that cumulatively result in harm, or through

many simultaneous instances of risk imposition that aggregately result in harm.

An example of a cumulative risk of harm is different people making use of a road: every time a person uses that road it deteriorates, thereby contributing to a greater risk of potholes for the next road user. An example of an aggregate risk of harm is air pollution: every individual making use of a car, a stove, or factory-produced goods contributes a miniscule part to a collectively substantial risk of air pollution. If a road user eventually crashes into a pothole, or contracts asthma as a result of inhaling polluted air, it is impossible to identify one or more individuals who exposed them to this risk. It is impractical and unrealistic to require all contributors to the creation of risks to directly compensate all others that suffer harm from such risk impositions.

There are also some forms of harm that are impossible to compensate, for example death. According to the *ex post* compensation requirement, actions that impose a risk that cannot be compensated, like a risk of death, can never be permissible because a risk-bearer cannot be compensated for death (because he is dead and because death is the gravest of harms). But many risky actions impose a small possibility of death on others, such as driving a car, making a fire, or building a scaffold. Requiring *ex post* compensation, or the possibility that compensation can be provided, for such risk impositions to be permissible could result yet again in the problem of paralysis.

Moreover, the promise of *ex post* compensation might persuade risk-bearers to accept the imposition of risks for the wrong reasons. Consider youngsters agreeing to partake in a drug research because the research institute offers them coupons for a MacDonald's meal. The compensation requirement can then become exploitative, and turn into a form of impermissible nudging, manipulation, or bribing.

5.7.3 Important, but not conclusive

The compensation requirement for risk impositions, either *ex ante* or *ex post*, runs into difficulties. In cases where harm eventually results from imposed risk, and where a causal link from identifiable risk-imposer to identifiable risk-bearer can be clearly established, the harm generally has to be compensated. But these cases are dealt with from the perspective of realised harm, not from anticipated harm. The compensation

requirement is therefore important but not conclusive in providing an answer to the question of permissibility of risk impositions.

5.8 Conclusion

This chapter centred on the question: *Does rights-based ethics provide a convincing evaluation of risk impositions?* A rights-based evaluation of actions that involve risk to others is only possible if some sort of right against risk can be derived from the right not to be harmed. The main goal of this chapter was then to see whether a justifiable and tenable right against risk could be derived from the right against harm. Five different rights against risk were scrutinised.

The first right was an absolute right against risk impositions. This was straightforwardly rejected because it prohibits virtually all action. The second right was a right not to be exposed to likely or severe risks of harm. Selecting a threshold measure for rights refutes the nature of rights-based ethics, and can therefore not be derived from a libertarian perspective. The third right was a *prima facie* right not to be exposed to risk, which can be overridden by weightier rights, duties, values, or considerations. A rights-based approach can only consider one reason weighty enough to override an individual right against risk: a risky action must provide life-saving benefits to an overwhelming majority in order to justify imposing life-endangering risks on a minority. However, this extreme argument is not applicable in most normal cases of risk impositions and therefore provides little practical guidance. The fourth right was a right against risks the risk-bearer did not consent to. Actual consent can be literally impossible or practically difficult to obtain, for example when risk impositions involve children, mentally impaired persons, future generations, large groups of people, or unidentifiable victims. Requiring hypothetical consent in such situations is a possibility, but it is unclear when such consent can be considered valid, and whether it has any legitimising force.

A last right worthy of discussion in the context of risk was the right to be compensated for being exposed to risk. I considered an absolute extension of the compensation rule for actual harm, requiring *ex ante* compensation for risk impositions. It proved unclear why an anticipated harm required compensation in the same way as actual harm does. I then considered a partial extension of the compensation rule for actual harm, requiring

ex post compensation for risk impositions that materialised into harm. However, this requirement unrealistically presupposes that both risk-imposer and risk-bearer can be identified, lacks sensitivity to harms that cannot be compensated, and can become exploitative.

I conclude then that rights-based ethics alone cannot provide a convincing evaluation of risk impositions, i.e. it cannot account for what makes certain risk-imposing actions acceptable, and renders others impermissible. For only in cases where harm is imminent or very likely to occur, people might claim a right not to be exposed to risk. This conclusion does not exclude rights from influencing the evaluation of risk impositions: it merely states that other normative considerations have to be included in such evaluations as well. A right-based ethical perspective highlights the importance of consent and compensation, two considerations that are of substantial concern during and after the justification of risk-imposing actions. Moreover, it lends strength to the individual voice, which is often drowned out by the aggregated benefits of a majority. In the next chapter I will discuss an ethical perspective that continues to focus on the rightful claims of individual persons.

6. THE CONTRACTUALIST PERSPECTIVE

6.1 Introduction

In this chapter contractualism will be put to the test of finding an answer to the question of when it is permissible for one agent to expose another agent to risk: *Does contractualism provide a convincing evaluation of risk impositions?* As its name already indicates, contractualism is a branch of normative theory that determines whether human conduct is right or wrong by referring to a contract, an agreement, or a consensus, between individuals. Scanlon (1998) develops contractualism specifically in his influential work *What We Owe to Each Other*. But since Scanlon uses the notion of a social contract, the foundations of contractualism are already laid in *A Theory of Justice* by John Rawls (1971). Rawls focuses on the question as to what kinds of political institutions are just, and understands a contract as a socio-political concept that aids in formulating a framework for a liberal, just, and fair society. Scanlon uses the same notion of a contract as an ethical tool with which to evaluate principles governing interpersonal conduct, and focuses on the rightness and wrongness of actions.

Despite this difference, the predominantly political work of Rawls and the ethical work of Scanlon are grouped together under the label of contractualist thinking.³⁷ This stands in opposition to contractarian thinking: a distinction based on the reasons that motivate individuals to enter into a contract with others. Advocates of contractarianism, such as Hobbes (2003 [1651]) and his modern counterpart David Gauthier (1986), argue that humans are first and foremost self-interested agents who enter into collaborative contracts with others to further their own interests.³⁸ Advocates of contractualism on the other hand, like Rawls (1971) and Scanlon (1998), but also earlier expounders such as Jean-Jacques Rousseau (2012 [1762]), hold that people make binding agreements with others because they have an intrinsic desire to justify their acts to others.³⁹ Contractarianism focuses on self-interest and views the individual in opposition to

³⁷ In general, there is much overlap between political and normative philosophy: one can even argue that the former has its beginnings in the latter. Because humans are social beings, the ethical question of what constitutes a good life for a human being evokes the political question of what is a good life for a human being amongst others (Moseley 2016).

³⁸ In the political domain for example it is beneficial for individuals to cede part of their autonomy to the state in exchange for protection, and it is exactly this self-interested consensus that legitimises the authority of the state.

³⁹ For an overview of the relation between contractarianism and contractualism, consult Elizabeth Ashford and Tim Mulgan (2012).

others who threaten the realisation of that self-interest if they are not negotiated with. Contractualism focuses on respect for human beings as persons and sees the individual in a more cooperative relation to others. This means that “Under contractarianism, I seek to maximise my own interests in a bargain with others. Under contractualism, I seek to pursue my interests in a way that I can justify to others who have their own interests to pursue” (Ashford & Mulgan 2012).

6.1.1 Respect for persons

Rawls (2009 [1971]: 4) acknowledges that people enter into contracts that are mutually advantageous for both parties when he claims that “a society is a cooperative venture for mutual advantage”. But he adds that for such a contract to be just and fair, it must be based on principles that express respect for the equal moral status of rational and autonomous persons. The conviction that all human beings have dignity and are worthy of respect is a property contractualism shares with other non-consequentialist theories, such as deontology and rights-based ethics.

Respecting human beings as persons entails that one should refrain from negatively impacting the lives and integrity of others: one should not harm them physically or mentally, or limit their ability to make their own choices and pursue their own interests. But many human actions can and will in some way negatively impact others: even more often will one expose others to risks of harm. Both actual harming and exposing others to risks of harm are unavoidable corollaries of living in a social setting with other people. There is, as Fried (2012b) points out, a friction between two fundamental freedoms. On the one hand, one has the freedom to form and pursue one’s own goals and life path, and on the other hand one has the freedom not to be interfered with by others, or not to have harm inflicted on oneself by others. But “most conduct in pursuit of one’s own projects carries with it some risk (however remote) of harming others. As a result, we cannot protect one of those two interests without compromising the other” (*ibid.*: 64).

Risks cannot be completely eliminated from life. The question then is “to what extent, and for the sake of what, it is permissible to engage in activities from which others might suffer. [...] What risks are fair to impose on others?” (Altham 1984: 21).

Contractualism tries to answer these questions and solve the conflict between the two freedoms by allowing for actions that may or will in fact harm others, on the condition that an adequate justification can be provided to the affected persons. A moral contract is aimed at regulating interpersonal conduct in such a way that individuals can follow their own life paths with minimal negative interference from others, or that, when such interference is unavoidable or necessary, it is justifiable. The contract is then an expression of the equal moral status of human beings, and of the respect they deserve because of their equality (Groves 2009: 21).

6.1.2 Justification: agreement or rejection

In early strands of contractualism, justification is predominantly understood as agreement with others. One can think of Rawls' hypothetical decision-makers behind the veil of ignorance, who have to agree on the fundamental principles of social and political justice. Action-guiding principles, as well as the individual actions they authorise, are considered right if everyone affected by them endorses, agrees on, and consents to them, or could at least hypothetically do so.

In later versions of contractualism the focus is no longer on what everybody will agree to, i.e. what is right, but on what an individual can reasonably disagree with and therefore reject, i.e. what is wrong. This approach leaves more room for diversity and discussion in the realm of the right, instead of, often fruitlessly, searching for unanimous agreement. According to modern contractualism then, one should follow action-governing principles that no individual can have a reasonable complaint against. From this follows that "An act is wrong if its performance [...] would be disallowed by any set of principles for the general regulation of behaviour that no one could reasonably reject as a basis for informed, unforced, general agreement" (Scanlon 1998: 153). What is right is then determined in opposition to what is wrong: "an act is right if it would be required or allowed by principles which no one, suitably motivated, could reasonably reject as a basis for informed, unforced, general agreement" (Scanlon 1986: 151).

6.1.3 Spotlight on the individual

The 'what', 'why', and 'how' questions of contractualism are now answered: the

acceptability of interpersonal conduct is understood in terms of a contract between persons (what), based on respect for persons (why), reached through justification to persons (how). The answer to the last important question, of ‘who’ is the focal point of this contractual justification, is evident. Contractualism focuses specifically on the individual: ethical claims should be justifiable to each person, for it is from the perspective of the individual that interpersonal conduct in general, and harmful and risky conduct specifically, have to be evaluated.

Because of its strictly individualistic focus, contractualism fundamentally opposes utilitarian aggregation. Classical utilitarianism, as discussed in Chapter 3, states that the rightness or wrongness of an action is determined by the goodness or badness of its total consequences, aggregated across all affected individuals. This theory then permits actions that significantly harm one person or a few people, but lead to relatively greater benefits for another person, or to smaller benefits for more people (which, once aggregated, outweigh the harm done to the one or few). According to utilitarian reasoning then it would for example be permissible “to kill an innocent person in order to prevent some, perhaps astronomically high, number of people from suffering minor headaches” (Norcross 2002: 303).

The same goes for exposing some to significant risks of harm. Basically, any risky action is permitted, as long as the potential benefits are large enough or accrue to a larger number of people, i.e. as long as interpersonally aggregated utility, happiness, or welfare is maximised. To build on the previous example, it is permissible to spend tax money on developing aspirin against minor headaches instead of investing it in research on a rare and fatal disease, provided that the probabilistic frequency of suffering a minor headache is many times larger than contracting the rare disease.⁴⁰ Efforts to prevent or compensate for harm may be required, but only if these efforts maximise the total expected benefits (James 2012: 264). Maximisation of general welfare or overall happiness functions as an impersonal justification of actions “to the world at large” (Nagel 1979: 67 – 68). In the aggregative approach an action is good or permissible if it leads to the greatest amount of good for the greatest number of people.

⁴⁰ An example from Francis Kamm (2007: 36 – 37).

Contractualism rejects interpersonally aggregating benefits and losses on the basis of respect for persons, and the distinctness of individuals. What is of value or disvalue for one person does not gain or lose value by being valued or disvalued by two persons. In other words, what is good or bad for one person does not become better or worse if more people experience it. No one enjoys the total benefits, or carries the total burden, so it would not make sense to let the permissibility of an action depend on its aggregated outcomes. Contractualism responds to aggregative utilitarianism by removing calculations from moral deliberation. A contractualist is concerned with the weight of the benefits and burdens for each individual, not with how many people gain or suffer, or with the summed-up total of their gains or losses. Justification for interpersonal conduct should be provided in the form of “a direct interpersonal response”, or a “justification for what one did to another person [...] offered to him specifically” (Nagel 1979: 67 – 68; see also Kumar 2001: 12 – 13; Oberdiek 2014: 114). The adequacy of such a justification depends on the weightiness of claims that individuals have to be treated – or complaints against being treated – in a certain way. Whether an action is right or permissible therefore depends on “each individual’s personal reasons for rejecting a principle that licenses the action” (Frick 2015: 187). If an individual has a reasonable complaint against a general action-guiding principle or an individual action, both the principle and the action it allows are unjustifiable.

The contractualist approach specifically focuses on those affected who have the strongest reasons for objecting to the action under consideration. Those who have the strongest reasons to object to an action are the ones who will be worse off as a result of that action. Rawls (1971) acknowledges this when he argues that fair principles of justice are those that maximise the expectations of the least advantaged group in society. Scanlon (1998: 207) also focuses attention on the perspective of the least advantaged when he argues that actions need to be justifiable to each person, in particular to those who face “the maximum level of burdensomeness”. When one compares claims or complaints on an individual level one ensures that the individual’s voice will not be drowned out by the combined voices of the many, and that one chooses the alternative that is most beneficial to the least advantaged. As such contractualism is part of the “paradigm of moral thought [...] [that] allow[s] the grave objections of a single individual to defeat a project or plan that would otherwise be expedient for many” (Wallace 2002: 469). It gives expression to the moral conviction

that a significant harm to one person cannot be outweighed by a comparatively larger benefit for another person, and that it is wrong to let a few people suffer so that many others are able to obtain smaller benefits (Frick 2015: 175 – 176, see also Scanlon 1998; Lenman 2008: 100).

6.1.4 An example of one against many

Consider an example provided by Scanlon (1998: 235). Many people are watching a World Cup soccer match. Now Jones, who is working in the operating room of the TV station broadcasting the match, has an accident. Some piece of equipment has fallen on his arm, bruising his hand and giving him extremely painful electrical shocks. His colleagues can stop Jones' suffering by switching off the transmitter. However, they have to do so for fifteen minutes, thereby interrupting the broadcast and turning thousands of TV screens black. Should they wait until the match is finished, or rescue Jones the moment they realise he is in trouble?

From a utilitarian perspective, a trade-off has to be made between the harm done to Jones, and the pleasure of watching the important soccer match aggregated across many individuals. If the relatively insignificant but combined pleasures of the many outweigh the significant harm to Jones, the transmitter must not be turned off. From a contractualist perspective however, this decision needs to be justifiable to all those affected, especially to Jones who is most disadvantaged and therefore has the strongest complaint. The decision to keep transmitting the match is obviously unjustifiable to him. Scanlon, and contractualism in general, points out that it does not matter how many people will enjoy watching the match uninterrupted: what matters is the individual claim to enjoy watching the match without interruptions. Weighed against Jones' individual complaint against suffering extremely painful electrical shocks, the latter is without doubt much stronger.

6.2 Justifying risk impositions

6.2.1 A question of distribution

Just as in cases of harmful conduct, contractualism allows for risk impositions if they are justifiable (in the sense of not reasonably objectionable) to each person exposed to

risk, especially those facing the maximum level of burdensomeness, i.e. risk exposure. Consider the following: to generate enough energy to supply the whole country consistently with electricity, the South African government either kills 52 of the 52 million citizens, or exposes all 52 million to a micromort⁴¹, i.e. a one in a million probability of death.⁴² Because the factual outcome of both alternatives is the same (i.e. 52 people die, and the other 51.999.948 benefit from a consistent energy supply), a surefooted utilitarian would be indifferent in his choice. Most people would however agree that the first alternative is morally condemnable, whereas the second alternative sounds intuitively fair. Contractualism accounts for this moral intuition by acknowledging that the justification of harm and risk impositions is fundamentally a question of distribution. How are potential harms and benefits associated with risky actions distributed amongst the involved parties? In other words: who shoulders the harms and who reaps the benefits? And, more importantly, is this distribution fair? Non-consequential normative theories like contractualism critique consequentialist theories like utilitarianism on the fact that its aggregative focus blinds it to harm-benefit distributions amongst individuals. Contractualism tries to avoid this by zooming in from an impersonal to a personal perspective, and individually focused justification indeed seems an attractive alternative to utilitarianism's cold calculations. However, prioritising the lone voice over the combined voices of others is simultaneously the strong point *and* the Achilles' heel of contractualism. This becomes most apparent when one tries to justify risky actions with an unequal distribution of benefits and risks. But before turning to these obvious problem cases for contractualism, let us investigate two types of situations in which the justification of risk impositions is pretty straightforward, and, other things being equal, acceptable from a contractualist perspective.⁴³

6.2.2 Equal distribution of risks and benefits

Sharing

The first type of situation in which risk impositions can be justified to the risk-exposed

⁴¹ The concept of a micromort as a descriptor of a one in a million probability of death was introduced in the 1970's by Ronald Howard (Spiegelhalter 2011: 24).

⁴² This situation is inspired by a more general example from Lenman (2008: 100).

⁴³ Altham argues that risk impositions are acceptable when the agent performing the risky action can isolate the risk-exposed from possible harm (1984: 27). However, such protection seems to eliminate the very possibility of harm, and in my opinion this situation therefore does not count as a risk-imposing one.

is when agents share potential harms and benefits associated with risky actions. Multiple agents perform the same risky activity, thereby exposing each other to the same risk. The risky activity must yield benefits to the agents that outweigh the possible harms: if the benefits they obtain by performing the risky activity are less desirable than the possible harms are bad, it would make no sense to perform the activity in the first place. An obvious example is that of driving: by driving one exposes others to risks on the road, but by driving themselves they expose yet others to the same risks. This seems quite logical and acceptable, for “we may be expected to bear, without indemnification, those risks we all impose reciprocally on each other” (Fletcher 1972: 543).

The contract between rational agents can then be understood as a mutual agreement to being exposed to risks in order to expose others to the same risks, and benefit from that mutual exposure. The justification for exposing a person to risks lies in the opportunity that person receives to expose others to the same risks and gain a certain benefit. Note here that exposing others to risk must be understood not only in the literal sense of performing an action oneself that imposes a risk on others, but also as allowing others to be exposed to risk, asking of them to expose themselves to risk, supporting a system that in one way or another exposes other persons to risk, etc. For example, one may not drive personally, but one’s partner does, one rents out one’s car, or makes use of taxis: one then still reaps the benefits of driving and being mobile.

Trading

The second type of situation in which risk impositions can be justified, is when agents can trade risks and benefits, associated with different activities, in a system of risk trading. The possibility of trading risks and benefits accommodates “people all of whom want to do some things that carry risks to others, but who do not all want to do the same risky things” (Altham 1984: 26). Consider constructing buildings or participating in medical trials: the builder might be facing risks on the construction site but benefits from the development and improvement of medicine, and vice versa the participant in the medical trial is confronted with risks associated with such experiments but benefits from properly constructed buildings. Being exposed to risk in a particular situation is then counteracted by reaping the benefits of an action that exposes others to risk: “If [...] the (expected) losers on one risky project are likely to be the (expected) winners on

another, we can treat those two events as offsetting” (Fried 2012b: 57). In this case the contract between rational agents is to be understood as a mutual agreement to being exposed to risks in order to expose others to comparable or otherwise exchangeable risks, and benefit from that mutual exposure. The justification for exposing a person to risks lies in the opportunity that the risk-exposed receives to expose others to different risks and gain a certain benefit. Hansson (2003: 305) argues that any person would agree to an “equitable social system of risk-taking that works to her advantage”. It is indeed a flexible and dynamic solution to the previously mentioned problem of paralysis, or moral gridlock, that would arise if one would categorically reject or not consent to risk exposure.

However, the main problem with the solution of a risk trading system is whether risks can ever be traded in a fair fashion. Potential harms associated with different risky activities must be exactly the same, similar, or at least comparable in order for an exchange to be fair. One cannot just trade any risk for any other risk, but the type of risk must be taken into account. For example, one can wonder if it makes sense to trade the risk of injury related to working as a meatpacker in a slaughterhouse for the risk of damage to property related to living in a hurricane prone area: an injured body and damaged property are significantly different harms. But similar harms also prove difficult to trade: can the risk of dying in a car accident associated with road travel be traded for the risk of dying from radiation associated with living in the vicinity of a nuclear reactor? Does it make sense to trade the risks of road travel for the risks of air travel? Moreover, the tradability of risks is influenced by the personal situation of the risk-exposed person. Take the example of the meatpacker and the resident of a hurricane prone area: now assume that the meatpacker is a struggling single mother and the resident is a well-off stockbroker with a love for extreme weather events. Not only would it be difficult to trade the risks they are exposed to: it would also be unfair. As Hayenhjelm and Wolff (2012: e41) point out: “a scheme that made you face the risks of mining, me the risks of infectious diseases in being a doctor, and another the risks from a waste dump, may neither be efficient nor fair, since this may not take special vulnerabilities, interests or concerns of individuals into account”.

6.2.3 Unequal distribution of risks and benefits

Justifying risk impositions from a contractualist perspective becomes even more difficult when risks and benefits are not, or practically cannot be, shared or traded, but are distributed unequally. Unequal distributions of harms and benefits indicate that a trade-off has been made between conflicting interests, and that some ended up with more of the good than others. Such trade-offs might sound unfair, but in fact people collectively make them every day: trade-offs are an integral part of life. The goals people pursue through their actions, and the freedom with which they do so, are scarce, i.e. there is more demand than there is supply. There are for example finite resources to produce and maintain health, safety, and security. Also, as mentioned above, people's freedom to pursue their own life goals is bounded by the freedom of others to be free from harm: it is therefore also necessarily finite. In a world of scarce goods and conflicting claims to those goods, trade-offs between the interests of different persons are inescapable. Fried (2016: 5) calls this "the universal tragedy of social life". The difficulty contractualism encounters in the face of the tragedy of trade-offs becomes apparent when one attempts to justify socially beneficial risky activities from a contractualist perspective.

Socially beneficial risky actions

A socially beneficial decision, action, or project is one from which the majority of a population stands to benefit. Examples are the construction, maintenance, and use of infrastructure; purification treatment and supply of water; generating and distributing energy; or setting up medical schemes and running vaccination projects. Even though these projects are beneficial to the society at large, they are also, just like many other human activities, inherently risky: some are expected to suffer losses as a direct result of these activities. Many if not all public policies regulating social life are of this character. Contractualism must ask how such actions can be justified to the least advantaged.

The first question is whether everyone indeed stands to benefit from activities that are beneficial to the majority. Consider a government promoting urbanisation. This brings opportunities for a faster growing and more innovative economy, job creation, declining poverty, and cultural exchanges from which most citizens stand to benefit. However, urbanisation is also associated with risks such as the spread of diseases, social unrest,

and environmental damage, to which the poorest citizens are often mostly exposed. The next question is whether those potentially affected are also involved in making the decision whether to perform generally beneficial but nevertheless risky activities. As Hermansson and Hansson (2007) point out, it tends to be particularly problematic if one person or group of people makes this decision as well as possibly benefits from its outcomes, but another person or group of people is exposed to the possible harms, without having any say over that exposure. Consider for example the Transatlantic Trade and Investment Partnership (TTIP), an agreement about which the United States of America and the European Union are currently negotiating. Developing countries are excluded from the negotiations. The TTIP and other mega-regional trade agreements place developing countries under pressure to liberalise their markets, even though some of them are not strong enough to compete in the international free market. Moreover, the world's least developed countries will likely shoulder most of the negative effects related to trade diversion, such as loss of market shares, investments, and access to capital, which results overall in even more reduced economic competitiveness (Schmiege 2015; Weinhardt & Bohnenberger 2015; Elliot 2016).⁴⁴

Now consider situations in which the benefits associated with risky activities are available to all, i.e. they are part of Hansson's equitable social system. The previously discussed example of the construction worker and the participant in the medical trial can provide an illustration. The construction worker is involved in the building of a university in a city: many locals as well as people from outside the city are expected to enjoy education there, and such a public asset will most likely boost the intellectual image of the city. However, all workers face a risk of serious injury or even death, and passers-by might be accidentally harmed during the building process. But then again, the workers and the passers-by also have access to the national education scheme. Now imagine the development of a medicine that can cure cancer: the specific medicine is expected to save many lives but also to have highly negative side effects on the health of some, especially on participants in the trial period. Testing this drug might pose a life-threatening risk to a few persons but eventually provide a life-saving benefit to many others, including the participants of the medical trial.

⁴⁴ In fact, the TTIP is not even an example of a socially beneficial risk, an agreement that entails both risks and social benefits for all partners. But it is presented as one by those in favour of it, as if all countries would benefit from a liberalised market.

How can one justify the possible harms to which construction workers or participants in medical trials are exposed? One can argue that safety regulations for construction sites and ethical rules regulating scientific research respectively are supposed to set the acceptable level of risk to which workers and participant can be exposed. Moreover, one might argue that by working in construction or participating in trials – activities that are quite obviously risky – people give their implicit consent. Written consent might also be required. However, it can prove to be quite difficult to justify socially beneficial risky activities from a contractualist perspective. Because of the scale and duration of such activities it is almost certain, at least statistically, that someone or a few people will get hurt in the long run. This means that if enough buildings are constructed and if enough medical experiments are conducted, harm is bound to materialise at some point in time. And even if those who are harmed also stand to benefit from risky activities (everyone benefits from living in a society with proper infrastructure, decent education, and good medical care), the harm itself can still remain unjustifiable. As was discussed above, according to contractualism it is unacceptable to let a few suffer significant harm or even death so that the majority can enjoy pleasant, practical, or even necessary but comparatively less significant benefits. How can permitting risky actions ever be justified to future victims, i.e. future least advantaged, who either face a small chance of death or a bigger chance of a lesser harm?

A matter of perspective

As will be explored in the next paragraphs, it depends on the temporal perspective one takes as to whether risk impositions can be justified. The perspective, namely, determines what has to be justified to the potential victims: the actual harmful outcome, or the expected risk of that outcome (James 2012: 265). If one has to justify the actual consequences of a risk imposition, evaluation takes place ‘after the fact’, i.e. from an *ex post* point of view. If one has to justify the possible consequences of a risk imposition, evaluation takes place ‘before the fact’, i.e. from an *ex ante* point of view.

6.3 The *ex post* perspective

If one takes a perspective ‘after the fact’, one evaluates actions by looking at their actual consequences (Scanlon 1982: 122 – 123; 1998: 208). The probabilities associated with

those consequences do not determine the acceptability of the actions that cause them. Scanlon (1998: 209) admits that this sounds counterintuitive, for “it is intuitively obvious that the likelihood that a form of behavior [*sic*] will lead to harm is an important factor in determining its permissibility”. He continues that it is assumed that the likelihood of an action resulting in harm must be taken into account by discounting the complaint an affected person has against that action being performed, but that “this assumption is mistaken. The probability that a form of conduct will cause harm can be relevant not as a factor diminishing the “complaint” of the affected parties (discounting the harm by the likelihood of their suffering it) but rather as an indicator of the care that the agent has to take to avoid causing harm” (*ibid.*). The probability of harm arising from a certain action then determines which precautions are reasonable for a risk-imposing agent to take. This reflects the view that it would be unacceptably costly to avoid all behaviour that entails a risk of harm. For when the probability of harm is low, the cost of implementing extra safety measures to avoid that harm can be considered unnecessary and unreasonable. For example, it would be unreasonable for a local government official to employ traffic controllers on quiet intersections with traffic lights. But the higher the probability of harm, the more precautionary methods become practically and morally necessary: it would be reasonable to employ traffic controllers on busy intersections where the traffic lights have stopped working during rush hour. However, the probability of harm does not influence, i.e. discount, the weightiness of the complaint an affected person has against having a risk imposed on him. Being killed because someone jumps a red traffic light on a quiet intersection is just as bad as having a similar fatal accident on a busy intersection without traffic lights. The fact that the probability of someone getting killed is lower in the first situation than in the second one does not say anything about the permissibility of, say, reckless driving.

What matters for the acceptability of a risk imposition from an *ex post* perspective is not the likelihood of harm, but the harm that in fact results from an action. To judge an action then, one must know what the consequences will actually be: one must be certain whether or not that action will in fact result in harm. As was discussed in the section on actual consequences in the chapter on utilitarianism, certain knowledge necessarily entails hindsight. A judgement is reached by looking backwards with certain knowledge about outcomes to the moment at which the decision, leading to these outcomes, was made. But how can a person ever possess such knowledge at the time of decision-

making? Fried (2012b: 43) argues that the only way a contractualist can endow someone with an *ex post* point of view is “to allow her to ‘peek ahead’ in time to see how things will in fact turn out if the principle is adopted”.

6.3.1 *What does one know?*

Knowledge of possible consequences

There are two ways of understanding the *ex post* contractualist perspective. Firstly, there is the point of view sketched by Rawls (1971), in which decision-makers are placed behind a veil of ignorance, shielding off access to information about themselves, their preferences and their social status. However, they can ‘peek ahead’ to gain full knowledge about how the principles they adopt will generally play out in the future. Because they do not know themselves, they do not know how those principles will affect them personally: they only know what possible fates can result from adopting certain principles. It is therefore rational to maximise the outcomes for the least advantaged, for decision-makers behind the veil of ignorance might be amongst them once the veil is lifted. When assessing a risk imposition, the main question is then: ‘how is the least advantaged person affected by this action?’ or ‘how does the least advantaged person fare under a principle allowing such an action?’ Rawls paints a far more elaborate picture than I am able to do here, but the essence of his theory is quite simple: when confronted with alternative action-guiding principles, decision-makers have to assess their actual outcomes and choose the principle that has the best worst outcome, thereby maximising the prospects of the least advantaged. A risky action is then acceptable if it, compared to available alternatives, leads to the best possible outcomes for the least advantaged.

Critical voices have attacked the tenability of Rawls’ hypothetical decision-making situation and the possibility of reasoning about society from this standpoint (Fried 2012b; Hansson 2013). In actual decision-making contexts persons do know about their subjective preferences, personal situation, and available options. This will influence decisions to allow or reject actions and principles governing actions: situated selves make situated judgements. By making decision-makers hypothetically uncertain about things they are not uncertain about in real life and vice versa, Rawls reverses reality.

Knowledge of oneself and possible consequences

The second variant of *ex post* contractualism tries to better suit actual decision-making situations by removing the veil of ignorance and understanding personalised information as morally important. The main question when assessing a risk imposition is: ‘how am I affected by this action?’ or ‘how do I fare under a principle allowing such an action?’ This *ex post* perspective allows one to reason with certainty about the outcomes of risky actions for situated selves: one not only knows oneself but one also knows one’s specific fate if a certain principle is adopted. But this invites the question: are people ever certain about the future, do they ever know the actual outcomes of their actions before acting? The answer is clearly ‘no’: real life is lived in a context of pervasive uncertainty. The *ex post* perspective is based on assumptions about available knowledge that are far from realistic, and is therefore doomed to remain purely theoretical.

6.3.2 Moral deadlock revisited

Apart from this shortcoming, the *ex post* perspective in general also puts extreme moral demands on persons, which in effect overly restricts their scope of action. Elisabeth Ashford (2003) makes this point in her critique on Scanlon titled *The Demandingness of Scanlon’s Contractualism*. To understand her point, let us begin with the acknowledgement that any action is potentially risky, meaning that it can result in harm, even severe harm or death. It is for example hypothetically possible that a train derails from the tracks and runs someone over. The possibility of getting killed by a derailed train is perhaps very small, but contractualism holds that assessments of likelihood should not be taken into account in the moral evaluation of risky projects. As Ashford (*ibid.*: 299) rightly remarks: “the remoteness of the risk of being killed does not reduce the complaint of the person unlucky enough to end up being killed”. The fact that death is a possible outcome demands us to take it seriously. Moreover, if an action is repeated often enough, harm statistically becomes more and more certain: if trains run often enough, accidents caused by derailed trains will most probably occur. Allowing train transportation and the associated risk of death by derailed trains has to be justified to future victims, just as disallowing train transportation and the associated risks of increased travel time and expensive transport alternatives has to be justified to commuters. The individual complaint against being killed by a derailed train is to be

weighed against the individual complaint against suffering a loss from a ban on train transportation.

But can a principle that allows risk impositions ever be considered justifiable from the perspective of a victim, who has peeked ahead in time and is certain that he will suffer significant, severe, or deadly harm as a result of that action? How can comfortable, practical, or even life-changing (but not life-preserving) *ex post* benefits for the majority override the actual death of one person? One can argue that it matters whether the potential costs and benefits are distributed equally, in the sense that everyone stands a chance to benefit as well as faces similar risks of harm. In such a scenario, the future victim's harm can be offset by his present access to benefits related to the risky action. If someone has always used the train to commute between home and work, and as such has shared in the benefits associated with train transportation, it would seem unfair if that person files a complaint against train transportation in general only when he is (about to be) involved in a train accident in which he loses his life.

Matters seem to become more pressing when potential costs and benefits are not distributed equally, and future victims are exposed to risks without *being able* or *willing* to share in the benefits. Consider Scanlon's (1998: 209) example of air travel and the risk to people on the ground of being killed by a crashing plane. Ashford (2003: 298) mentions that poor people are exposed to this risk while being *unable* to benefit from air travel. Véronique Munoz-Dardé (forthcoming publication) develops the example further by making it revolve around an Amish farmer, who is exposed to the same risk, but is *not willing* to share in the benefits of travelling by air because his convictions prohibit him to make use of such technological developments.

The problem is that in the context of socially beneficial risky actions there will almost always be that one person, or group of people, who is severely harmed as a result of an activity from which others benefit. Innocent bystanders (those who do socially participate and therefore stand a chance to benefit, as well as those who do not) will be harmed as a result of allowing socially beneficial risky activities such as road or air travel, infrastructure and real estate projects, medical experiments and vaccination programmes. One only needs to be able to imagine the *ex post* perspective of one hypothetical future death as a result of a risky activity in order for that activity to be

deemed impermissible. The imagined victim can then file a reasonable and overriding complaint against it, regardless of enormously beneficial outcomes or a huge group of beneficiaries: the badness of death trumps the goodness of any other benefit. His complaint is even stronger if he did not benefit from the risky activity in the first place, such as the Amish farmer killed in a plane crash, or a vegan killed by an outbreak of an infectious disease in livestock.⁴⁵ This means that virtually every action that potentially gravely harms someone, and every principle authorising such actions, can be reasonably rejected by the one who is potentially harmed (Fried 2012b; also see James 2012; Frick 2015; Verweij 2015). Such competing claims bring one back to the now known, overly restricting and extremely risk averse, moral gridlock prohibiting all actions involving risk to others.

6.3.3 Numbers count

In the above, the possible harms and benefits resulting from socially beneficial risky actions were unequal: the complaint against being killed had to be compared to the complaint against being denied life enhancing, but not life-saving, benefits. In such cases *ex post* contractualism results in a moral deadlock. How does it fare when guiding choices between alternative courses of actions that both have an equally bad worst possible outcome, i.e. death? Consider the construction of a hospital: the death of construction workers during the process is possible, but even more people die if the hospital is not built. An equally weighty complaint against being killed can now be given from the imagined *ex post* perspective of the dead workers *and* from that of the dead patients. Now one is back in a situation of moral gridlock for in such cases the respective weights of the competing complaints form a tie, i.e. they cannot determine which alternative is morally permissible. In these situations, *ex post* contractualism allows numbers to break the tie: one should choose the alternative that saves most people, or harms the least (Scanlon 1998: 235).

Now one has to consider that almost every action can hypothetically lead to death. Moreover, in the context of socially beneficial risky actions, which are performed on a large scale (e.g. mass construction projects), are often repeated (e.g. vaccination programs), or both (e.g. driving), death becomes a statistical certainty. This means that

⁴⁵ An example from Marcel Verweij (2015: 142 – 143).

in essence every choice between alternatives in a social setting becomes a tie, and the numbers of people coming to harm have to offset the draw. Death is statistically certain to occur whether one chooses to construct a building or not, run a vaccination program or not, allow a speed limit increase or not. It does not matter whether a specific alternative has a lower probability of death than other alternatives, for *ex post* contractualism does not incorporate probabilities into moral evaluation. But by allowing the number of people coming to harm to break the tie in draw-like situations, *ex post* contractualism invites aggregation in via the backdoor.

An *ex post* focus on actual outcomes then either leads to moral deadlock by prohibiting all risk impositions (and therefore virtually all actions), or reverts back to aggregation to decide what is the best, or the least-worst, alternative. Moreover, it paints an illusionary picture of reality by assuming that one can know what consequences a decision or action will in fact have. If one would have hindsight at the time of decision-making, the choice for one alternative or the other would be much less difficult.

6.4 The ex ante perspective

The *ex ante* perspective captures the normal reference point for decision-making in real life: people possess knowledge about themselves, their preferences and dispositions, but they are never completely certain, i.e. they can only guess or estimate, how decisions and actions will affect them. People are placed behind, as Sophia Reibetanz (1998: 301) calls it, a “natural veil of ignorance”. One might for example know that there is a possibility, a probability, or even a statistical certainty that some persons will come to harm, but one is seldom able to identify the victims beforehand. In other words: one might know that there will be least advantaged persons, but often one cannot be certain who those persons will be. Persons exposed to risk are therefore owed a justification, not of the harm itself, but of their exposure to harm, and the probability that they will experience harm. Important for morally evaluating actions from the *ex ante* perspective are not actual but expected outcomes of those actions. One bases one’s moral assessment of a risk imposition on the consequences one expects it to have, meaning that its permissibility depends on the information one has, what one in fact knows or can reasonably be expected to know, about possible or probable harmful outcomes. From the *ex ante* perspective, the main questions are: ‘how likely am I to come to harm

because of this risky activity, and how likely am I to benefit from it?’

Take a policy example of a government deciding whether or not to increase the speed limit for motorised vehicles. What matters for the evaluation of its decision are not the actual accidents and deaths that will occur over time as a result of a higher speed limit, but the statistical information available to the authorities at the time of decision-making. Actual accidents and deaths matter only insofar as they influence and determine statistical information over time. According to this information the authorities have to review the permissibility and tenability of the height of the speed limit. Now a higher speed limit will undeniably increase the probability of road accidents, and it is this larger chance of harm that has to be accounted for. The only way in which a government can justify raising the speed limit is by referring to a negligible increase in the likelihood of harm faced by all road users, coupled with an increase in the benefits they are likely to gain. The complaints road users might have against an increase of the speed limit are discounted by the probability of them coming to harm: the lower the probability, the weaker their claim.

To elaborate more on this, consider a decision-making institution debating which one of two vaccines to use in a nationwide vaccination programme against a deadly influenza virus. Assume that everyone faces identical risks of negative side effects associated with the vaccines, meaning that risks and benefits are equally distributed across the population. This is the case for most socially beneficial activities, otherwise they would not be considered to be truly *socially* beneficial. Vaccine A has a relatively large probability of a severe side effect: one in a 1000 people will lose their eyesight. Vaccine B on the other hand has a relatively small probability of a fatal side effect: one in 1 million people will die after being administered the vaccine. The institution, when deciding whether to use Vaccine A or B in their programme, takes the perspective of the average individual citizen and assesses which choice is justifiable, other things being equal, from this perspective. Not knowing whether one will in fact be the one in a 1000 who becomes blind, or the one in a million who dies, it is rational from an *ex ante* individualistic perspective to weigh expected costs against benefits, and go for the most equal and fair option. It is rational to choose vaccine B, for the chance of becoming blind when administered vaccine A is 1000 times bigger than the chance of dying when administered vaccine B, whereas the expected benefits are the same, i.e. protection

against the deadly influenza. The institution must opt for vaccine B: this option is justifiable to each potentially affected individual before harm has occurred. Moreover, the complaint an individual might file against dying (or: being allowed to die; being killed) when administered vaccine A is discounted by its probability, and cannot trump the much stronger complaint another individual might have against losing her eyesight (or: being allowing to become blind; being blinded), for this is much more probable.

6.4.1 Reasonable ex ante, unreasonable ex post

An action might be justifiable to each potentially affected person before the harm associated with a risky action occurs. But the person that in fact has come to harm as a result of a risk imposition can reasonably reject that action from an *ex post* perspective. Now one might argue, as Lenman (2008: 117) does, that “a policy that is not acceptable at every time is plausibly acceptable at none”. However, such reasoning is too optimistic about people’s ability to avoid harm. It ignores the fact that harm is bound to occur at some point as a result of any choice made in a social setting. It assumes that if the right choices are made no one will come to harm, or that the amount of people coming to harm as a result of a certain choice determines whether that choice was the right one. But this is indicative of a hindsight bias, for it enslaves the moral justifiability of a choice to its actual consequences. Moreover, the fact that some people are harmed as the result of a certain decision might be a tragic outcome, but that alone does not undo the *ex ante* justifiability of that decision. Actual consequences, or the *ex post*, backward-looking perspective, should not be used to debunk the reasonableness of a decision *ex ante*.

6.4.2 Reverting back to aggregation

Even though *ex ante* contractualism escapes the hindsight bias as well as the problem of moral deadlock haunting the *ex post* perspective, it has its own obstacles to overcome. Even though its evaluation of conduct based on the justifiability of its expected outcomes sounds familiar – for it is the way in which many social decisions, especially policy decisions affecting large groups of people, are made – it is a problematic solution for contractualism. By allowing probabilities to guide moral evaluation of risky conduct before their consequences have unfolded in the world, *ex ante* contractualism starts to look suspiciously like a masked form of utilitarianism. Take the vaccine example: the

choice that optimises the expected outcomes for a given individual converges with the choice that optimises aggregated wellbeing (Fried 2012b: 44). Also, by allowing probabilities to determine the weight of individual complaints, *ex ante* contractualism breaks with the contractual opposition to numbers. It is therefore unclear how *ex ante* contractualism offers a systematic alternative to utilitarian decision-making tools like probabilistic cost-benefit analysis and expected utility maximisation.⁴⁶

6.4.3 *Individual vs. social aggregation*

However, some have argued that weighing probabilities of harms and benefits does not necessarily entail harmful aggregation (James 2012; Frick 2015). A specific form of aggregation, namely, is consistent with the separateness of persons: intrapersonal aggregation of risks and benefits over a human lifetime. For an individual, it makes complete sense to expose oneself to small, or sometimes even significant, risks of harm to obtain certain benefits. From an individual *ex ante* perspective, it then makes sense to approve socially beneficial risky actions, provided that one does not know in advance whether or not one will be negatively affected. For example, it can be reasonable *ex ante* to consent to allocating scarce resources to research on a cure for a common disease instead of a rare disease. Now if it eventually turns out that one contracts the rare disease, one can obviously regret one's *ex ante* decision from an *ex post* perspective, but this does not make the *ex ante* decision unreasonable. The fact that one lacked information about the actual outcomes of a decision or action *ex ante* is morally important: because one does not know if one will be the person that is harmed, it can be in one's individual interest to take, or agree to exposure to, a risk.

An intrapersonal speculation in the face of risk consists in deciding *ex ante* from an individual perspective whether it is worthwhile to be exposed to a risk, and therefore justifiable for others to impose that risk. This stands in contrast with an interpersonal trade-off in the face of certainty, in which one decides from an *ex post* perspective whether it is worthwhile to sacrifice a few for the benefit of the many (Frick 2015). By refraining from aggregating risks and benefits across individuals, but allowing it when it is intra-personally justifiable, aggregation is circumscribed by respect for persons. As

⁴⁶ For an elaborate critique, see Fried (2012b): *Can Contractualism Save Us from Aggregation?*; and Fried (2016: working paper): *Facing Up to Risk*.

such, one walks “a careful line between the “bad aggregation” characteristic of utilitarianism and the “good aggregation” that is both unavoidable and fully appropriate in public life” (James 2012: 266).

6.5 Conclusion

The central question in this chapter read: *Does contractualism provide a convincing evaluation of risk impositions?* I have discussed two types of contractualism – *ex post* and *ex ante* – and their evaluation of actions involving risk to others. *Ex post* contractualism runs into the problem of hindsight when justifying risk impositions, whereas *ex ante* contractualism arguably does not provide a sustainable alternative to utilitarianism. Contractualism thus far does not provide a completely satisfying account of the evaluation of risk impositions. But limiting aggregation by respect for persons does open the door to seeing the permissibility of risk impositions in a new light, for it entails the possibility of allowing one to weigh costs and benefits, as well as distributing them unevenly. If one wants to justify a risk imposition by referring to a trade-off that is desirable overall between costs and benefits, while at the same time displaying respect for individual persons, one has to take on the perspective of the people potentially affected by the risk in question. If these people can consider the risk imposition to be acceptable, or a risk worth taking, at the time of decision-making, the risk can be justifiably imposed. However, a prerequisite for this solution is that potentially affected people are known in advance, otherwise the justification cannot be addressed to them. Moreover, thus far the contractualist solution leaves out the perspective of the decision-maker, on whom the burden falls in the end to make the choice whether or not to impose a risk. In Chapter 8 I will focus on the position of the risk-imposing agent, and on what she can do in order to ensure the justifiability of choices made and risks imposed under conditions of uncertainty.

7. RECAPITULATION

So far, a lot has been discussed. Let us take a moment to determine where we stand in relation to the main question that this research aims to answer: *When – under which circumstances or conditions – it is acceptable to impose a risk on others?* Or phrased differently: when is it acceptable to perform actions that put other people at risk? In order to answer this question, three research questions were formulated. The first research question – *What is a risk?* – was answered after the first two chapters. The second research question – *Do mainstream ethical theories provide a convincing evaluation of risk impositions?* – can now be answered based on what has been discussed in Chapters 3 to 6, in which respectively a utilitarian, deontological, rights-based, and contractualist evaluation of risk impositions were considered. I conclude that individually the discussed theories draw attention to aspects that without a doubt influence the evaluation of risk impositions, but that on their own they are not capable of providing a sound answer to the question of when it is acceptable to impose risks on others. They do not provide convincing evaluations of risk impositions. In this short chapter I will support this conclusion by recapitulating the main strong points and weaknesses of the discussed ethical theories in the context of risk. By doing so, I will pave the way for the third research question: *Can a virtue-ethical understanding of responsibility offer a tenable alternative evaluation of risk impositions?*

7.1 *The utilitarian perspective*

A utilitarian answer to the main question is that a risk imposition is acceptable if it promises greater overall benefit than overall harm, i.e. if the probability of a beneficial outcome outweighs the probability of a negative outcome for the greatest number of people. This outcome-oriented perspective acknowledges that the consequences of actions that expose others to risks influence how one evaluates those actions. It first of all matters whether these consequences are considered good or bad: one might find it acceptable to be exposed to risk if one can obtain some benefit because of that exposure. Secondly, it matters how many people stand to win or lose: it is in general morally wrong to let one person suffer so that others can benefit, but there are situations in which this is justified. Thirdly, it matters how likely and big the benefits and harms are: for example, the more likely or grave the expected harm, the more likely and desirable the expected benefit must be – amongst other things – to justify an action

imposing that harm. And fourthly, it matters whether benefits or harms in fact materialise: a beneficial outcome can make one forget the risked harm, whereas a harmful outcome can make one doubt whether the promise of benefit was worth suffering the harm.

All these considerations, related to the consequences of risk impositions and the number of people experiencing them, do influence the acceptability of risk impositions. However, they are not the only important things to consider when evaluating actions that put others at risk. A major downside of a purely utilitarian evaluation is that it is radically egalitarian: it focuses on overall outcomes and does not show regard for the way individual people are potentially affected by risk impositions. Such moral reasoning can justify letting a few people suffer so that more people can thrive. True, sometimes the voice of a few loses against the demands of the many, but it matters how one arrives at that conclusion. It should not be reached by purely calculative reasoning based on interpersonal aggregation: such reasoning must be circumscribed by an innate respect for the personhood of the potential losers.

Another problem is that to weigh expected benefits against expected harms one needs to be able to predict what consequences will result from present actions. The utilitarian perspective then depends heavily on the ability to derive the likelihood of future outcomes and their implications from current knowledge. Moreover, it also assumes that people use available knowledge in a rational and calculative way when making decisions, that they are proactive in identifying risk, and responsible in minimising harm. But probabilistic information about risks is not always available. And even when it is, many people do not incorporate it in their decision-making process as it is difficult for most laymen to understand such information.

Non-consequentialist alternatives to the utilitarian evaluation of risk impositions place the notion of respect for persons at the centre of their moral reasoning, albeit in a slightly different interpretation. Three of those alternatives were discussed. A deontological perspective centres around the duty not to harm, a rights-theoretical perspective around the right not to be harmed, and a contractualist perspective around the objections the person(s) exposed to risk could have against that exposure.

7.2 The deontological and the rights-based perspectives

A deontological answer to the main question is that a risk imposition is acceptable if it is in accordance with the duty of the agent imposing the risk to do no harm. This approach acknowledges the interpersonal obligation to respect the integrity and wellbeing of other persons, and to refrain from harming them without qualification. The same can be said of a rights-based answer, which argues that a risk imposition is acceptable if it does not violate the right of the person exposed to risk to not be harmed. This approach also acknowledges the importance of respecting others as persons by drawing attention to their right not to be harmed. The duty not to harm and the right not to be harmed can explain why for example reckless or negligent behaviour are considered wrongful: when Johnny speeds in his car and exposes other road users to a higher than normal risk of an accident, he – other things being equal – refutes his duty not to harm others and does not respect the right of other road users to not be harmed. However, one has to draw a line somewhere between permissible and impermissible risks of harm. If no risks were permissible, life would be unliveable; but if all risks were permissible, life would be equally unliveable.

Now what is wrong about Johnny's reckless and negligent driving is not merely that it exposes others to some possibility of harm, but that this is a likely and severe (perhaps even deadly) possibility. One might then establish the threshold for acceptable risk impositions on the basis of a) how likely or probable the risk is, and b) how severe the risk is. Actions that impose risks that fall above the threshold would qualify as being not in accordance with the duty not to harm, and as violations of the right not to be harmed. But knowledge is again a problem here: determining whether deontological and rights-based principles will be violated depends on what is known at the time of decision-making. They can then only provide guidance for evaluating risk impositions before harm materialises if the risk-imposing agent can or should know the future consequences of his actions.

Moreover, even likely or severe harms can be deemed permissible if other considerations, such as the expected benefits related to the risk imposition, are overriding. For example, there might come a time when one will judge it permissible to implement risky geo-engineering techniques to counteract anthropogenic climate

change because the conservation of biodiversity, or perhaps the conservation of human life on earth, is considered to be more desirable than heavy financial burdens or extreme international tensions are considered to be undesirable. It then matters how great the expected benefits are, and to whom they accrue. Likely or severe harms might also be deemed acceptable if there are no other viable alternative courses of action available to the risk-imposing agent, or if the person exposed to risk has a say in the decision-making process, consents to, or is compensated for the exposure.

On their own then, the deontological as well as the rights-based perspective struggle to argue convincingly where and how to erect a threshold that distinguishes permissible from impermissible risks. The duty not to harm and the right not to be harmed are not the only considerations that underpin the evaluation of risk impositions, and should be incorporated into a more holistic approach.

7.3 The contractualist perspective

A contractualist answer to the main question is that a risk imposition is acceptable if the person exposed to risk cannot reasonably object to the exposure. The contribution of this principle is that it gives those that might suffer harm a voice as well as bargaining power. If an action will expose a person to a likely possibility of grave harm – for what has to be justified is the possibility of harm, not the harm itself – he can reasonably object to the exposure, despite the weight other considerations, such as benefits, the number of people enjoying them, or compensation, might have. However, a contractualist evaluation must determine how likely and grave a harm must be to give a person a reason to object, otherwise all potentially harmful actions could be prohibited.

A problem for such evaluation of risk impositions are normal everyday actions that have dire consequences. One can turn on the stove and cause a domestic fire, reverse one's car and hit a child, and plant flowers in the garden to which a passer-by has a life-threatening allergic reaction. The possibility of understanding such risks as part of a system of conscious risk-sharing and risk-trading was discussed. Because risks are a part of life, and social life in particular, people in communities seem to naturally share and trade some risks. However, to consciously share and trade all risks one needs exhaustive information about the future: one needs to be able to gauge uncertainty,

think through the possible consequences of actions, identify and compare risks. Developing and implementing a sharing-and-trading system for all risks would be infinitely complex and therefore impractical. Moreover, risks that cannot be traded or shared might also be acceptable if there are no viable alternatives available to the risk-imposing agent. But the main problem for a contractualist evaluation of everyday risk impositions arises when there is uncertainty about the likeliness and severity of consequences *and* uncertainty about who will suffer them. Under such conditions one has to revert back to utilitarian principles, related to the (un)desirability of consequences and the number of people affected, to say something about the acceptability of a risk imposition. On this point contractualism has rightly been accused of concealed aggregation.

However, there is a class of risk impositions that contractualism can evaluate adequately: social risks. These are social actions or projects that have potentially beneficial outcomes for the many, but also potentially harmful consequences for some (road construction, vaccination programmes, etc.). *Ex ante* contractualism explains that if everyone has roughly the same (large) prospect of benefitting and the same (small) expectation of suffering harm from a proposed action, no one has a reason to object to that action: therefore, it is acceptable to impose such risks. With regard to the social risks that fit this description, contractualism succeeds in combining a calculative outlook focused on overall expected outcomes with the notion of respect for persons. It is committed to the conviction that every person deserves individual concern and has an equally relevant interest in reducing one's risk exposure. But many risks do not fit the social description, and therefore contractualism does not offer a generally applicable and substantial evaluation of risk impositions.

7.4 The proposed alternative

I argue that risk impositions cannot be adequately evaluated with one principle alone: for that one needs a whole array of principles. The available ethical perspectives are, as discussed, insufficient to assess the acceptability of risk impositions, for in general they incorporate just a fraction of the important considerations. They are however not superfluous, for taken together they can form a holistic account of the acceptability of risk impositions. What is required is an alternative that enables one to evaluate actions

that expose others to risk depending on the context in which they are performed.

I believe the discussed perspectives all run into difficulties for the simple reason that they focus exclusively on finding (an) action-guiding principle(s) that can be used to evaluate risk impositions. Perhaps this quest is born from the belief that one can theoretically know and control the outcomes of actions, as was discussed and critiqued in sections 1.3 and 1.4 of this research. This deterministic bias might have led to a narrow focus on rules and principles in normative thinking, which entails the idea that if one defines and lives by the right rules or principles, one can escape epistemological as well as moral uncertainty and will know what is the right thing to do in any given context. But one must acknowledge that such rules and principles, insofar they exist, will always have exceptions. I then agree with Nafsika Athanassoulis and Allison Ross (2010: 218), who state that “it is impossible to give a generalised account of the ethics of risk-taking or provide a formula for assigning moral responsibility/blame for the consequences of risk-taking”.⁴⁷ What determines the justifiability of actions performed under conditions of uncertainty, and what renders risk impositions acceptable, cannot be captured in one rule or principle.

Moreover, as the previous four chapters indicate, there is not one moral criterion that forms the basis for evaluating risk impositions. An honest evaluation recognises that risk impositions are not right or wrong depending on their adherence to a particular rule, but that they are right or wrong within a specific context in which a multitude of moral considerations come into play. These contextual particularities provide an action with a degree of rightness or wrongness. For example, consider drawing blood: it depends on the circumstances whether this action is a violation of a right not to be harmed – a person is forced to give blood and is not informed about associated risks – or in accordance with a duty to care – a medical professional performs the procedure in order to give proper health care. A focus on contextual particularities does not imply a lapse into complete moral relativism, for what is right, just, or good in a specific context can be perfectly right, just, or good in many – and perhaps even all – other contexts.

⁴⁷ The authors write about risk-taking, but with their ‘consequences of risk-taking’ they refer to the potential effects of risky actions on others, i.e. risk impositions.

But what principles and considerations apply in what circumstances, and how much weight should be attached to them? To determine whether it is acceptable to expose others to risk in a given situation, an agent must identify, assess, deliberate, and judge which principles are important in that context, to what extent they matter, and whether they justify exposing others to risk. Quality judgement is indispensable for imposing acceptable risks on others. Virtue ethics is concerned with making quality judgements in ever-changing particular situations. Traditional Aristotelian virtue ethics is centred on the notion of *eudaimonia*: the good life. However, I am not so much concerned with the general ethical question of good living or being good, but with the more specific question of good and prudent decision-making. Drawing on the discussions of modern agency and the importance of choice in Chapter 1, I believe that responsibility is a key concept in a modern understanding of virtuous decision-making. In the next chapter I wish to explore the notions of virtue and responsibility, the idea of responsibility as a virtue, and the contribution of these notions and ideas to the evaluation of risk impositions. This exploration will be guided by the third research question – *Can a virtue-ethical understanding of responsibility offer a tenable alternative evaluation of risk impositions?*

PART III

8. THE VIRTUE-ETHICAL PERSPECTIVE: RESPONSIBILITY AS THE VIRTUE OF ANSWERABILITY

8.1 Introduction

As the main question remains unanswered, the search for an adequate evaluation of risk impositions continues. I propose an alternative ethical perspective, born out of a hybridisation between virtue ethics and the notion of responsibility. From this perspective, one can formulate the following, very simplified, answer to the main question: it is acceptable to impose a risk on others if one does so responsibly. In this chapter I will argue that responsibility for risk impositions can be understood as the ability, or at least willingness, to answer the question as to why one acted the way one did, i.e. to provide reasons for one's actions. Responsibility can then be interpreted as answerability. But answerability involves more than just giving reasons for acting. If the extent of one's responsibility would be limited by one's ability to reasonably explain why one acted the way one did, one cannot be answerable for harm that one did not cause, did not intend, or could not foresee. I believe that agents sometimes must be held accountable for risks they did not impose directly or personally, as well as for unintended or unforeseeable risks to others. I therefore propose to extend the notion of answerability to involve certain kinds of attitudinal responsiveness – e.g. experiencing and expressing care and respect – as well as practical responsiveness – e.g. adjusting one's actions to avoid or minimise further harm – to risky and harmful situations.

What qualifies as a legitimate reason for acting or an appropriate response to risky and harmful situations depends on many different things: the people involved, their values and norms, what they know, and the circumstances in which they operate. It therefore makes sense to understand responsibility as a virtue: a good moral quality that enables one to deliberate what moral considerations are relevant in a given situation, and judge what is the right thing to do in that situation. A virtue-ethical interpretation of responsibility is then promising with regard to the evaluation of risk impositions, as it is not fixated on abstract ethical rules and principles, but is committed to the virtuous and responsible application of those rules and principles in practical situations. It stands

closer to the reality of actual situations that involve possible harm to others, as it recognises that every situation must be assessed and managed individually. Moreover, it draws attention to the person imposing risks on others and her responsibility to justify her decisions and actions.

In this chapter I aim to develop this new and useful approach to the evaluation of risk impositions. In order to do so, I will flesh out the notion of responsibility as the virtue of answerability by drawing on the expositions of other philosophers on the topics of responsibility, answerability, virtue, and risk (responsibility: G. Williams 2008; McKenna 2012; Niekerk & Nortjé 2013; answerability: Anscombe 1957; Hieronymi 2014; virtue: Aristotle 2000, 2011; Rachels & Rachels 2010; Annas 2011; responsibility and risk: Hansson 2013; virtue and risk: Athanassoulis & Ross 2010; Van de Poel & Nihlén Fahlquist 2012; Nihlén Fahlquist 2015).

8.2 Responsibility

‘The cabinet is responsible to the parliament’, ‘the accused claims not to be responsible for a murder’, ‘that kid is too young to be considered responsible for its behaviour’, ‘Martin acquired many more responsibilities the day he became a father’. Responsibility is used in different ways and does not have one standard definition. As Neal Tongazzini (2013: 4592) remarks, responsibility is “remarkably easy to use but dreadfully difficult to understand”. One can act, be, or be held responsible, and one can acquire, take, deny, or claim responsibility. In philosophical literature, four types of responsibility are generally distinguished: causal responsibility, role responsibility, legal responsibility, and moral responsibility (Hart 2008; Tongazzini 2013).

Causal responsibility is being responsible for having caused something to occur: Jane is responsible for the broken plate because she dropped it on the floor; Jack is responsible for delaying the flight because he overslept and arrived late at the airport. One can also be causally responsible for having failed to do something, i.e. for an omission: Daisy is responsible for Gatsby’s heartache because she did not love him. One can understand causal responsibility in terms of attributability: a person did or did not do something, and the consequences of that action or omission are therefore attributable to that person. Role responsibility is acquired by virtue of fulfilling a role or having a position, either

on a personal or professional level: people have responsibilities as friends, parents, teachers, colleagues, bosses, etc. Legal responsibility is related to being punishable or liable for a potential or actual harm, such as negligent driving or vandalism. Note that one can be legally responsible without being causally responsible: a child who shoots a ball through a window is causally responsible for the damage, but his parents are liable for compensating the homeowner. Also, one can be causally or legally responsible without being blameworthy. For example, if the child broke the window by accident, he is causally responsible but did not commit a moral wrong; his legally responsible parents are also not blameworthy (unless they refuse to compensate the homeowner). Blameworthiness is related to moral responsibility, which is understood as being the appropriate object of moral judgements, expressed in terms of praise and blame. Hendrik Verwoerd is blameworthy, and therefore morally responsible in the negative sense, for his role in the construction and maintenance of the South African Apartheid regime; Nelson Mandela is praiseworthy, and morally responsible in the positive sense, for the part he played in the South African liberation struggle.

Moral responsibility can also be understood by referring to obligations and virtues. As persons, members of a moral community with other human beings, people have certain obligations towards each other. In most societies, contemporary and historical, it is for example considered wrong to lie to, steal from, or kill, others. If one does not honour these obligations, and one does lie, steal, or kill, one is irresponsible and blameworthy – other things being equal – for being morally at fault. If on the other hand one is, and acts as, a virtuous person by being honest, fair, and caring, one is responsible and praiseworthy – again, other things being equal – for one's behaviour. One can then be blamed for violating moral obligations, and be praised for respecting them. It must be noted that simply fulfilling one's obligations does not necessarily makes one a praiseworthy and virtuous member of the human community. While respecting one's duties towards others is a necessary condition for humane interaction with others, acting virtuously is doing more than what is required. One is merely doing one's human duty if one does not kill or harm others; one is virtuous if one cares for others and enables their personal flourishing.

To highlight these different aspects of moral responsibility, Jessica Nihlén Fahlquist and Ibo van de Poel (2012) divide it into five more specific notions: responsibility-as-virtue,

responsibility-as-obligation, responsibility-as-accountability, responsibility-as-blameworthiness, and responsibility-as-liability. Responsibility-as-virtue is the disposition to act responsibly: ‘that politician is a responsible woman’. Responsibility-as-obligation is the state of having to deal with something, to see to it that something is the case: ‘it is the responsibility of parents to take care of their children’.⁴⁸ Responsibility-as-accountability is the moral obligation to account for what happened: ‘the oil firm is responsible for the oil spill’. Responsibility-as-blameworthiness is being the appropriate object of blame: ‘it is irresponsible to tell prejudiced jokes’. And responsibility-as-liability is being the appropriate object of punishment or claims to recuperation, as in the example of the parents and the broken window.

For conceptual purposes these distinctions are helpful. However, there is always some overlap between different forms of responsibility. Take again the obligation parents have to take care of their children. A parent who leaves a young child alone all night to party with friends has forsaken a parental duty, and can be rightfully considered negligent and blameworthy. A person is then the appropriate object of blame if she has committed a moral wrong: if she had a moral obligation to act in a certain way but failed to do so. Responsibility-as-obligation and responsibility-as-blameworthiness are then inextricably tied, and covered by the disposition to act responsibly (responsibility-as-virtue), i.e. recognising one’s obligations and blameworthiness in particular cases. Moreover, responsibility-as-virtue entails the willingness to acknowledge one’s role in, and account for, harms done (responsibility-as-accountability). Also, such a virtuous disposition entails the ability to discern when one is liable for harm (responsibility-as-liability). I therefore propose to unite responsibility as obligation, accountability, blameworthiness, and liability under the notion of virtue. If one has a virtuous disposition to act responsibly, one aims to fulfil one’s moral obligations towards others, displays a willingness to account for one’s actions, and to accept liability when one’s actions have resulted in harm; if one fails to have such active intentions, one is blameworthy.

⁴⁸ See how this ties in with role responsibility. However, role responsibility should be distinguished from responsibility as obligation (as Nihlén Fahlquist and Van de Poel do), for one can fulfil a specific role without having any associated moral obligations. For example, if one works in a lunchroom and is responsible for making customers coffee in one’s role as employee, one is not obliged to do so. On the other hand, if one is a parent one is responsible for taking care of one’s child, not only because one fulfils the role of parent, but also because one has an obligation to do so. The difference lies in the fact that the relationship between parent and child is a moral one, whereas the relationship between an employee and a customer is not.

But what does it mean to have the virtue of responsibility, and why is it relevant for our purposes to understand responsibility as a virtue? I believe that the virtue of responsibility and the notion of *phronēsis*, or prudence, can aid in determining when it is acceptable to impose risks on others. To be able to argue why I think this is so, I first need to explicate how I understand these virtue-ethical notions.

8.3 *Virtue ethics*

Virtue ethics is often characterised as a third branch in ethical theorising, next to consequentialist and deontological theories. The latter two are both concerned with the moral quality of actions, by referring respectively to the desirability of their consequences and to the respect for persons they exhibit. Virtue ethics is concerned with agents and the quality or virtuousness of their character, based on their motives and the continuity and reliability of their behaviour over time.

8.3.1 *Virtues*

What is a virtue? Truthfulness, patience, courage, compassion, benevolence, loyalty, and fairness for example are all recognised as virtues, as things that are good to have or be, but why so? A dictionary consultation yields that a virtue is “a good moral quality in a person, or the general quality of being morally good” (Cambridge Dictionary Online, 2016, s. v. ‘virtue’). Here one finds two determinants of virtue. Firstly, it is a moral quality in a person, i.e. a trait of his or her character. Secondly, it is not just any moral quality in a person, but a good one, i.e. a praiseworthy trait of his or her character: this distinguishes virtues from vices. But an adequate definition of virtue needs to incorporate a third determinant as well, namely, that a virtue is a consistent character trait, i.e. “a *commendable* trait of character manifested in habitual action” (Rachels & Rachels 2010: 160, original italics).

Means between extremes

Commendableness is a careful balancing act. For what makes a person not a miser or alternatively extravagantly wasteful, but generous? What makes a person not cold-hearted or obsessively concerned, but compassionate? What makes a person not

quarrelsome or fawning, but friendly? Aristotle, the intellectual father of virtue ethics, argues that virtues are means between two extremes. The extremes are characterised by deficiency on the one hand and excess on the other. As Aristotle (2011: 38 – 39 [1108b15]) writes: “There are, then, three dispositions, two of them vices – one relating to an excess, the other to a deficiency – and one of them a virtue, namely, the mean”. If one lacks generosity, compassion, or friendliness, one is tight-fisted, uncaring, or pugnacious. Being too generous, compassionate, or friendly makes one prodigal, obsessively concerned, or obsequious. Finding the midway point between these extremes implies virtuousness.

Where the mean between extremes lies depends on the situation at hand, the person acting in its context, and what the situation requires from that individual. Take the virtue of bravery. In the military soldiers are required to carry out orders from their superiors. Being able to do so, even under chaotic and life-threatening circumstances, can testify to bravery. But sometimes disobeying a direct order can be brave: for example, when a soldier risks his or her own life to save others despite a command to retreat from the battle zone. However, that very same disobedience can under different circumstances be considered foolhardy. Similarly, retreating from a battle zone is sometimes a cowardly act, and other times a tactful choice. What bravery consists of in the context of war also depends on personal circumstances: a soldier might be considered brave if he or she engages in battle, whereas a parent might be considered brave if he or she flees from a conflict area to bring others to safety. It requires good judgement to determine where the mean between extremes lies in practical situations. This will be expounded upon in the section on *phronēsis* and deliberation.

Which traits of character are commendable also differs, depending on profession, role, and environment. With regard to profession, take Rachels’ and Rachels’ (2010: 160) example of a teacher and a car mechanic: from a teacher one expects knowledgeability, articulation, and patience, but from a car mechanic one expects skilfulness, honesty, and conscientiousness. This is not to say that a car mechanic can be impatient, let alone that it is good for a car mechanic to be impatient. However, for a person in that profession the virtue of patience is not considered the most important: it is more commendable for a car mechanic to be skilful. Something similar can be said pertaining to role: for example, the role of a friend and the role of a neighbour demand a different set of

virtues. One wishes a friend to be compassionate and loyal, whereas one would want a neighbour to be considerate and fair. The environment also influences which virtues are important. Take an emergency room and an office canteen: the first setting asks for decisiveness and prudence, the latter for moderation and friendliness.

But even though different virtues, and expressions of those virtues, are relevant depending on individuals, circumstances, professions, roles, or environments, moral virtues in general are habitual traits of character that are good for any person to have. Moral virtues do not merely make a certain car mechanic skilful or a certain teacher articulate, but make a person in general a good human being. Rachels and Rachels (2010: 161, 166) relay Aristotle's argument that virtues are good to have because virtuous persons will fare better in life: virtues are moral qualities that enable one to flourish and live successfully. Virtuous persons are responsible and prudent individuals; hardworking and tactful professionals; fair and cooperative community members, etc.

Honourable motivations

An appealing aspect of virtue ethics is that it can explain why motivations are important in ethics. Rachels and Rachels (2010: 168) discuss the following illuminating example:

You are in the hospital recovering from a long illness. You are bored and restless, and so you are delighted when Smith comes to visit. You have a good time talking to him; his visit is just what you needed. After a while, you tell Smith how much you appreciate his coming – he really is a good friend to take the trouble to come and see you. But, Smith says, he is merely doing his duty. At first you think he is only being modest, but the more you talk, the clearer it becomes that he is speaking the literal truth. He is not visiting you because he wants to or because he likes you, but only because he thinks he should “do the right thing.” He feels it is his duty to visit you, perhaps because he knows of no one else who is more in need of cheering up.

As the authors remark, there is nothing wrong with Smith's actual action of visiting you in hospital. There is however something seriously lacking with regard to his motivation,

namely, that he visited you because it is his duty to cheer you up and be a good friend. Doing the right thing simply because one is obliged to do so negates its rightness or goodness, or simply its value. Virtue ethics then opposes the deontological argumentation that one should not harm others purely because it is one's duty: instead, not harming others should come from a place of care. Virtuous persons are not ethical robots programmed with the ability to understand what abstract ethical rules require them to do, under what conditions, and at what time. On the contrary, they are sensitive to their circumstances, care about the quality of their own will and character, and are invested in their relationships with others. They aim to be good and do good out of honourable motivations. In short, they respond appropriately to the "demands of the self and the demands of the world" (Swanton 2003: 193).

A developmental notion

The definition of virtue as a habitual trait of character implies that one instance of excellent judgement and behaviour does not make a person virtuous: a virtuous person sustains virtuous behaviour over time. Similarly, one instance of bad judgement or behaviour, or failing to be continuously virtuous, does not necessarily make a person wicked or immoral. A virtue is not a static state or condition that one can achieve and retain, but rather a dynamic capacity to make quality judgements in various situations, i.e. judgements that are expressive of a good character. A virtue then is, as Julia Annas (2011: 38) states: "an essentially developmental notion". As people encounter new situations and face new challenges, their understanding changes of what a specific virtue entails. Annas gives the example of a boy who first associates situations of war, sports, and fighting with bravery. That is the understanding he has adopted from movies and magazines. Later he encounters other expressions of that virtue, like a friend who is diagnosed with cancer and bravely deals with painful situations in hospital. Through these experiences the boy's understanding of what bravery can amount to becomes richer, and he learns to not associate it narrow-mindedly with conflict, but more generally with perseverance and endurance in the face of adversity (*ibid.*: 37).

8.3.2 Phronēsis

Let us return to the example of Smith's hospital visit. The example was first suggested by Michael Stocker in his essay *The Schizophrenia of Modern Ethical Theories* (1976).

As the title indicates, Stocker argues that modern normative philosophy, with its obsessive focus on rules, principles, and right actions, resembles a schizophrenic patient who, because of an impaired connection between behaviour, thoughts, and emotions, has lost touch with reality, experiences delusions and misguided feelings, and acts inappropriately. To live in accordance with ethical rules simply because they are rules, without allowing exceptions or seeking a deeper understanding of those rules, is inconsistent with, and even contradictory to, the heart of ethics. There is nothing wrong with ethical rules per se, as they aim to capture deep-rooted convictions about what is good, right, fair, or just. However, they must always be applied to actual, often intricate, complex, and messy situations. The ability to do so is captured in the Aristotelian notion of *phronēsis*, translated as ‘practical wisdom’ or ‘prudence’.

Deliberation

Deliberation is vital for practical wisdom. To see why this is so, let us consider Aristotle’s distinction between *phronēsis*, *episteme*, and *techne*. *Episteme* is generally translated as ‘science’ and concerns scientific discovery of the universal laws of nature, or so-called ‘know-why’ knowledge. *Techne* is generally translated as ‘art’, and concerns technical or artistic knowledge about crafting and otherwise making objects, or so-called ‘know-how’ knowledge. *Phronēsis*, practical wisdom or prudence, concerns good choices and actions with the overall aim of living well. Aristotle (2011: 120 [1139a25 – 1140b5]) writes:

[W]e might grasp it [prudence] by contemplating whom we say to be prudent. It seems to belong to a prudent person to be able to deliberate nobly about things good and advantageous for himself, not in a partial way – for example, the sorts of things conducive to health or to strength – but about the sorts of things conducive to living well in general. A sign of this is that we say that people are in fact prudent about something whenever they calculate well with a view to some serious end in matters of which there is no art. As a result, the person skilled in deliberating would in general also be prudent. But nobody deliberates about things that cannot be otherwise, or about things that he himself cannot act on. [...] prudence [is] not a science or an art. [...] prudence is a true

characteristic that is bound up with actions, accompanied by reason, and concerned with things good and bad for a human being.

Now under conditions of certainty, where there is no need or room for personal choice or influence, *phronēsis* is irrelevant. Aristotle (*ibid.*: 1139a30) writes: “nobody deliberates about things that cannot be otherwise, or about things that he himself cannot act on”. It is however much needed under conditions of uncertainty, when one must choose between alternative courses of action. Making a prudent choice between such alternatives requires more than the understanding of abstract and technical rules (Aristotle 2000: xxiv – xxvi). It requires one to deliberate rightly and make quality judgements about what one should do in a particular situation, coupled with appropriate motivations. This then implies a to-and-fro movement between adhering to moral rules and dealing with concrete situations. Richard Bernstein (1986: 99, original italics) notes, in his discussion of Hans-Georg Gadamer’s appropriation of Aristotle’s ethics, that “*phronesis* [*sic*] is a form of reasoning and knowledge that involves a distinctive mediation between the universal and the particular. [...] *phronesis* is a form of reasoning [...] in which both what is universal and what is particular are *co-determined*”.

Abstract rules continuously find different and new expressions and interpretations when they are applied to concrete situations. To be practically wise, to be prudent or virtuous, is then to be able to deliberate what understanding of a rule is appropriate in a given context. The virtuous person walks along the medial line between two extremes, and acts in a way that is not excessive or deficient, but just right, taking into consideration all the relevant aspects of the context in which he operates. The idea of prudence was already discussed in Chapter 1, where I explained it as the virtue of foresight, the ability to foresee how the future will unfold – sometimes based on knowledge of the past and present – and to choose wisely between alternative outcomes that can be reasonably expected. Prudent deliberation under conditions of uncertainty naturally brings us back to the main focus of this research, which is to determine how one can justify performing actions that might have negative outcomes for others, embedded in the broader question of how one should act when the outcomes of one’s actions are uncertain. In the next sections I will relate the notion of virtuous and practically wise decision-making to the

notion of responsibility, and develop an understanding of acceptable risk impositions in terms of that relation.

8.4 *Virtuous response-ability*

I propose to understand virtuous decision-making and acting with regard to an uncertain future in terms of responsibility: a virtuous decision is a responsible decision. The decision to act – or simply to act – in a way that exposes others to risk then, can be considered acceptable if one chooses and acts responsibly. I further propose to understand responsibility as answerability, i.e. the ability to answer for one's actions, and/or to be perceptive and responsive to one's context. The meaning of responsibility as answerability is captured in the English word: response – ability, i.e. the ability to respond. *The Oxford Living English Dictionary* (2016, s. v. 'responsible') traces the origin of the word back to the late 16th century, in the meaning of 'answering to' and 'corresponding', coming from obsolete French *responsable*, which in turn is derived from the Latin root *respons-* and the verb *respondere*, meaning 'answering' or 'offering in return'. Interestingly, the word for 'response' or 'answer' is part of the word for responsibility in other languages as well: not only in some Indo-European languages, but for example also in some African languages. Consider the French words *response* and *responsabilité*, the Afrikaans and Dutch words *antwoord* and *verantwoordeli(j)kheid*, the Swedish words *ansvar* and *svar*, the Sesotho words *karabelo* and *boikarabelo ba*, and the Swahili words *majibu* and *wajibu*. This is, of course, merely an illustration of the relation between responsibility and giving answers: the relevance, or applicability, of understanding responsibility as answerability should not be limited to languages or cultures in which the words for these concepts share a common root.

8.4.1 *Addressing and responding*

One can be answerable for one's actions, and in particular one's actions that impose risks on others, in different ways. This has to do with the fact that there are different kinds of answers: one can react to a need, heed a call, or satisfy a demand. But all answers are replies to questions. Responsibility as answerability then has a conversational character: it is an interactive process of address and response. I take this idea from, amongst others, Emmanuel Levinas (1985), who explains moral

responsibility as answering the ‘call of the other’. In a face-to-face encounter, the other addresses a person, the other calls out to that person. By being addressed, and by responding to this call, one develops an understanding of one’s own self, as being different from, but related to, the other. Here it must explicitly be noted that for Levinas, the ethical relation between persons is utterly asymmetrical: one has an unaccountable, incremental, and infinite responsibility for others. I, however, believe responsibility is an interactive concept. I am indebted to Levinas for inspiring me to think of responsibility in terms of call and response, but will develop an understanding of responsibility that is radically different from his. My view aligns more with that of Hans-Georg Gadamer, who states that “what we truly are, what is most characteristic of our humanity is that we are dialogical or conversational beings” (Bernstein 1986: 113).

Drawing on these observations, I understand responsibility essentially as an interactive concept. To be responsible in the sense of giving an answer, one must first be asked, and listen to, a question (Turoldo 2010: 174, 178; see also Ferrari & Marin 2014: 28). I believe responsibility in situations involving risks to others is born from an interactive process of call and response, of request and consideration. To determine the acceptability of a risk imposition, an agent must then not only deliberate internally with herself, but also interactively with others. This does not mean that an agent has to literally converse with others, or that she has to be in the physical presence of others. However, she should try to envision how the actions she performs – or in which she partakes – might affect others. Subsequently, she should try to imagine how these others might address her, and how she might respond in return. It is vital for responsibility to be able to give an account of one’s decisions and actions to others: only in interactive conversation can reasons, values, facts, interpretations, and stories be critically reflected upon and evaluated.

Michael McKenna (2012) also develops a conception of responsibility based on the interpersonal process of addressing and responding. McKenna builds on Gary Watson’s (1987, 2013) idea of an ‘expressive theory of moral responsibility’ to create his own ‘conversational model of moral responsibility’ (2012). Both authors, falling back on Peter F. Strawson (1962), argue that people express certain attitudes in their practices of ascribing responsibility and holding responsible, which in turn express how they interpret or evaluate the quality of the will of others towards them. If someone

knowingly performs an action that will or can harm another person, that person might express indignation or resentment, anger or outrage, or feel hurt or disrespected. If someone acts in a way so as to please, protect, or benefit another person, that person might express thanks or gratitude, happiness or love, forgiveness or compassion.

McKenna understands the practices of holding responsible on the one hand and being responsible on the other as intimately linked, and argues that they can be seen as a conversation between the person ascribing and the person taking or refuting responsibility. He breaks down this conversation into four phases, which he clarifies with the example of Leslie telling a prejudiced joke to Daphne. Firstly, there is the Moral Contribution: Leslie makes a prejudiced joke. Secondly, there is the Moral Inquiry: Daphne inquires whether she has heard Leslie correctly. Thirdly, there is the Moral Address: Daphne morally addresses Leslie by blaming her for her action. And fourthly, there is the Moral Account: Leslie gives an account of her conduct to Daphne (McKenna 2012: 89 – 91). If Leslie gives an account in which she acknowledges her offense, offers an excuse, shows remorse, or asks for forgiveness – and Daphne accepts her apology – the conversation can be over. The conversation might also be closed at the earlier stage of the Moral Inquiry, if Leslie can convince Daphne that she misunderstood, that her joke was not prejudiced but merely sarcastic for example. The conversation continues however, if at the stage of the Moral Account, Leslie sticks to her prejudices and refutes the validity of Daphne's indignation.

8.4.2 Threefold answerability for risk impositions

The general idea of responsibility as an interactive process of addressing and responding, and in particular McKenna's conversational phases of the practice of responsibility, can illuminate the evaluation of risk impositions. This conversational process, namely, unfolds before, during, and after a risk-imposing action. How a risk-imposing agent seeks to answer to those whom she exposes to risk determines whether she has the virtue of responsibility as answerability. Subsequently, the quality of her answer determines whether the risk she imposes is acceptable.

A risk imposition is not an isolated moment in which a decision is made to impose a risk, or an action is performed that is potentially risky. In fact, a risk imposition

comprises a concatenation of decision-making moments: it is a process of deciding, acting, and responding. Consider the decision of the South African government to implement water restrictions. These restrictions are implemented to ensure reliable water supply to its citizens and protect the country against the worst effects of the ongoing drought. However, the Water Research Commission warns that prolonged water restrictions can negatively affect the sewage system: if the amount of organic waste stays the same, but the amount of water decreases, the lack of water can lead to accumulations of waste and blockages in the system (Moolman 2016). Water restrictions are then not without risks, and the acceptability of their implementation and enforcement must be assessed continuously. Also, if these foreseen risks, or other unforeseen risks, materialise, a response can be expected from the government. For example, it has to temporarily relax the restrictions, initiate the restoration of the sewage system, or compensate those affected by water contamination.

The evaluation of decisions and actions that involve risk to others can then not be limited to an isolated moment. Risk impositions generally comprise three moments of evaluation: before (a decision to impose a risk), during (a risk-imposing action), and after (a response to and management of the arising situation). To continue with the example, first there is the decision to restrict water usage, followed by the implementation of restrictions, and then the response to consequences of these restrictions. The acceptability of any risk imposition then depends on whether the risk-imposing agent is responsible, in the sense of being responsive, throughout the process. The agent should strive to be answerable for making the decision to impose a risk, during the risk imposition itself, and with regard to its consequences.

I believe these moments of evaluation can roughly be matched with three types of answerability: this then is a threefold concept. Firstly, there is answerability as reasoning, which entails providing convincing reasons for, and explaining, one's actions to others. This type of answerability is mostly relevant before and during a risk imposition, i.e. when the decision is made to impose a risk, and the risk is imposed. Secondly, there is practical answerability, which entails responding adequately to the concrete situation arising once a risk has been imposed, and managing the practical consequences of that action. This type of answerability is mostly relevant during, and after, a risk is imposed. And thirdly, there is attitudinal answerability, which entails having appropriate attitudes

with regard to others. This type of answerability is important throughout the process: from the moment in which the decision is made to impose a risk, to its aftermath. The virtue of answerability then consists of a combination of abilities and dispositions that enables one to make morally justifiable decisions the face of an uncertain future.

Responsible reasons for acting

The first type of answerability, answerability as reason-giving (AR), entails the ability to adequately answer the question ‘why do you *X*’, in which *X* stands for a choice, action, or omission that involves risks to others. I understand McKenna’s four conversational phases of responsibility – contribution, inquiry, address, and account – to make up the process of asking ‘why do you *X*?’ and responding to that question. Being able to provide reasons for a risk imposition requires an agent to:

- (1) think through the possible consequences of her actions – as far as can reasonably be expected, taking into account her socio-economic position, mental abilities, and time (AR1);
- (2) account for, defend, or explain her reasons for acting (AR2);
- (3) discern between right and wrong reasons for acting (AR3);
- (4) be motivated by right reasons (AR4);
- (5) keep a critical and open mind, and adjust her reasons, and the actions based on them, in the light of new information or convincing counterarguments (AR5), and/or;
- (6) extend sound trust when she depends on others for information about the possible consequences of her actions, or appropriately use other decision-making strategies (AR6).

Responsible management

As stated earlier, risk impositions cannot be evaluated in isolation but have to be assessed continuously. The second type of answerability, practical answerability (PA), is mostly relevant after the decision has been taken and a risk is imposed. It entails all the ways in which possible harm to others can be managed, controlled, mitigated, reduced, minimised, or avoided. Necessary for this type of answerability is the capacity to respond effectively and appropriately to a situation that involves possible harm to

others. It comprises adequate management of concrete situations and requires a risk-imposing agent to:

- (7) inform, and obtain consent from, risk-bearers where possible, required, or appropriate (PA1);
- (8) put safety measures in place (PA2) and/or;
- (9) act with caution (PA3);

If a risk imposition has resulted in unqualified harm – foreseen or unforeseen, intended or unintended – the risk-imposing agent can be expected to manage and ameliorate that harm in some way. She is then required to:

- (10) act so as to avoid, minimise, or at least reduce further risk or harm (PA4) and/or;
- (11) aim to provide compensation or restitution (PA5).

Responsible attitudes

The third type of answerability, attitudinal answerability (AA), entails having appropriate attitudes, feelings, and emotions with regard to the possibility of harm and harm itself, that express a good quality of one's will towards others. People do, and should, care about the extent to which their actions show respect, regard, or concern for others. Vice versa, it matters just as much “whether the actions of other people – and particularly *some* other people – reflect attitudes towards us of good will, affection, or esteem on the one hand or contempt, indifference, or malevolence on the other” (Strawson 1962: 5, original italics). When exposing others to risk, one should then acknowledge that others might suffer harm, and that this must not be done without qualification. Irrespective of whether harm results, and even if a risk is imposed for the right reasons and with honourable intentions, the risk-imposing agent needs to:

- (12) be able to evaluate harm as something mostly negative, something she wants to avoid, manage, or at least justify (AA1);
- (13) be motivated not to act in ways that do, or could, harm others without qualification (AA2), and;
- (14) act out of care and respect for the integrity, wellbeing, and safety of others, and empathy with their fate (AA3).

Now if harm does result, or if the risk was imposed because of flawed reasons, or motivated by wrong attitudes or emotions, it might be expected from the risk-imposing agent that she:

- (15) experiences some form of regret, remorse, shame, guilt, and embarrassment (AA4);
- (16) accepts some degree of (self-)blame (AA5), and/or;
- (17) offers an honest apology (AA6).

Creation and management of risk

These different forms of answerability for risk impositions tie in with the distinction made in Chapter 1 between risk creation and risk management. There I argued that the presence of human choice is what defines risk as risk, and not as danger. One can speak of risk if there is an element of choice in the creation or occurrence of possible harm, or in the management or control of possible harm. This means then, that answerability can be ascribed for man-made risks, but also for natural risks if people have possibilities to, for example, avert, minimise, or redistribute them. Risk creation requires that one is able to give reasons for one's actions and adequately answer the question 'why do you X?': why do you act in a way that carries the possibility of harm to others? Risk management comprises a fitting practical response to a situation in which others are exposed to potential harm, and that falls under one's sphere of influence or authority. This means that sometimes an agent can be reasonably expected to manage risks or resulting harms even if that agent (1) did not know he caused or contributed to the (potential) harm, or had no other option but to act the way he did; or (2) did not cause or contribute to (potential) harm in the first place. In risk creation as well as risk management an agent can be required to have an appropriate attitude to exposing others to the possibility of harm: attitudinal answerability is vital in both cases.

Consider a defect in a drilling rig, causing an oil spill into the ocean. The company owning the rig is the creator of the risk of an oil spill, or at least its main contributor, for by operating the rig the company enables, or increases, the possibility of a manmade oil leak. The company can then legitimately be asked to provide reasons for their actions, i.e. be reasonably answerable, and to account for what happened: was the site properly maintained, was the drilling authorised, were the workers adhering to safety

regulations? Even if the oil spill had a natural cause, and is for example the result of a storm that damaged the rig, the company still carries a responsibility to manage the consequences. They should try to stop the spill as soon as possible, clean the ocean, and compensate potential victims.

This practical responsibility is partly shared by local governments and citizens, who can be expected to initiate or help out with cleaning projects. They have these responsibilities irrespective of how one understands their role with regard to drilling for oil and the risk of an oil spill. One might consider them contributors to this risk as customers of the oil industry. It might be a step too far to consider individuals answerable as risk creators, and demand from them that they justify why they buy oil products, such as gasoline, kerosene, and electricity. Within the context of an industrialised, modern lifestyle, it is very difficult, if not impossible, not to buy any products produced by this industry.⁴⁹ It might make more sense to consider governments answerable as risk creators, as they are in a better position to facilitate a reduction in the overall consumption of oil products. They could for example invest in safe and efficient public transport and sustainable energy grids, making it easier for citizens to reduce their impact on the environment. But regardless of whether citizens and governments are answerable as risk creators, they are answerable as risk managers. For whether or not they have choice when it comes to contributing to (potential) environmental damage – in this case an oil spill – they carry some responsibility when it comes to compensating for, reducing, or minimising that damage – for example by getting involved in cleaning projects. Even if a modern lifestyle leaves one no other option but to make unsustainable choices, one has a responsibility to adequately, or to the best of one's abilities, manage the consequences of those choices.⁵⁰

All those involved in, and affected by, the oil spill, are motivated to do their part if they have appropriate attitudes towards others and their environment. They can be expected to care, at least to some extent, about the safety, wellbeing, and flourishing of others, and to care, again to some extent, about environmental health, cleanliness, and sustainability. The representatives of the drilling company can then be attitudinally

⁴⁹ More than 6000, mostly commonly used, products are made from petroleum or its waste products: plastics, fertilisers, nylon, cosmetics, and drugs are just a few examples (Hyne 2014: 378).

⁵⁰ Other examples of this practical responsibility are paying an extra fee that goes to planting trees when one buys an airplane ticket, or emission taxes.

answerable by showing honest regret over the disaster and offering apologies to those affected. Others can also play a role in attitudinal answerability by holding the right people accountable, and as such sounding the call to which the company and other risk creators must respond. This might be the responsibility of victims of the oil spill, such as local fishermen, but also of others who give a voice to the vulnerable or suffering, such as environmental activist groups and international aid organisations. Responsibility is then often shared between different agents.

8.5 *Why did you x? Giving reasons for acting*

The first type of answerability is to give reasons for acting, or to be in a position in which one can rightly be asked to give one's reasons for acting. Understanding responsibility as answerability, and in turn understanding answerability in terms of providing reasons for acting, is not a new philosophical insight. I take the notion of answerability from the article *Reflection and Responsibility* by Pamela Hieronymi (2014), who takes it roughly from the work *Intention* by Elizabeth Anscombe (1957). Anscombe elaborates on intentional action, and argues that if one has an intention when performing an action, one can rightly be asked why one acts the way one does. One can then, in Anscombe's terms, be asked: 'Why are you φ -ing?' (in which φ stands for an intentional action). The answer one gives to this question comprises one's reason for acting: 'why do you drive a car?' – 'because I want to be mobile'. Hieronymi (2014) develops this idea of giving reasons for acting in terms of responsibility, and focuses on the question as to when one can be rightly asked to provide those reasons. She argues that to be in a position or state in which one can rightly be asked for one's reasons for acting, is to be responsible in the most fundamental sense, namely, to be answerable. Hieronymi (2014: 9, original italics) writes: "[...] a why-question is, in Anscombe's terms, *given application* whenever one acts intentionally. Drawing on her insight, I will say that one is *answerable* for one's intentional actions, where one is answerable just in case a request for one's reasons is given application".

8.5.1 *Intentional risk impositions*

Hieronymi (*ibid.*: 4) notes that "We are [...] responsible for our intentional actions, if we are responsible for anything. [...] Intentional action [...] seems to involve [...] a certain sort of "having in mind." [...] we act intentionally by first deciding what to do

and then doing what we decided”. Intentional actions are then mostly paradigm cases of actions for which one is, and can be held, responsible. In the context of risk impositions, an agent is most obviously responsible for those risks he imposes intentionally. To intentionally impose a risk is to foresee the possibility of harm and willingly and knowingly expose others to that possibility. As discussed, this is not wrong per se, for if it were, no human action would be permissible. However, others should not be exposed to risk without qualification. There has to be a reason, a justification, for doing so: the risk might be unlikely, negligible, beneficial, consented to, etc.

One is morally required to be able to give reasons for imposing risks on others, just as one is morally required in general to be able to provide reasons for one’s actions that affect others. As Strawson argued in his work *Freedom and Resentment* (1962), the whole process of acting, i.e. the development of intentions and reasons into decisions and actual conduct, expresses something about a person: it is an indication of the quality of his or her will, specifically as it concerns others. A bad, indifferent, or good will towards others, expressed in one’s actions, is something others can question, judge, praise, or blame, and for which one is ultimately responsible. This ties in with Angela Smith’s claim that one’s actions convey an implicit prioritisation of values and assessment of reasons for acting. In principle, one can always be called upon to defend one’s actions “with reasons and to acknowledge fault if an adequate defense [*sic*] cannot be provided” (2008: 370). Anton van Niekerk and Nico Nortjé (2013: 28) develop a similar argument, stating that responsibility entails that one is “accountable for whatever decisions are taken, on the basis of the assumption that reasons can be provided, that they have been thought through, and even though they might be fallible”. I take these statements as supporting my claim that responsibility, or answerability, for risk impositions requires one to think about what harm others might suffer as a result of one’s actions, and to justify exposing others to that harm by providing reasons.

Looking ahead and looking back

To grasp how this might be done, let us take a look at Hansson’s (2013) Foresight Argument. The argument refers to the attempt to “think through beforehand how we will, in the future, view the decisions we make now. [...] to see things the way we will see them at some later point in time” (*ibid.*: 61, 63). This captures a common-sense

understanding of what it means to be responsible. Children are taught that in order to become responsible adults, they must think before they act. ‘Tomorrow you will regret eating all the chocolate!’ ‘Look both ways before crossing the road!’ As such they learn that one should not act on a whim but carefully consider how one’s actions influence the future. Moreover, they learn that one can always be asked to defend one’s actions, especially when these affect others. ‘Why did you not share the ice cream with your brother?’ ‘Why were you late and why did you make everybody wait?’ Building on this natural learning curve of responsibility, Hansson develops a way to make prudent decisions with regard to the future. He proposes to take a future vantage point of ‘hypothetical retrospection’, from which one can look back at, and evaluate, the decision leading up to that vantage point. Hypothetical retrospection entails thinking through the possible futures that might result from an action, setting a comparable reference point on each of these ‘alternative ‘branches’ of future development’, and then assessing and comparing the options (*ibid.*: 61 – 73). To crudely rephrase this: one should try to foresee how one will look back. By consciously contemplating future outcomes of one’s actions in the present, one becomes more insightful about making prudent decisions (*ibid.*: 62).

By combining forward-looking and backward-looking techniques of judgement, Hansson’s Foresight Argument can adequately explain how people tend to make decisions under uncertainty, and what risks they are willing to take and expose themselves to. However, the argument fails to make adequately explicit an aspect crucial to the evaluation of risk impositions: namely, that such actions involve, and potentially affect, other people. The presence of others – be it actual or possible – demands from a risk-imposing agent that he provides reasons for his actions to those others. Hansson’s hypothetical retrospection is an internal process of deliberation within a risk-taking agent. I propose to extend the deliberation to accommodate all those involved, and see it as a process of addressing and responding, i.e. demanding and providing reasons for risk impositions.

Moral imagination

Answerability as reason-giving requires one to think through the possible consequences of one’s actions (AR1), and to account for, defend, or explain one’s reasons for acting

to others (AR2). But what does it mean to ‘think through’ possible consequences? What does it mean to ‘foresee’ how one will look back and account for one’s present action? I believe thinking through and foreseeing can be understood in terms of envisioning, conceiving, or imagining the possible results of one’s actions, and exploring the ways in which others might be affected. It is on the basis of these consequences that others can address one in the future, and which one should be able to explain, justify, and defend with reasons. These reasons do not always have to be rational or conscious, and are fallible: I will return to these statements in later sections. However, when exposing others to risk, an agent is required to at least give attention to possible future outcomes. I then agree with Nihlén Fahlquist (2015: 192) that moral imagination is vital for responsibility as a virtue: it is “the emotional ability to morally imagine what [the] effects could be like and what risks might be involved in [the] activities”. I believe it should be stated explicitly that a prudent person can imagine not only what the effects of his actions could be, but also how others could experience them. I build on Gadamer’s (2013: 332 – 333) claim that a “person who is understanding does not know and judge as one who stands apart and unaffected but rather he thinks along with the other from the perspective of a specific bond of belonging, as if he too were affected”. A person who makes virtuous and responsible decisions when it comes to exposing others to risk has the future-oriented ability to imagine a) what consequences might result from his actions; b) how others might experience these consequences; and c) how he and others will later view his present actions; and is on the basis of this imagination able to provide reasons for his actions to others.

One is, and has to be, answerable for those risks one foresees and imposes intentionally. One is also answerable for risks one should have foreseen, but did not. But what about risks one could not have foreseen? Throughout this research I have questioned the possibility to foresee what will happen in the future, and I acknowledge that it is not always feasible to provide adequate reasons for acting based on one’s predictions. However, this does not mean that one is never, or can never be held, responsible for outcomes that one could not foresee. In later sections I expand the notion of virtuous answerability beyond giving reasons for acting to incorporate attitudinal and practical answerability. These types of answerability enable one to have appropriate attitudes to unforeseeable harm, and, where possible, adequately manage such harm.

8.5.1 *Reasons for acting*

Reasons for acting are, according to Hieronymi (2014), not necessarily mental states, such as desires and beliefs, that logically explain why one acted the way one did. Nor are they objective facts that justify the action. Reasons are “those considerations (that is, those facts or purported facts) that the agent took to count in favor [*sic*] of acting, the so taking of which (in part) explains the action” (*ibid.*: 12). However, what an agent considers to count in favour of acting the way she does – as adequate answers to the question why she acted so-and-so, as reasons that sufficiently explain her actions – might not be good reasons. If one is to be considered answerable for imposing a risk, surely one has to provide good reasons for the imposition: recall that answerability as reason-giving entails the ability to discern between right and wrong reasons for acting (AR3), and to be motivated by the right reasons (AR4). Athanassoulis and Ross (2010: 220) state that the acceptability of risk impositions depends on their reasonableness: “Choices are made for reasons and virtuous choices are those that are made for good reasons”. However, the authors do not further explicate what qualifies as a good reason to expose others to risk.

The branches of ethical theories discussed in the previous chapters draw attention to, or focus on, a variety of reasons that can make it acceptable to impose risks. In other words, there are various ethical considerations that can influence the acceptability of risk impositions. In some cases, it matters how likely or severe the risk is, whether the risk is imposed to achieve some benefit, or how many people stand to gain or are exposed to harm. In other cases, it matters how the benefits and harms are distributed, or who is involved in the decision to impose a risk. And yet in other cases, it matters whether consent has been given to the risk exposure, or whether it is possible to compensate a risked harm. Different considerations are important under different circumstances and to varying degrees. A convincing ethical approach to the acceptability of risk impositions then needs to accommodate all these considerations into a holistic perspective, balancing consequentialist rules with non-consequentialist principles. As such, the approach acknowledges that risks cannot be altogether prohibited or altogether permitted, but that certain risks are unacceptable. In the words of Stephen Perry (2001: 78): “consequential justification must take place within permissible deontological bounds”.

In his notion of *phronēsis*, Aristotle seems to unify consequentialist and deontological reasoning *avant la lettre*. Practical wisdom requires consequentialist reasoning about actions and their possible outcomes, as it involves distinguishing good or desired from bad or undesired outcomes, and realising or avoiding those. It also requires deontological reasoning about what kind of things are good, not only for the deliberating individual but for people in general. As Aristotle (2011: 120 – 121 [1140b5]) notes, prudent persons “are able to observe the good things for themselves and those for human beings”. This indicates taking others into account and acting so as to respect and aid their flourishing. I argue that a virtue-ethical understanding of responsibility, as the virtue of answerability and with the notion of *phronēsis* at its core, allows consequentialist reasoning to be circumscribed by deontological reasoning, and consequently can accommodate the various ethical considerations that can influence the acceptability of risk impositions.

As discussed, reasons for risk impositions are formulated in response to the question ‘why do you *X*?’ A responsible agent continuously considers whether he can answer this question: before, but also while and after, imposing a risk. Good answers, and therefore good reasons to impose risks, can refer to different ethical standpoints and considerations. A good reason to expose others to risk, for example the risk associated with letting one’s children take the bus to school, might be that harm is unlikely, the benefits are great, and accrue to the risk-exposed, i.e. the children – primarily a consequentialist reason. A good reason to impose another risk, for example the risk associated with a medical procedure, might be that the person who carries the risk consents to the exposure – primarily a deontological reason. The normative perspectives discussed in Chapter 3 to 6, and the main considerations they draw attention to, require agents to ask themselves several questions with regard to the risks they impose on others, and as such they offer the basis for reasons that might explain or justify risk impositions. In the table below one finds an overview.

Ethical perspective	Consideration	Question
Utilitarianism	Severity of negative effects (harms)	How bad can the outcome(s) be? What can be lost?
Utilitarianism	Extent of positive effects (benefits)	How good can the outcome(s) be? What can be gained?
Utilitarianism	Likelihood (or probability) of harms	How likely is/are the bad outcome(s)? How likely is the loss?
Utilitarianism	Likelihood (or probability) of benefits	How likely is/are the good outcome(s)? How likely is the gain?
Deontology	Recognition of duty not to harm without qualification	If the bad outcome occurs, will a duty be left unfulfilled?
Deontology	Recognition of duty not to impose unreasonable risk	If the bad outcome does not occur (and/or the good outcome does occur), will a duty be left unfulfilled?
Rights theory	Respect for right not to be harmed without qualification	If the bad outcome occurs, will a right be violated?
Rights theory	Respect for right not to be exposed to unreasonable risk	If the bad outcome does not occur (and/or the good outcome does occur), will a right be violated?
Rights theory	Possibility and availability of compensation or restitution for risk or harm	Is there adequate compensation possible and available to the person exposed to risk/suffering harm?
Contractualism	Distribution of harms	Who will be affected by the bad outcome(s)? Who will lose? And is this the same agent as the beneficiary and/or the one making the decision?
Contractualism	Distribution of benefits	Who will be affected by the good outcome(s)? Who will gain? And is this the same agent as the one harmed and/or making the decision?
Contractualism	Availability of alternatives	Are there alternative courses of action that have the same possible benefits but fewer risks?

Table 4: Overview of ethical perspectives, considerations, and questions relevant for the evaluation of risk impositions.

If one does not know with certainty which consequences will materialise from one's actions, one needs to oscillate between the things one does know at the time of decision-making and an uncertain future. I understand *phronēsis* with regard to risk impositions as a movement between judging concrete situations in the present and foreseeing the consequences that might result in the future. This entails the ability to know which ethical principles are important in particular situations involving risk to others, and how these principles should be interpreted. Subsequently, it is the ability to ask the appropriate questions, and to evaluate whether the answers to those questions are good reasons, i.e. reasons that justify the risk exposure. However, as will be discussed in the following paragraph, determining the nature, and justifying force, of reasons, i.e. determining whether a reason does or does not render a risk imposition acceptable, is not something one does in isolation: it is a communal endeavour.

Situated answerability

Answerability as reason-giving might entail the ability to identify what the right reasons are to impose risks on others, and to be motivated by such reasons, but it is important to note that I do not believe any one person is always able to do this. I then do not fully endorse the Aristotelian ideal of the *phronimos*, the prudent person, or the wise (wo)man. Athanassoulis and Ross (2010: 218, original italics) do endorse this ideal: they claim that “reasonable risks will turn out to be the sorts of risks that a virtuous person would take and responsibility for risk will be determinable by reference to what a virtuous person would have chosen and why, i.e. in accordance with the *orthos logos*”. In general, the authors rely heavily on Aristotelian ethics, which can be read as describing the ideal person who is simply virtuous: someone who is not only a competent decision-maker in a certain role – as a parent, friend, entrepreneur, or politician for example – but with regard to every aspect of life. As Kristen Inglis (2014: 266 – 267) writes:

According to what has become known as the “Grand End” reading of *phronēsis*, the *phronimos* deliberates with a view to an articulate and reasoned vision of the good (a “Grand End”). In the case of the *phronimos*, this Grand End will be the picture of the human good [...] whereby happiness is the active life of complete virtue. [...] the

important point for Grand Enders is this: the *phronimos* [...] deliberates with a view to a substantive, comprehensive, and articulate picture of happiness [...] [and] aims at a life of virtuous activity.

I believe however, that this ultimate Grand End of universal happiness is too abstract a goal to provide guidance in practical decision-making situations. Moreover, the ideal of the *phronimos* is too far removed from reality. In real life – and especially under conditions of uncertainty and complexity – it seems impossible to have so much foresight and practical knowledge that one is able to make wise, good, and right decisions at all times and in all circumstances. Through upbringing and education, people can acquire good dispositions such as being fair or honest; and through training and experience, they can become competent decision-makers in certain areas, such as politics or business. They might then be able to make prudent decisions in some area(s), and perhaps even most of the time. But people are not simply good without qualification (Brännmark & Sahlin 2010).

In the context of risk then, someone might be able to make responsible choices involving risks to others in one domain, but fail to be answerable in another. A risk imposition is acceptable or justifiable not because the risk-imposing agent is virtuous all-round, but because she can answer for her actions within the specific context in which she operates. Answerability is then always situated. This ties in to Garrath Williams' (2008) argument that plurality is central to responsibility. He argues that situations in which one cares about responsibility are defined by plurality: there are different normative demands, conflicting interpretations of those demands, various roles and relationships and the opposing demands posed by those, and the imperfect contexts of real life in which these conflicts occur (*ibid.*: 460 – 461). Responsibility entails the ability to skilfully negotiate between these oppositions, and “represents the readiness to respond to a plurality of normative demands” (*ibid.*: 459). Because the demands placed on agents are often so multifarious, I think it is virtually impossible to be responsible in every aspect of life. Or to be “a man for all seasons”, as Johan Brännmark and Nils-Eric Sahlin (2010: 156; also see [Whittinton 1520 in] Bolt 2013) remark in reference to a description of the Renaissance humanist Thomas More. Another part of that description reads: “I know not his fellow” ([Whittinton 1520 in] Bolt 2013). This indicates that the author of the description realises that it is an unattainable ideal for most people.

Most agents are not the likes of More; not *phronimē* across the board. They often experience the realities in which they are situated as complex, their relationships as intricate, and the different normative demands they must respond to as conflicting. Moreover, and this is important for responsibility in the face of uncertainty, adequately responding to multiple demands is complicated by the fact that knowledge about eventual consequences of actions is always limited. Actions and their consequences feed into many different aspects of many different lives and cause-and-effect relations are often far more complicated than one can comprehend individually. G. Williams (2008: 461) therefore argues that “which of these claims or interpretations should really guide thought and action—this is something the responsible agent must negotiate with those around her”. Only by reaching out to, and engaging with, others can an agent enlarge her understanding of factual information, and the rich background of beliefs and values against which that information is interpreted. In, and through, conversation people have to arrive at an understanding of the demands they are entitled to make on others, and vice versa. Therefore, understanding answerability conversationally – as an on-going process of address and response – is vital for responsible conduct in life’s inherently uncertain context.

What, exactly, are then considered adequate answers to the questions in Table 4, and therefore good reasons for imposing risks, depends on the situation under scrutiny, and the people scrutinising that situation. Different persons will attach different weight to different ethical considerations in different situations. One cannot determine what is the responsible thing to do in a concrete situation by adhering to an abstract ideal of the *phronimos*, asking oneself what a virtuous person would decide in pursuit of the “Grand End [of] substantive, comprehensive, and articulate [...] happiness” (Inglis 2014: 267). This does not mean that anything goes, that morality is only relative, and that the person with the strongest voice or the most power can overrule the demands of others. It means that an adequate answer can only be formed through a conversational process in which each participant has a voice and is heard. Actual or imagined participants to this conversation must acknowledge their differences and subsequently engage in explaining and justifying their standpoints to one another. Those involved in risk impositions – decision-makers, executors, those benefitting from risk impositions, and those negatively affected by them – have to form, despite their differences, an understanding

of what is acceptable. This understanding needs to be (re)defined and (re)negotiated in every situation involving risk to others: it is a dynamic and open-ended conversation. The requirements for such a conversation resemble those for a hermeneutic dialogue as described by Gadamer (Bernstein 1986: 113): “the mutuality, the respect [...], the genuine seeking to understand what the other is saying, the openness to test and evaluate our own opinions through such an encounter”.

To give substance to these claims, let us consider the distribution of possible harms and benefits, and the weight given to this consideration in different situations involving different stakeholders. In some cases, this has to be an equal distribution in order to qualify as fair, in other cases an unequal distribution can be acceptable. Consider the construction of a factory near a settlement, and the risks of inhaling polluted air imposed on the inhabitants of that settlement. On face value this is probably an unjustifiable distribution and an unacceptable risk imposition. But this can change if the inhabitants are offered the opportunity to participate in the decision-making process, alternative housing, sponsored health care, or a share in the profits. However, seeking consent or adding benefits to the equation do not immediately make the scales of the distribution tip from unfair to fair. The inhabitants can have reasons to reject these offers: perhaps their community regards the site as sacred ground, and they cannot move away or accept any form of construction. Obviously, their claims to the site would have to be validated, and the question of ownership discussed, which can be an extremely difficult and sensitive issue in its own right. But what the example indicates is that the decision to construct the factory can only be considered justifiable, and its associated risks responsibly imposed, if the stakeholders engage in a conversation characterised by mutual respect.

Now consider a different case, in which an unequal distribution of possible harms and benefits can more straightforwardly qualify as justifiable. A physician practicing in a remote village only has enough medicine to treat a part of the local population against a certain disease common in the area. He decides to treat some but not others, basing his decision on age, general level of health, and future survival prospects. His decision distributes possible harms and benefits in an unequal fashion, as some enjoy the benefits of the medicine while others remain exposed to risks of disease. However, the unavailability of alternatives, i.e. the scarcity of medication, renders such a distribution

fair, or at least justifiable. Moreover, an important difference between this and the previous case is that the physician does not increase the level of risk exposure of untreated patients, whereas the management of the factory creates the risk to which local residents are exposed. The management then has to answer for the creation, and subsequently the management, of risk, whereas the former only has to answer for the way in which he manages an existing risk.

These examples indicate that there is not one standard acceptable distribution of harms and benefits, and not one interpretation of responsible conduct. Answerability for risk impositions is a matter of deliberation and conversation between the risk-imposing agent and others. I then partly disagree with G. Williams (2008: 462; see also Fingarette 1967), who states that to be responsible is to accept the demands one faces; it is not something others can command or instruct. I on the contrary argue that one is only responsible in response to others, and that responsibility is born, and developed, in the process of address and answer between agent and others. I meet with G. Williams (2008: 469) again on the point that “Responsibility reveals [...] our moral interdependence”.

The limits of knowledge and fallibility of reasons

Recall that answerability as reason-giving entails the ability to think through the possible consequences of one’s actions (AR1). However, the extent of this type of answerability is delimited by a couple of conditions: 1) causality; 2) freedom or control; and 3) knowledge or awareness. These conditions are also found in traditional accounts of responsibility, which argue that an agent can only be considered responsible if she a) has caused something to happen; b) had control over her action and could have acted otherwise; and c) was aware that she acted and that her action could have certain outcomes (Lippert-Rasmussen 2005). However, I argue that even though these conditions restrict answerability to a certain extent, answerability is not necessarily eliminated in cases where they are not met. With regard to the causality-condition and the freedom-condition, I have already noted – recall the example of the drilling rig and the oil spill – that even if an agent did not cause, or contribute to, a risk or harm, or had no alternative to act otherwise, she sometimes can still be reasonably expected to have appropriate attitudes to the results of a risk imposition, and manage those results

according to her capabilities. With regard to the knowledge-condition, answerability as providing reasons for acting is restricted by what one knows at the time of decision-making. The more one knows the better one is equipped to answer the questions in Table 4: “Inquiry and knowledge can be used to reduce uncertainty and to aid decisions in the face of uncertainty” (Ingle 1968: 333).

But what if one has little to no information about, or is partly or completely unable to foresee, the way in which one’s actions will unfold? Knowledge about the future is always limited, and there is always some degree of uncertainty about future effects of present actions. Moreover, the complexity and interconnectedness of modern contexts seem to increase the uncertainty surrounding future developments. Consider Martin, a father who serves his children a healthy diet according to present nutritional standards. However, ideas about healthy food change continuously and he might be exposing his children to unforeseen and unintended health risks. For example, processed foods have for a long time been regarded as healthy, or at least not particularly unhealthy. But in recent years, consumer awareness has grown with regard to the high sugar content of processed foods and its alleged relation to obesity, diabetes, and depression. The fact that ideas about nutrition and health change continuously, significantly reduce consumers’ ability to give reasons for their food choices that remain acceptable over time. To what extent can the head of an average household, like Martin, then be considered responsible?

However, the fact that reasons can at a future point in time turn out to be wrong does not mean that they are unacceptable in hindsight. Agents have to act based on what they know and understand at the time of decision-making, and they can always be asked ‘why do you X?’ The possibility of this future address should incentivise them to think through their reasons for acting, notwithstanding that those reasons might turn out to be no longer justifiable when new information becomes available. Uncertainty means that one’s reasons for acting are inherently fallible. Van Niekerk and Nortjé (2013: 29) write that the ethics of responsibility (ER):

[...] is an ethics of fallibility. At some point, we must make a decision in order to move forward, but that decision can be wrong and can have dire consequences. Yet, not taking the decision or preventing some action can

have equally disastrous consequences. We have to accept responsibility for whatever we decide, but certainty cannot be demanded of us. [...] Thus, when engaging in an ER, we have no assurance of correct moral behaviour, but we do have assurance of responsible moral behaviour. The latter is mostly what can realistically be expected from moral agents.

To return to Martin, he can either think through the consequences of his food choices to the best of his abilities, or he cannot. It is more likely that Martin imposes health risks on his children if he has no clue what he is serving them. So surely it is better to make informed decisions, even if that information later proves to be invalid. One should at least be able to provide reasons for one's choices that were valid at the moment of decision-making: the fact that those reasons can turn out to be wrong does not reduce the degree of responsibility with which they were formed. Because reasons are inherently fallible, a requirement for answerability as reason-giving is that a risk-imposing agent adjusts his reasons, and the actions based on them, in the light of new information or convincing counterarguments (AR5). Another requirement is that the agent thinks through the possible consequences of his actions as far as can reasonably be expected, taking into account his socio-economic position, mental abilities, and time (AR1). In Martin's case, this means that he has to think about reasons for making certain food choices, but that the extent to which he is required to do so depends on his personal situation. If Martin is well off and educated, the extent to which he must answer for his food choices is probably higher than if he is battling to make ends meet and cannot read.

Non-rational reasons

Van Niekerk and Nortjé (*ibid.*) also state that: "What can be demanded [...] is the full catalogue of our reasons and the arguments supporting them". However, I want to caution against an overly rationalistic interpretation of envisioning possible outcomes and providing reasons for acting. People do not consciously and thoroughly think through the possible outcomes of all their actions. Moreover, it is not always useful or desirable to demand an exhaustive deliberation, or a 'full catalogue of reasons and arguments'. If this were a necessary requirement for decision-making, it would be quite impossible to make many kinds of decisions.

Actions that are performed unconsciously, or at least not fully consciously, should not be straightforwardly equated to irrational actions. Human beings, namely, have developed ways to make decisions in a reflex-like manner, based on decision-making strategies that are neither fully rational nor irrational. Zinn (2008: 439, original italics) states there are “*in between* strategies [...] to make decisions”. Such strategies are for example emotions, intuition, and trust. They are neither consciously deliberated, nor irrationally assumed, and enable people “to respond rapidly and effectively to complex situation [*sic*] without conscious deliberation” (*ibid.*: 444). By using these strategies in an effective way, people unconsciously formulate expectations about the future and engage with those expectations in order to realise a desired outcome. As modes of unconscious, non-rational judgement they are shortcuts to make prudent decisions.

Take an emotion such as fear. Experiencing fear can be ungrounded and irrational, but it should not be done away with immediately. It is, namely, a congenital physiological experience in the human brain and body that can be conducive to protecting life and wellbeing from danger: it makes one run out of burning buildings and away from hissing snakes. Intuitions can also be helpful in decision-making, especially if they are developed through experiences. Zinn refers to a study of nurses at an intensive care unit for prematurely born babies (see Crandall & Getchell-Reiter 1993). These nurses often make decisions intuitively, for example to start antibiotics on a neonate before it shows symptoms of sickness. They have internalised judgements based on experience, and have become receptive to recognising patterns and deviations. As such they have developed “an intuitive grasp of situations and the necessary responses” (Zinn 2008: 444). Intuitions can then facilitate responsible decision-making in the face of an uncertain future.

In Chapter 2 the importance of active or sound trust was already discussed, but now it can be understood in more depth. Let us return to Martin and his food choices. Food bought in supermarkets and consumed by many modern families is often treated with chemical preservatives in order to be transported over long distances and remain edible until it reaches the dinner table. Information about the origin and quality of food is not always easily accessible, and furthermore not easily understandable for most laymen. The obscurity and complexity of information makes it difficult for most consumers to

think through the consequences of their food choices. Can Martin be reasonably expected to consult scientific research and understand the intricate workings of the food industry? Probably not, but this does not negate the necessity to make choices: Martin's family needs to eat. He can however let his choices be guided by his trust in others: for example, the government can give recommendations based on independent nutritional research. Carefully placed trust can then enable him make responsible food choices.

It is necessary to make decisions despite limited knowledge, but it is just as necessary to trust others in order to make choices for which one can be answerable. People's finite mental capacities and time often make it impossible for them to sufficiently think through the consequences of their actions on their own. People have to reach out to, and trust in, others to get a better understanding of the world around them, and to learn how their actions might influence the lives of others. Vice versa, others are obliged to engage in conversation with those that reach out to them, to share what they believe and know. Only in conversation with others can one make sense of answerability and acceptability in a given context: these concepts are fundamentally shared and interactive.

Recall that a requirement for answerability as reason-giving is that an agent extends sound trust when she depends on others for information about the possible consequences of her actions, or appropriately uses other decision-making strategies (AR6). Actions incentivised by fitting emotions, experience-based intuition, or sound trust are deliberated in a way, even if deliberation is not performed rationally or consciously. If such actions involve risk to others, as in the example of a nurse administering antibiotics to a prematurely born baby or a father feeding its child, these risk impositions might well be justified. The in-between strategies can then provide non-rational reasons for acting. Naturally, non-rational reasons can turn out to be misguided. But again, the fallibility of reasons does not immediately negate the acceptability of risk impositions based on such reasons. Fallibility is just another reason why the content of acceptability and answerability needs to be continuously reassessed and renegotiated. Also, the notion of *phronēsis* can accommodate in-between decision-making strategies as ways to arrive at prudent choices. Instead of having to always consciously interpret moral rules in concrete situations, one can use in-between strategies as shortcuts that enable a swift, smooth, and efficient oscillation between the universal and the particular.

8.5.3 *Conversational stages of responsibility*

I stated earlier that I interpret McKenna's four conversational phases of responsibility as stages in the process of asking and responding to the question: 'why do you *X*?' I also argued that the ethical considerations discussed in earlier chapters can provide the basis for answers to that question, and thus for good reasons for acting. In the following sections I will elaborate on these statements by running through the stages of the address-and-response process, namely, contributing to, inquiring after, addressing, and accounting for a risk imposition.

The contribution

For a risk imposition to be evaluated, an action that exposes others to risk must first be considered or performed: this is the contribution that sparks the conversation of responsibility. Preferably, the risk imposition is considered before it is performed, and the process of addressing and responding is run through, perhaps in an imaginary fashion. The risk-imposing agent engages in a conversation with those exposed to risk about the acceptability of the action that he performs, or is planning to perform at a later point in time. Before one goes on to judge the contribution, one should make an "inquiry as to whether the facts are as we take them to be" (McKenna 2012: 90).

The inquiry

In the context of risk impositions, the inquiry can comprise various activities. Firstly, one needs to determine the risk that is imposed. To be answerable, one needs to have an understanding of what one is answerable for. When there are clear connections between causes and effects, actions and outcomes, the object of answerability can be established without too much controversy. Oftentimes however, whether "the facts are as we take them to be" (*ibid.*) is the source of deep disagreement. Consider the relation between the MMR vaccine and autism: this claim has been studied time and again and has never been confirmed in biomedical epidemiological studies. Nevertheless, many parents, as well as a wider public, are convinced of the relation, and the claim is continuously repeated in debates on vaccinations. The possibility of such disagreements over facts invites the question whether there should be epistemic constraints on the reasons and

factual views presented in conversations about acceptable risk impositions.⁵¹ Obviously farfetched and demonstrably non-existent connections between causes and effects have to be excluded, but establishing the tenability of facts can prove to be challenging.

A next challenge is to determine who fulfils which role with regard to the risk exposure. Hermansson and Hansson (2007) develop a ‘Three-Party Model’ and distinguish the one making the decision to impose a risk, i.e. decision-maker, from the one benefitting from the exposure, i.e. the beneficiary, and from the one on whom the risk is imposed, i.e. the risk-exposed.⁵² Another role can be added to this model, making it a ‘Four-Party Model’: the one performing the risk imposition, i.e. the executive. It is important to distinguish the executive from the decision-maker, for if these roles are not fulfilled by the same agent – for example, when a nurse administers a medicine on doctor’s orders, or a construction company builds a highway commissioned by the government – the question can be rightly asked if, and how, responsibility for a risk imposition is shared. Also, the causal links between the risk-imposing agent (be it decision-maker or executive) and risk-exposed others must be established: to what extent can the harm possibly suffered by those exposed to risk be related to the actions of an identifiable agent? Recall the earlier mentioned Problem of Many Hands, in which a risk or harm is created by the combined actions – which in isolation are negligible – of multiple actors. In such cases, responsibility is diffused, and it is difficult to determine who has to justify which actions (answerability as giving reasons for acting), and who should manage resulting harm (practical answerability).

Anyone can perform such inquiries, but I believe the risk-imposing agent has the biggest responsibility to deliberate about the acceptability of his actions. Also, it is necessary to roughly identify a risk-imposing agent, even if this agent only marginally contributes to the risk in question (as in Problems of Many Hands). In the absence of a risk-imposing agent one cannot truly speak of a risk imposition, for there would be no one actually imposing anything: one would probably speak of a possible danger or

⁵¹ Again, I am indebted to Marcel Verweij for providing the example, as well as for suggesting the problem of establishing the facts in the inquiry component of the conversation about the acceptability of risk impositions.

⁵² Athanassoulis and Ross (2010: 221) make the same distinction between the decision-maker, the harm-bearer, and the potential beneficiary.

threat, but not of a risk imposition. Moreover, without a risk-imposing agent there is no one who can be morally addressed on, asked to defend, change, or stop his actions.

It seems less problematic if the risk-exposed cannot be identified, as long as one knows that there will be someone exposed to risk. Some philosophers argue that the identity of the risk-exposed is in fact totally irrelevant (Reibetanz Moreau 1998; Fleurbaey & Voorhoeve 2013). Johann Frick (2015: 195) calls this the Argument from Irrelevant Information, and explains: “Proponents of the Argument from Irrelevant Information assume that [...] It is morally irrelevant [...] that we cannot know who will be harmed by the risky action, as long as we know that some persons will be harmed”. I agree that it is indeed absolutely necessary to be able to imagine another person who will be exposed to risk, and who can demand a justification for the exposure. I also agree that specific information about the identity of the risk-exposed is not required to start evaluating a risk imposition. However, such information cannot be completely irrelevant, for differences between persons alter their vulnerability to certain risks. Consider for example an increase in taxes: this will affect a successful entrepreneur differently than a struggling mother of three. People are resilient to various degrees when it comes to dealing with risk, and their level of vulnerability influences the acceptability of exposing them to risk. Information about the identity of potential victims, when it is available, should then be taken into consideration in the evaluation of risk impositions.

The address

After it has been sufficiently established that “the facts are as we take them to be” (McKenna 2012: 90), the risk-imposing agent can be addressed. This can be done in the form of a moral judgement, as in the example of Daphne blaming Leslie for her prejudiced joke. But blaming is only an appropriate address if one knows that it is likely that harm will result from a risk imposition, or this harm is considered to be severe. If there is no, or very limited, information available about the negative impacts of an action on the lives of others, there is no solid ground for blame, and such judgements would be unfitting, or even unfair. But uncertainty does not defeat the possibility of continuing the process of addressing and responding. The risk-exposed can still ask the risk-imposing agent why she would want to perform an action that might result in harm.

In turn, the risk-imposing agent can justify her action by proceeding with caution.⁵³ Also, she can promise to stop or change her course of action when new information becomes available, e.g. about the likeliness and severity of harm, or the identity of the risk-exposed.

The account

In response to the address of the risk-exposed, the risk-imposing agent gives an account: a catalogue of her reasons for acting. To have an idea of how this might be done, let us consider the following example. Adriana (A.) wants to invest the money she saved for the tertiary education of her son Benjamin (B.). To determine whether this is a decision she is able to adequately justify, she can run through the address-and-response process.

Firstly, there is the risk-imposing contribution of investing the savings. A. could leave the money in her savings account, but the interest on that account is negligible. She could also invest the money, but this option carries more risk. She could lose some of the money and worsen B.'s opportunities to enjoy good higher education. Or worse, she could lose all the money and deny him the possibility to go to university altogether. However, investing also holds the possibility of increasing her funds and improving B.'s opportunities.

Secondly, there is the inquiry into what is known about the risk and the circumstances in which the risk is imposed. At first glance, A. seems to be the decision-maker and the executive of the risk imposition, and B. the risk-exposed as well as the potential beneficiary. In a less obvious way, A. could also be affected by the outcomes of the decision to invest the money, as B.'s education, or lack thereof, can in some way reflect back, or have an impact, on her. The more information one has about the particularities of the situation mother and son find themselves in, the better one is equipped to determine the acceptability of the risk imposition.

⁵³ It seems to depend on the context whether actions should be more or less restricted by precautionary measures. In medical contexts for example, slightly unrestricted action is seen as reckless, whereas in the informal setting of everyday life, where people are also uncertain about how their actions might affect others, it is considered less problematic. Risk seems to be more accepted, and acceptable, in uncontrolled, or uncontrollable, settings than in controlled, or controllable, settings.

Consider the following scenario: A. and B. come from a disadvantaged family, in which all the adult members have to contribute to the household and work hard to make ends meet. If B. gets a good education, he will increase his chances on the labour market, and therefore his family's chance at a more comfortable life. The quality of education at the public universities in the country where A. and B. live is terrible, and at present A. has not saved enough money to send B. to a private college. A is desperately looking for a way to quickly increase her funds. She has no experience when it comes to investing, but has a good friend, Calvin (C.), who is a successful investment banker. C. advises A. to buy some very promising stocks. According to C.'s forecasts, chances are high that, if A. invests, she will be able to send B. to a private college. But, he warns, there is also a small chance that A. will lose some, and perhaps all, the money and will not even be able to pay the tuition fees of a public university. If A. does not invest, B. can at least go to a public university, which, under the circumstances, is still better than no higher education at all.

Now consider another scenario: A. has done well with her own business. She can comfortably sustain her family and has enough savings to send B. to a private college. B. is not expected to provide for his family, so whether B. enjoys higher education, and the quality of that education, only has bearing on B.'s individual future prospects. A. wants to invest the funds for B.'s education in the stocks that C. considers so promising. In this scenario however, A. wants to use whatever extra money she makes from the investment to install a swimming pool. If A. does not invest, B. can go to a private college but she will not be able to pay for the construction of the pool. If she invests, chances are high that she will be able to send B. to a private college *and* install the pool. But again, there is also a small chance that she will lose some of the money, perhaps even all of it, and will only have enough left to send B. to a public university.

In both scenarios, there is choice between a gamble, i.e. investing, and an assurance, i.e. not investing. In scenario 1, the gamble has a high chance of a good education combined with a small chance of no education, while the assurance is a bad education. In scenario 2, the gamble has a high chance of a good education combined with a small chance of a bad education, while the assurance is a good education. In both scenarios, much can be lost in the gamble: in scenario 1, B. runs the risk of not being able to study at all, and in scenario 2 he runs the risk of receiving a bad one. But only in scenario 1 is

there a lot to be won from the gamble, namely, a good education for B. In scenario 2, B. is already assured to receive a good education, and this starting position will not be improved by A.'s decision to invest. Moreover, in scenario 1 the gamble is taken to increase the chances that B. gets a good education and can support his family. In scenario 2 the stakes are much lower and the only added benefit potentially gained from the gamble is the luxury of a swimming pool.

Now A., pondering the investment, can envision a future B. calling out to her, addressing her, asking her why she made the decision to invest the money. In scenario 1, B. can reasonably ask A. why she invested, but only in scenario 2 would it be appropriate for B. to blame A. Note that he can blame her irrespective of the outcome: even if the gamble turns out profitable and A. secures funds for both B.'s education and the installation of the swimming pool, he can still blame her for speculating with the quality of his education and future prospects. In response, a future A. can formulate an account of why an earlier A. decided to act the way she did. She can do so by responding to the general ethical questions relevant for the evaluation of risk impositions, summarised in Table 4. In Table 5, shown below, a column has been added with answers to these questions in both scenario 1 and 2. Table 5 then captures A.'s thought process as she evaluates the acceptability of the risk she imposes on B.

Ethical perspective	Consideration	Question	Answer	
			Scenario 1	Scenario 2
Utilitarianism	Severity of negative effects (harms)	How bad can the outcome(s) be?	No education	Bad education
Utilitarianism	Extent of positive effects (benefits)	How good can the outcome(s) be?	Good education for B. and better prospects for more comfortable life for whole family	Good education for B. and swimming pool for whole family
Utilitarianism	Likelihood (or probability) of harms	How likely is/are the bad outcome(s)?	Unlikely	Unlikely
Utilitarianism	Likelihood (or probability) of benefits	How likely is/are the good outcome(s)?	Likely	Likely

Deontology	Recognition of duty not to harm without qualification	If the bad outcome occurs, will a duty be left unfulfilled?	Parental duty to enable child's proper education	Parental duty to care for, and act in, child's best interests, as well as parental duty to enable child's proper education
Deontology	Recognition of duty not to impose unreasonable risk of harm	If the good outcome occurs, will a duty be left unfulfilled?	No	Parental duty to care for, and act in, child's best interests
Rights theory	Respect for right not to be harmed without qualification	If the bad outcome occurs, will a right be violated?	Child's right to proper education	Child's right to parental care and consideration, as well as child's right to proper education
Rights theory	Respect for right not to be exposed to unreasonable risk	If the good outcome occurs, will a right be violated?	No	Child's right to parental care and consideration
Rights theory	Possibility and availability of compensation or restitution for risk or harm	Is there adequate compensation possible and available to the person exposed to risk/suffering harm?	No	Inadequate
Contractualism	Distribution of harms	Who will be affected by the bad outcome(s)?	A., B., and the rest of the family	B.
Contractualism	Distribution of benefits	Who will be affected by the good outcome(s)?	A., B., and the rest of the family	A., B., and the rest of the family
Contractualism	Availability of alternatives	Are there alternative courses of action that have the same possible benefits but fewer risks?	No	Roughly: not investing

Table 5: Overview of Adriana's answers to ethical questions relevant in risk evaluation.

If A. decides to invest in scenario 1 and the risked harm materialises, i.e. no higher education for B., she must acknowledge that she has failed to fulfil her parental duty to enable him to continue with his education. However, this deontological consideration against the decision to invest seems to be offset by other considerations. For if the chance of benefit materialises, i.e. a good education for B. as well as better prospects for a more comfortable life for the whole family, A. has not only succeeded in granting B. the right to proper education, but also in improving the chances of a brighter future, not only for B. but for the rest of the family as well. Apart from this rights-based consideration, there are utilitarian considerations: it is very unlikely that B. will not be able to study, and it is very likely that he will be able to enjoy a good education. Moreover, there is the contractualist consideration that the possible harms and benefits accrue equally to A. and B. (and the rest of the family). Also, there seems to be no reasonable alternative at hand that involve no, or less, risks, and can yield similar benefits in the same period of time.

If A. decides to invest in scenario 2, she might argue that B. has a high chance of a good education. However, this utilitarian consideration cannot justify the risk imposition, first and foremost because the same good outcome for B. is already secured: A. does not need to engage in risky investment activities in an attempt to realise this outcome. If A.'s investment is profitable and B. can still go to a private college, she fulfils her parental duty to aid in her son's flourishing and enable him to enjoy proper education. Nevertheless, she has used the funds dedicated to his education as a means to another, less valuable end, and has therefore failed to fulfil her parental duty to act in her child's best interest. What is more, the risk imposition might have positive results for all those involved – B. can go to a private college and the whole family can jump in the pool on hot days – but the expected loss falls only on B. If that bad outcome materialises, i.e. B. will have to go to a public university, A. has lost the opportunity to install a pool, and perhaps suffers loss of face as a result of not investing properly. But this is not a harm to her in the way the lost opportunity to enjoy good quality education is a harm to B. A.'s life, and that of her family, will still be the same without the pool, whereas B. will be worse off than he would have been. A. will then have failed to fulfil her parental duty to act in her child's best interests and enable him to receive quality education she can

afford.⁵⁴ Moreover, she will have violated B.'s rights to care and consideration. These reasons based on deontological, rights-based, and contractualist considerations make for a convincing argument against the risk imposition. All in all, only in scenario 1 can A. provide reasons that justify the risk imposition on B., can the risk imposition be considered acceptable, and can A. adequately answer for her action.

And what about the role and responsibility of C., the investment banker who offers advice to A.? C. is more knowledgeable than A. when it comes to the stock market and investments: compared to her, he is an expert. Moreover, C. is successful, and he is A.'s friend, so his advice can be expected to be reliable and given with her, and her family's, best interests in mind. The trust that A. extends to C. can then surely be considered sound. Is C., because he is an expert and A. is not, responsible for the outcomes of A.'s decision to invest? I believe this depends on the quality of the information he gives to A. I believe that C. is responsible for providing clear, understandable, and truthful information to A. If he has given her such information, he is not responsible for the outcomes of her decision to invest, or at least not to the extent that A., or others, can rightly blame or praise C. for any results of the investment.

However, if he has not acted responsibly in his role as informant, he might be held accountable for negative results of the investment. If it for example turns out that C. deliberately misinformed A., he can be demanded to answer for his actions. If A. can prove C.'s misconduct, she can hold C. legally accountable by taking him to court. If she only has a strong suspicion, she can still hold him morally accountable by demanding his reasons for acting the way he did. The interpersonal process of address-and-response can then explain why A. is entitled to know, and C. is obliged to answer. If C. did not knowingly misinform A., but should have known that his information was incorrect – for example, he should have foreseen that the stocks he was advising her to invest in would plummet in the near future – he can still be answerable and act in an answerable way if the investment has a bad outcome. At the bare minimum, he can be

⁵⁴ I believe that the content of duties differs according to personal conditions and capabilities. If A. has the financial means to send B. to a public university, she has the duty to offer him that opportunity. If she has the means to send him to a private college, she has the duty to offer him that opportunity. If she has no means to enable him to enjoy tertiary education whatsoever, she might have a strong claim on, perhaps even a right to, financial assistance from the government and higher education institutions. A.'s financial situation then determines the content of the obligations she has with regard to her family, but not necessarily how many such obligations she must fulfil. For example, she has a duty to enable her children to get educated if she can afford that, but not a duty to enable them to swim in pools.

expected to apologise to his friend: a form of attitudinal answerability. Depending on the circumstances, he might also be expected to compensate the money A. lost because of the investment: a form of practical answerability. I will discuss these types of answerability in the next sections.

8.6 Answerability as practical and attitudinal responsiveness

Athanassoulis and Ross (2010: 218) state that the moral quality of decisions that involve risk depends crucially upon “the responsiveness of the risk-taker to [...] contextual features”. The authors (*ibid.*: 225) interpret such responsiveness in terms of the decision-makers’ ability to provide “reasons for risking”, and argue that such reasons should be based on more than just probability estimates of desired and undesired outcomes. In the previous sections I discussed what such reasons for risking might be, apart from utilitarian ones, and how one can formulate them by going through the stages of the address-and-respond process. But I extend the notion of responsiveness beyond giving reasons for acting: virtuous answerability includes other types of responsiveness as well, namely, practical and attitudinal answerability.

8.6.1 Practical answerability

As stated earlier, risk impositions have to be continuously assessed: from decision to action, and from action to aftermath. In every timeframe, there are different ways in which a risk-imposing agent can be practically answerable. Recall that practical answerability (PA) entails all the ways in which possible harm to others can be managed, controlled, mitigated, reduced, minimised, or avoided: informing, and obtaining consent from, risk-bearers where possible, required, or appropriate (PA1); putting safety measures in place (PA2); acting with caution (PA3); acting so as to avoid, minimise, or at least reduce further risk or harm (PA4); and aiming to provide compensation or restitution (PA5).⁵⁵

In the timeframe between decision and action, a risk-imposing agent can first of all be practically responsible by informing those he wants to expose to risk, and striving to obtain consent from them (PA1). Of course, it has to be possible or necessary to obtain

⁵⁵ Compensation entails the replacement of what was lost with a different thing with equal value. Restitution entails the replacement of what was lost with a similar thing with equal value.

consent for risk exposure. As was discussed in Chapter 5, it can be literally impossible to obtain consent for risk impositions, for example from unidentified or unidentifiable risk-bearers, future generations, children, or mentally impaired persons. It can also be practically impossible to obtain consent for risk impositions, for example from large groups. Moreover, obtaining consent is sometimes unnecessary, as is the case with actions that impose a negligible risk on others. This is not to say that in these instances the consent requirement can simply be ignored, but that it, depending on the circumstances in which a risk is imposed, can be overruled by other considerations. Secondly, a risk-imposing agent can put safety measures in place that will reduce, or at least not add to, the possibility that others will come to harm as a result of his actions (PA2). Consider a car owner who brings his vehicle in for a yearly service, or a smoker who only smokes in designated smoking areas.

In the timeframe that comprises the risk imposition itself, practical answerability can require an agent to act with caution and be attentive to the circumstances in which he acts (PA3). Consider the car owner from the previous example: when he drives his car, he should adhere to the rules of the road and drive carefully. The circumstances influence the appropriate level of caution: for example, on a dirt road he must drive at a lower speed than on a tarred road.

In the timeframe between the risk imposition and the materialisation of its consequences, practical answerability entails the capacity to respond adequately to, or appropriately manage, the arising situation. For once a risk is imposed, new information might become available that influences the acceptability of the imposition. In the light of such information, one might have to adjust one's course of action. Consider a university student researching the experience of patients in a hospital ward. It turns out that the student's questionnaire adds to the anxiety the patients already experience by being in hospital. Practical answerability can then require the student to put his research on hold, and think of other ways in which he might obtain the information he needs. In order to prevent further harm, he must at least reduce or minimise his role in their anxiety, and preferably altogether avoid adding to the patients' negative experiences. Note here that practical answerability can overlap with answerability as giving reasons for acting. Both kinds of answerability require the student to stay critical and inquisitive, and gather information about the effects of his research. New information

enables him to reassess his reasons for structuring and conducting the research in a particular way, and if that information makes those reasons unjustifiable, he can no longer answer for the risk he imposes on the patients. He then might not be able to be answerable in terms of giving reasons for acting, but he can be practically answerable by managing the arising situation in an appropriate way, i.e. adjusting his actions to reduce further harm or risk (PA4).

In the aftermath of a risk imposition, it can sometimes also be expected of a risk-imposing agent that he provides compensation or restitution for harm that resulted from his actions (PA5). In Chapter 5 I discussed that cases where harm results from imposed risk, and where a causal link from identifiable risk-imposer to identifiable risk-bearer can be clearly established, the harm generally has to be compensated.

Managing risk impositions

Let us explore the idea of practical answerability with an example concerning the risks associated with geo-engineering techniques. These are large-scale – for the time being still hypothetical – technological interventions in natural systems that aim to reduce, or even counteract, anthropogenic climate change. One of the interventions proposed by climate scientists is to release sulphur dioxide (SO₂) into the atmosphere: a chemical compound that is naturally released in the event of volcanic activity. Imitating such an event, the SO₂ will create a shade shield that can protect the earth from the warming sun, thereby slowing down the heating of the climate (Muller 2016). Because ecological systems interact in complex ways, some risks are only identifiable once a technique is implemented in, and starts interacting with, the local natural systems. Geo-engineering techniques are therefore expected to have unforeseen risks. At the time of decision-making, it is impossible to determine the acceptability of consequences one cannot or does not foresee: those can only be evaluated once they are foreseen, or have materialised. But one can evaluate possible harms one can foresee: do the risks associated with a rapidly warming climate – unusual weather events, crop failure, food and water crises, biodiversity loss, climate wars, climate refugees, etc. – justify any harms that might result from implementing geo-engineering techniques?

This is a pressing question that deserves attention in its own right. But let us for the sake of the following example assume that the international scientific consensus is that the foreseen consequences of climate change are so dire, that it is acceptable, perhaps even mandatory, to create shade shields over certain regions. One of those regions is southern Africa, where a persistent drought impedes a reliable supply of water and food, which subsequently takes its toll on the lives of people and livestock.⁵⁶ The decision-making authority – perhaps a board of government representatives from all southern African countries – decides to start with the atmosphere above the sparsely populated Kunene region in northern Namibia. A shade shield is created and carefully monitored (PA2/PA3), and after some time there is sufficient evidence that the shade indeed contributes to reducing the heating effects of the sun. However, there is also evidence that the lack of sunlight has negative effects on the wellbeing of some members of the Himba tribe living in this region. Himba women are known for covering their bodies and hair in *otziye*, a mixture of butter and red clay. This forms a protective layer against the scorching sun, but is also an aesthetic expression intrinsically tied up with the Himba culture (Nelson 2011: 46). However, now that the sun has disappeared for an extensive period of time, some women feel they have lost a reason for applying the clay layer, and with it a sense of identity. These women no longer participate and fulfil their duties within their separate communities, which leads to tensions within the tribe. The negatively affected psychological wellbeing of some Himba women poses a further risk to the integrity of the tribal communities.⁵⁷

Whether or not these consequences were foreseen, the fact that information about them now emerges should incentivise the decision-making, and risk-imposing, authority to re-evaluate the acceptability of the project. The authority, and perhaps even all others in favour of the shade shield, can be called upon to defend their actions and convictions with reasons. Practical answerability requires them to consider, or revisit, several issues. Firstly, can the actual and foreseen outcomes be compared to each other, and if so, will such a comparison ever be fair if the nomadic Himba did not contribute to problematic changes in the climate? Secondly, are there alternative geo-engineering techniques, or

⁵⁶ The idea of creating a shade shield over this geographical region is an actual topic of scientific discussion (Muller 2016). Also, large parts of southern Africa are battling with droughts. However, the rest of the example is fictitious.

⁵⁷ Again, this is just an example. It must also be mentioned that there is considerable speculation about the origin and meaning of the use of *otziye* (Nelson 2011: 46).

other solutions, with similar benefits but fewer risks? After taking such issues into account, the authority might still conclude that it is acceptable to continue with the project. There might for example not be any effective alternatives available, and foreseen climate problems might be considered worse for everyone, including the Himba tribe. However, the actual harms inflicted on the Himba might be practically responded to by offering some kind of compensation or restitution, such as relocation to a similar but sunnier place (PA5). The future risks of tribal disintegration imposed on them might be adequately mitigated by, for example, arranging anthropologically embedded psychological support to the affected Himba women (PA4).

As discussed in the previous section, practical answerability sometimes requires a risk-imposing agent to seek the consent of the risk-bearers. However, as was mentioned in Chapter 5: “it is permissible [...] not to seek consent if seeking it would be unduly onerous” (McCarthy 1997: 216). For practical reasons, the number of people involved in the decision to impose a risk, or the number of participants discussing the acceptability of any risk imposition, has to be limited, not only to make consent possible, but also to enable a productive discussion. In this example in particular, each Himba community can be asked to select representatives, such as elders, who can engage in the decision-making process on their behalf. Such representatives could give or withhold consent to risks associated with the shade shield on behalf of the affected women and the rest of the community (PA1).

This draws attention to the general importance of transparent and understandable communication with others – first and foremost the potentially affected – as well as their active involvement in the decision-making process. Both considerations influence the general level of answerability with which risks are imposed: if there are no others to communicate and engage with, the address-and-response process of answerability cannot take place. For practical responsibility in particular, it is important to note that transparency alone is not enough: it is only a means of providing information. True communication entails not just providing facts, but offering relevant, intelligible, and checkable information (O’Neill 2015). Moreover, the risk-bearer must have the opportunity and ability to respond. Decisions and actions should then be open for inspection, critique, and revision.

Practical answerability can then require the authority in charge of the shade shield project to see to it that the Himba representatives develop an understanding of how, according to current scientific findings, climate change is expected to affect their communities. Also, the authority could offer the tribe a platform to voice their worries, offer solutions, and give other local input. This can increase the chance that social and individual values, convictions, and attitudes are explicated. In Chapter 3 it was noted that these things can influence the perception, experience, and evaluation of risks. Awareness and acknowledgement of such differences is an important step towards real communication between (representatives of) decision-makers, executives, beneficiaries, and risk-bearers. In the context of the example, one might expect that attempts at enabling and improving communication with, and involvement of, the Himba, are likely to foster better mutual understanding, respect, and trust, which in turn can increase support for, and consent to, the project.

8.6.1 Attitudinal answerability

The third type of answerability, attitudinal answerability (AA), entails having the appropriate attitudes and emotions with regard to the possibility of harm and harm itself, that express a good quality of one's will towards others. Recall that a requirement for such answerability is being able to evaluate harm as something mostly negative, something one wants to avoid, manage, or at least justify (AA1). This should motivate one not to act in ways that do, or could, harm others without good reason (AA2). The moral obligation not to harm others without qualification, and the right of others not to be harmed without qualification, are abstract ethical principles that capture the mostly negative evaluation of harm. But one should not only aim to avoid or justify harm because one formally adheres to rules. As the earlier discussed example of Smith's hospital visit indicated, one's motivation has bearing on the moral evaluation of one's actions. To be truly attitudinally answerable then, one should act with the intention not to harm others out of respect for others, care and concern for their integrity, wellbeing, and safety, and empathy with their fate (AA3).

I previously argued against the idea of the *phronimos*, the prudent (wo)man who acts wisely without exception: most people sometimes act based on flawed reasons, or motivated by the wrong attitudes or emotions. I believe they should not be immediately

marked as irresponsible or vicious. Attitudinal answerability offers the possibility to react appropriately, or to have fitting attitudes and emotions, to situations that result when risks are imposed for the wrong reasons, or motivated by the wrong attitudes or emotions. A risk-imposing agent can then still express her respect and care for, and empathy with, others, by experiencing some form of regret, remorse, shame, guilt, and embarrassment (AA4), accepting some degree of (self-)blame (AA5), or offering an honest apology (AA6). In the following sections I will argue that such attitudes and emotions can sometimes also be fitting even if risks are justifiably imposed.

Attitudes and emotions

Hansson (2013: 64) argues that even when things go wrong, people still “want [their] decisions to be morally acceptable (permissible) [...]. [...] [their] conviction that the decision was right should not be perturbed by information that reaches [them] after the decision”. If one performs an action that is justifiable at the time of decision-making, based on what one then knows about possible or probable outcomes of that action, the actual outcomes should not change how the action is perceived in hindsight. This leads Hansson (*ibid.*) to state that regret, and the desire to avoid regret, should not influence the moral evaluation of actions:

Regret is a psychological reaction, not an argued moral standpoint. Our moral aims when planning for the future cannot be condensed into an injunction to avoid such a psychological reaction. Instead, we should aim at avoiding any future situation in which it will be our considered judgement that we should have acted otherwise. Such a situation is of course accompanied by regret, but the two are not identical.

Consider Niko, who has offered to drive his neighbour to the department of Home Affairs for an important meeting concerning a visa application. He decides to take the N2 highway from Stellenbosch to Cape Town. They are well on their way when a truck driver, going in the opposite direction, loses control of the wheel and drives into Niko’s car. His neighbour is killed, but Niko walks away unscratched. Most likely he will tremendously regret how things have turned out. He might exclaim: ‘If only I had known beforehand that this would be the outcome! I would have acted otherwise! I

would have left earlier and taken the scenic and winding coastal road instead of the N2!’ However, this regret does not negate the justifiability of his choice to take the N2: when he made that choice, he just knew that the probability of such a devastating event is small, and that his neighbour had an important meeting to attend. Taking these considerations into account, it would not make sense to opt for the coastal road. One can then experience regret while simultaneously believing that one made a morally defensible decision, provided that one acted with the intention not to harm, and given the information one had at the time of decision-making about its possible or likely consequences. This is not the case when Niko for example drinks excessively before driving his neighbour to Cape Town. Niko now exposes his neighbour to a higher than normal, or generally accepted, level of risk. Even if they arrive safely, an evaluation of Niko’s earlier decision to drive will yield the verdict that he should have acted otherwise.

I agree with Hansson that avoiding regret should not be the only action-guiding principle one applies when acting under conditions of uncertainty. However, I do not agree with his argument that regret has no, or should not have any, bearing on the moral evaluation of actions involving risk. On the contrary, I believe that the ability to experience regret, just as other attitudes and emotions like remorse, shame, guilt, embarrassment, and self-blame, are vital for acceptably imposing risks on others.⁵⁸ They are appropriate responses when things turn out differently than hoped or expected: they testify of a risk-imposing agent’s humanity, and his acknowledgement of the humanity of others. Imagine a Niko who does not at all regret his choices and actions that resulted in the death of his neighbour, shrugging his shoulders while saying ‘that’s life’ or ‘whatever’. Surely this is not only a highly inappropriate, but also morally condemnable reaction. This calls to mind B. Williams’ (1973) example, already discussed in Chapter 3, of an unlucky lorry driver who kills a child, and Wolf’s (1990) explanation of the difference between a regretful lorry driver and an indifferent lorry driver in terms of self-blame. Others expect the lorry driver, who kills a child through no fault of his own, to experience regret, and to blame himself even if others will not blame him. The same counts for Niko (and even more for the truck driver that drove

⁵⁸ Adam Morton (2013) distinguishes regret-like emotions such as remorse from shame-like emotions such as guilt and embarrassment. The unpleasantness of shame-like emotions has to do with the experience of being critically judged by others, whereas the unpleasantness of regret-like emotions has to do with the fact that the past cannot be changed.

into his car, but the example does not focus on him or her). In my opinion, the acceptability of Niko's decision to transport his neighbour is influenced by his ability to experience regret and self-blame.

As stated, attitudes and emotions testify of a risk-imposing agent's humanity, and his acknowledgement of the humanity of others: an inability to have or experience them indicates a lack of respect for others, a lack of care and concern for their integrity, wellbeing, and safety, and a lack of empathy with their fate. Given what one knows at the time of decision-making, one's actions might be justifiable, but their outcomes can be undesirable. To then experience some form of regret and self-blame is to show that one recognises and acknowledges the connection between one's actions and their undesirable consequences, despite the fact that they were unintended, unforeseen, or even unforeseeable. Attitudes and emotions are, as I argued in Chapter 2, indicators of what human beings value and care for. Of course, they do not simply coincide, and sometimes do not correspond at all, with values: they can be biased and irrational. Moreover, the extent to which agents can be expected to experience regret and self-blame has to be limited, for such attitudes and emotions can be crippling and therefore morally undesirable in and of themselves. However, they should be taken seriously as they often reveal, or signpost, value judgements.

Consider Naima, who is about to eat the whole slice of cake while her friend visits the bathroom, but foresees that she will regret this decision. Examining the origin of her expected regret, she realises that she does not want to eat the whole slice because she values sharing it equally and fairly with her friend. By acknowledging this future regret and not eating the whole slice, Naima does not simply choose to avoid regret, but to realise a future in which she upholds her values. With regard to foreseen or expected outcomes then, retrospective attitudes and emotions can guide one in making prudent decisions. With regard to unforeseen or unexpected outcomes, as is the case with Niko's driving, they enable one to prudently respond to an unfortunate situation by showing that one cares. If Niko is regretful to a certain extent, and blames himself partly for the death of his neighbour, he is answerable in more ways than one. He is answerable in the sense that he can defend his decision to take the N2 with reasons, provided that he drove sober. Moreover, he is answerable in the sense that he experiences fitting moral attitudes and emotions in response to what has happened. If Niko suffers from some sort

of personality disorder that makes it impossible for him to have fitting attitudes and emotions, it would obviously not make sense to expect attitudinal answerability from him: this can only be expected from him if he is mentally sane.

I believe Hansson (2013) scraps regret from the evaluation of actions involving risk because he limits permissible risk impositions to those for which one can provide reasons. As suggested, I extend permissible risk impositions to include those that are responsibly managed and responsibly reacted to. Permissibility then not only depends on the quality of the reasons that a risk-imposing agent can give in favour of acting in a way that exposes others to risk (AR), but also on the quality of the way in which he manages his actions and their outcomes (PA), and the quality of his will and attitudes towards other people (AA). These are all ways in which a risk-imposing agent can answer ‘the call of the other’, and together form a threefold concept of conversational answerability. Moreover, I argue that attitudes and emotions should not be straightforwardly dismissed, but acknowledged and scrutinised. Ignoring their influence on moral evaluation unnecessarily desensitises and overly rationalises human judgement.

Now are appropriate attitudes and emotions, as expressions of respect, care, and empathy, only required in cases where harm has resulted from a risk imposition? What can in practice be expected attitudinally from a risk-imposing agent seems to depend, amongst other things, on his control over the risk imposition, and the acceptability of his decision to impose the risk in the first place. Consider another situation in which Niko and his neighbour again face an oncoming truck on the N2, but this time the truck shoots past and crashes into the guardrail. Niko might still wish that things turned out differently, and that he and his passenger did not have a near-death experience. However, it would not be fair of his neighbour, or others, to expect him to blame himself for an accident that did not happen, provided that Niko drove safely and without the intention or motivation to harm anyone. Now revisit the situation in which Niko has been drinking, but he and his neighbour arrive safely in Cape Town despite his intoxication. As no harm resulted from the action, this is a pure risk imposition. Niko clearly acted with a lack of concern for the integrity, wellbeing, and safety of his neighbour as well as other road-users (AA1–AA3). Niko can still be attitudinally responsive by experiencing and expressing regret and self-blame (AA4/AA5), and by

offering a literal apology to his neighbour – and perhaps even figuratively to other road users (AA6).⁵⁹

Respect, care, and empathy

But what is an appropriate amount of regret or self-blame, or of guilt and shame? And what is a fitting attitudinal response to actual harm, and the possibility of harm, to others? In general, what is the right amount of respect and care for, and empathy with, others? The notion of *phronēsis*, as the ability to find a mean between extremes, can again be helpful here. A risk-imposing agent responds in an attitudinally virtuous way to harm, and risk of harm, if he exhibits his humanity and concern for others, but is not overwhelmed by his feelings of care for others. He is not cold-hearted or indifferent, but also not consumed by his (fear of) regret, or crippled by his (fear of) guilt.

It is important to set boundaries in our care for others, otherwise one risks caring too much or for too many things. Care then becomes shallow and diluted, or paralysing and unbearable. Examples of shallow care are easy exclamations, such as caring about ‘the sinking islands in the Pacific!’, ‘poor people living in townships!’, or ‘the future of our country!’ without giving much further attention to these problems. An example of paralysing care is ‘caregiver burnout’, a condition sometimes experienced by caregivers of chronically or seriously ill patients: “A state of physical, emotional, and mental exhaustion resulting from the demands of involvement with people over a long period” (Pines & Aronson 1988 in Lee, Song & Shin 2001: 114). Forms of superficial and paralysing care are bound to be ineffective, or even counterproductive. Nihlén Fahlquist (2015) draws attention to an important observation made by Nel Noddings (2002): that care should be focused in order to be motivating and effective.⁶⁰ *Phronēsis* can then be interpreted as the ability to focus one’s care on things and people that deserve one’s attention in specific situations, to have an appropriate amount of care for those things and people, and to have an appropriate response in terms of attitudes and emotions.

⁵⁹ One might even consider the fine Niko has to pay when he is caught driving drunk as a financial expression of this apology.

⁶⁰ For a good account of care and the virtue of responsibility, see Nihlén Fahlquist (2015). For an explication of responsibility as forward-looking and non-reciprocal care for the future under conditions of uncertainty, see Groves (2009) and Adam & Groves (2011).

The fittingness of an attitudinal response depends on the particularities of the context. It matters, for example, how sober Niko should respond to the near-death of his passenger if that were a young boy not wearing a seatbelt, or an old man tired of life. In the latter case, Niko can still be expected to feel some remorse about the way in which the old man almost came to his end. In the former case, he can be expected to feel this as well, but also to blame himself partly for the fact that the boy almost lost the opportunity to live a life, and fully for not strapping the boy in. In both cases however, Niko's passenger should be the focus of his care and consideration: it would be morally inappropriate if he were to fuss over the melting polar ice or tensions in the Middle East just after their near-collision. But as discussed, there is, and has to be, a limit to Niko's care for both the boy and the old man, and the regret and self-blame he feels as a result of their experiences: after a while there will be other things that deserve his concern.

Here it again becomes clear that the three types of answerability overlap and interact. Empathising with others, and experiencing care and consideration with regard to the fate of others, namely, motivate one to think through, and deliberate the justifiability of, one's actions and their consequences. It inspires a willingness to provide reasons for acting, not only to risk-bearers and victims, but also to others who might evaluate one's actions. Moreover, empathy and care encourage one to manage materialised harm, or prepare for possible harm, in the best way possible.

8.7 Learning how to be answerable

Aristotle (2000, 2011) stresses that virtuousness and practical wisdom are learnt, and are the result of a good upbringing, education, role models, and experience. One first needs to learn that there are ethical rules, and be familiarised with various moral principles and considerations. One then needs to study and imitate examples set by virtuous others, and learn how to apply and interpret abstract rules in the light of practical circumstances. Through experience one can come to an understanding why there are rules, and why the virtuous are considered virtuous. One then initially has to learn *that* one needs to be virtuous, *how* to be virtuous, and *why* one should be virtuous. But a proper ethical education does not merely consist in learning what to do, and how or why to do it. Eventually one needs to transcend the rules taught by theories, and examples set by others, to arrive at virtuous judgements that are truly one's own (Annas

2011: 34).

For example, consider a toddler throwing a toy at someone. Her parents will tell her that she cannot, or should not, do that. When the child is older and bullies a classmate, her parents, or other teachers, will not only tell her to stop, but also why she should be considerate of others, and how she can express her concerns by being kind to other children and apologising if she is not. Now imagine that the bullying child grows into an adult woman, who terrorises her colleagues. She eventually stops mistreating her colleagues because her psychologist has told her that her behaviour is wrong, why it is wrong, and how she can change it. But clearly the woman is not a virtuous person. She has a virtuous character only if she is motivated to treat others with respect out of honest concern for their wellbeing, and develops this motivation of her own accord.

8.7.1 Continuing education for uncertainty

Building on this process of development and growth, I argue that the virtue of answerability, which comprises the abilities and dispositions required for practically wise decision-making, is a skill and attitude one has to acquire through learning. To be answerable for one's actions – in general for actions one performs under conditions of uncertainty, and in particular for actions that expose others to the possibility of harm – one firstly needs to learn *that* one must be answerable, secondly *how* one can be answerable, thirdly *why* one should be answerable, and fourthly to be *motivated* to act, choose, and be answerable. I believe this is a journey of a lifetime, and moreover, a continuous process of learning, unlearning, and relearning. In the words of Dwight Ingle (1968: 333 – 334): “The wise application of moral principles requires education for uncertainty. [...] Education for uncertainty should be a part of continuing education to support evolving humanness in a changing world where each person and each cross-section of existence is unique”.⁶¹ Environments, identities, ideas, values, perceptions, and situations change continuously, and so one must continuously learn how to understand, and respond to, them. Education for uncertainty, which I interpret for my purposes as learning how to make responsible decisions involving risk, can then never be complete.

⁶¹ Ingle (1986) does not mention virtue ethics specifically, but his references to the ‘wise application of moral principles’, the importance of education, the distinctness of persons, and the particularities of situations, clearly match virtue-ethical reasoning.

8.7.2 *Learning objectives*

To be answerable in a general sense, one first has to experience that life is inherently risky, that many actions carry the possibility of harm to other people, and that harm is something one wants to avoid, manage, or at least justify. One has to be taught to think about the future, and to imagine, envision, foresee, or predict the effects one's actions could, or will, have on others, who might live in different times or places. One has to develop a sense of respect for others, a sense of care and concern for their integrity, safety, and wellbeing, and the ability to empathise with their fate.

One has to learn that the moral (un)acceptability of acting in ways that expose others to risk can be influenced by considerations referring to the likeliness and severity of harm; the likeliness and extent of benefit; obligations not to harm without good reason; rights not to be harmed without good reason; compensation for, or restitution of, suffered harm; consent to risk exposure; and distribution of risks and benefits. One has to learn that the weight of these considerations, or the extent to which they influence the acceptability of risk impositions, depends on what one does, can, or should know about possible and actual consequences, possible and actual victims, relations between cause and effect, and relations between decision-makers, executives, and recipients. One has to learn to identify particularities of intricate, complex, and changing situations.

To be answerable in the sense of being able to give reasons for one's actions, one has to learn to acquire and gauge information about particularities to determine which moral considerations are relevant in a specific context, and what weight they should be given. One has to learn to be open to, but critical about, information, and to assess the reliability of available information. One has to learn to use that information to rationally formulate reasons for acting, or to develop experience-based intuitions, fitting emotions, and sound trust that can function as non-rational reasons for acting. To acquire more information to formulate better rational and non-rational reasons for acting, one has to learn, and develop a willingness, to communicate with, and trust in, others.

To be practically answerable, one has to learn to engage with others about the possible consequences of one's actions. One has to learn to assess whether safety measures are required, and if so, what kind of measures are effective. One has to learn to determine

whether caution is necessary, and if so, to what extent. One has to develop a willingness to make amends when things turn out wrong, or worse than hoped or expected. If one is not able to do any one of these things, one has to learn to involve, work with, and trust in others who are.

To be attitudinally responsible, one has to learn how to act on, and be motivated by, one's sense of respect and care for, and empathy with, others. One has to learn to focus one's concern on things and people that deserve attention, and to read the particularities of specific situations in order to express one's concern appropriately.

To be answerable then, one has to learn to communicate one's reasons, activities, and attitudes to others, and to listen to, interpret, and react to what others have to say. One has to learn to, again and again, engage in conversation with others about facts, values, and the relevance, application, and interpretation of abstract rules in particular situations.

8.7.3 A communal effort

This is a lot to learn, and as I stated, I believe it is a lifelong process. But this prospect should not be completely overwhelming, for answerability is essentially a communal effort, born from a continuous conversation between people. The conversation incentivises itself and keeps itself going, for people always need others to determine, acknowledge, and evaluate what is the acceptable and responsible thing to do in any given context. One might have to learn many things in order to be answerable, but others should also be willing to aid in that answerability by informing and educating. In fact, when it comes to determining the acceptability of actions that can negatively impact others, people are obliged to engage with each other. Indispensable for such engagement are values related to respect, such as humbleness and tolerance, values related to openness, such as inquisitiveness and reflectiveness, values related to cooperation, such as participation and attentiveness, and values related to trustworthiness, such as honesty and reliability. These values protect the quality of the conversation in which answerability for, and acceptability of, risk impositions are determined: "When freedom of debate and inquiry are impeded, when dogma and authoritarianism triumph over truth, when the mind retreats to the non-think in the face

of infinitude, [...] there is increased risk of a moral judgment going awry” (Ingle 1968: 333).

Answerability is then born from conversation. Consider that developments in science and technology enable one to have a better understanding of the possible consequences of one’s actions, and to have contact with others that are far removed. If one did not contribute to those developments, one’s ability to be answerable for one’s actions is then enhanced by the work of others. Another indication that answerability is a communal effort, is that answerability is shaped partly in social and institutional environments. Nihlén Fahlquist (2015) argues that institutions and organisations influence people and the decisions they make, and that therefore good institutions and organisations are necessary requirements for rearing responsible decision-makers. She (*ibid.*: 199) campaigns for creating “an organisational culture conducive of ethical behaviour”, i.e. contexts that enable, and encourage, responsible behaviour. People can be enabled, or taught, to make responsible decisions through for example ethical courses and discussions; they can be encouraged, or stimulated, to act responsibly through for example incentives and rewards. Nihlén Fahlquist (*ibid.*: 189) hopes that because of such things, and good organisational structures in general, people will learn to act with caution, instead of being risk-prone or recklessly adventurous. However, I argue that responsible agents not only aim to avoid harms and reduce negative consequences of risk impositions, but also seek out opportunities for change, development, and growth, are resilient in the face of difficulties, and able to deal with unforeseen situations. Social and institutional structures should be conducive of actions that seek to adequately manage risk, which in turn has to be the main learning objective of an education for uncertainty.

8.8 Conclusion

This chapter focused on the question: *Can a virtue-ethical understanding of responsibility offer a tenable alternative evaluation of risk impositions?* I conclude that it can: the acceptability of risk impositions can be evaluated by using the threefold concept of answerability. This alternative first of all changes the focus from actions to agents. Or rather, it combines an evaluation of actions with an evaluation of agents and their character. I acknowledge that actions and their consequences can be evaluated

without necessarily considering the agent performing that action. For example, driving a car is a risk imposition irrespective of the responsible character of the driver. The risks any driver imposes on others can then be evaluated in their own right: how likely or severe are these risks, have others consented to the exposure, do others benefit from the exposure, etc. I also acknowledge that the character of a risk-imposing agent cannot simply make a risk imposition acceptable. For example, reckless driving is reckless driving, regardless of the person behind the wheel. Such a risk imposition is unacceptable even if a reckless driver compensates or apologises for his actions. However, I believe one gets a more complete picture of what determines the acceptability of risk impositions by combining an evaluation of risk-imposing actions with an evaluation of risk-imposing agents and their character. I am convinced that the acceptability of risk impositions is not only influenced by moral considerations related to actions, but also by the responsiveness of agents to the particularities of concrete situations in which they act. The acceptability of a risk imposition is then not just a property of the action itself: it is directly correlated to the extent to which risk-imposing agents can, and do, respond to the call of risk-bearers and others, and account for the risk imposition to them.

I have extended answerability beyond providing reasons for acting. As discussed, this type of answerability is restricted by conditions of causality, freedom, and knowledge. If answerability was solely interpreted as reason-giving, agents cannot be answerable for a risk they did not create or contribute to; if they had no other option but to impose a risk; or in cases where extensive uncertainty makes it impossible to think through the consequences of actions. I argued that even in these cases, agents can be answerable by responding appropriately, in terms of management and attitudes, when harm materialises, or when new information about risks becomes available. In the threefold concept of answerability then, the notion of answerability as reason-giving is complemented with practical and attitudinal answerability. This enables agents to remain or become responsible, even when the conditions of causality, freedom, and knowledge are not met and reasons for acting cannot be provided.

Take for example risks related to climate change, to which primarily disadvantaged people, and especially those dependent on agriculture or living on islands, are exposed. Many modern people have no other choice but to act in ways that contribute to these

risks, and besides, the effects of individual contributions are often negligible. It might then very well be pointless to demand from individuals that they provide reasons for their actions. However, individuals can still understand that small acts contribute to larger problems. Practical and attitudinal answerability incentivise and enable them to take on responsibility for diffuse problems, even if their contributions are insignificant. The specific content of answerability with regard to risks of climate change depends on agents' personal circumstances. A student who has to take the bus to campus, might raise awareness among his fellow students; a businesswoman might opt for a job close to home; and a local politician might campaign for green transport solutions and curbing city emissions. To be answerable for a risk imposition is to appropriately express one's respect and care for others in actions that avoid, manage, or adequately justify harming them.

By allowing agents to be responsible, and take responsibility, for actions that expose others to risk in a multitude of ways, I believe the threefold concept of conversational answerability offers a comprehensive and rich account of acceptable risk impositions. I understand answerability as a process of address-and-response that involves primarily risk-imposing agents and risk-bearers, but that can also accommodate other participants as external judges. The acceptability of risk impositions then depends on agents' willingness to reflect on their actions, to justify them to others, and to let others scrutinise their actions and justifications in communal deliberation and debate.

CONCLUSION

The acceptability of risk impositions

This dissertation is the result of a three-year research project. I would like to use this conclusion to run through the most important trains of thought I had over the last three years, and that led me to this end point. In fact, it all started with a simple realisation: that most of the time when one acts, one does not know what will happen. What is more, life is an inherently risky endeavour, in which most actions involve at least some possibility of harm to other people, other creatures, or living entities. This realisation inspired me to think about choosing and acting wisely in the face of uncertainty, and justifying one's decisions and actions when they might cause other life to suffer. It inspired me to work toward a more complete understanding of the notion of risk, and its role in normative philosophy. But quite soon after I started to explore these topics, I realised something else: that understanding risk might be a lifelong project, so that in three years, and one dissertation, I would only be able to attend to a fraction of the ethical questions surrounding risk. I therefore chose to narrow my research down to the acceptability of actions that involve risk to other human beings, and to discover to what extent I would be able to answer the following question: *When – under which circumstances or conditions – it is acceptable to impose a risk on others?*

Subsequently, I chose to further narrow down my research by approaching this question from the perspectives of several main branches of normative thinking. How would, or could, a committed utilitarian, deontologist, libertarian, or contractualist justify risk impositions? I explored different justificatory routes. Firstly, a consequentialist route, which roughly claims that imposing a risk on others is acceptable if the beneficial outcomes outweigh the harmful outcomes: i.e. a utilitarian perspective. Secondly, a non-consequentialist route, which deems it acceptable to impose risks on others if those others are first and foremost respected as persons, who should not be harmed without qualification: i.e. a deontological, rights-based, and contractualist perspective. I found that both routes ran into trouble because their focus is too narrow. Whether or not it is permissible to perform an action that exposes others to risk is not determined solely by the isolated justifiability of the outcomes to which they eventually lead, and the consequentialist realisation of benefits over harms. Permissibility is also not solely

determined by the intentions with which they are performed, and the adherence to the non-consequentialist ideal of respect for person. In short, it is not a question of either/or: justifying risk impositions either consequentially or non-consequentially. Rather, it is a question of finding a strong compromise between the two, acknowledging that both the outcomes and respectful treatment of human beings are important, and enabling consequential reasoning within non-consequential restrictions.

A complex interplay of moral considerations

While investigating how mainstream branches of normative theory would evaluate risk impositions, I found that both consequentialist and non-consequentialist theories brought to the fore a whole array of important considerations. I therefore argued for a comprehensive approach to acceptable risk impositions, that is sensitive to the particularities of risky contexts. As Hansson (2013: 126) rightly states: “the task of moral philosophers is not to produce timeless and contextless ethics – we might just as well run after the end of the rainbow – but to develop moral theory in relation to our changing society”. Leaving the end of the rainbow for others to chase, I committed myself to taking steps toward, and contributing to, developing a realistic ethical framework for the evaluation of risk impositions. This framework leaves room for the following considerations to be taken into account:

- **Outcomes:** what are the expected and actual outcomes of an action? What are the benefits and harms (or costs)?
- **Intentions and motivations:** do risk-imposing agents act with the intention (and in accordance with their duty) not to harm others, or at least with the intention to reduce the possibility of harm to others? Are they motivated to respect the humanity of others, and their right not to be harmed without qualification?
- **Agency:** do risk-imposing agents choose to impose a risk, or do they act involuntary or unconsciously? How much control do agents have with regard to the actual outcomes of their actions?
- **Cause and effect:** to what extent can the actions of one agent be linked to harm suffered by another? Is it fair to expect of agents that they understand their agency, i.e. causal or supporting role in complex chains of reactions?

- **Identification:** can risk-imposing agents and risk-bearers be identified?
- **Distribution:** who stands to lose and who stands to gain from actions involving risk? Are the decision-makers and the executives also the ones reaping the benefits or suffering the negative consequences? Can harms and benefits be fairly shared, traded, or otherwise distributed?
- **Consent:** is explicit or implicit consent given to risk exposure?
- **Power relations:** who has the information and capacities to assess, impose, or react to risks? Who is in the position to make choices about risk creation or management? Who is complicit in the imposition of risks?
- **Knowledge:** what do, can, or should risk-imposing agents and risk-bearers know in advance about risks? How much (un)certainty is there?

Rules and judgement

In different situations involving risk to others, different combinations of considerations are important to different degrees. What is more, different people will assess the weight of different considerations differently. How does one make sense of this complex interplay of morally relevant aspects of risk impositions, and make good decisions and act justifiably in the face of so much variation? I was, and still am, convinced that one must be a responsible person with a good sense of judgement to do so. The importance of judgement naturally led me in the direction of Aristotelian virtue ethics and the notion of *phronēsis*: prudence or practical wisdom. Someone with *phronēsis* is able to deliberate sharply and dynamically, to interpret ethical principles in the light of a particular risk imposition, and to adequately assess the extent to which different considerations are relevant. At the same time, this person remains open to changing situations as well as alternative and opposing perspectives, and is willing to continuously better one's judgement and adjust one's actions in the light of new information.

This ties in with the proposed change in perspective from actions to agents. I argued that evaluating risk impositions is not merely a matter of developing ethical rules for conduct or determining the rightness of actions. It is also a matter of responsible character and of using one's judgement – to the best of one's abilities – in the complex, chaotic, and messy contexts of everyday life (B. Williams 1973; see also Renn 1992;

Hogget 2005). Rachels and Rachels (2010: 168) point out that theories of right action neglect the question of character and therefore “cannot provide a completely satisfactory account of moral life”. However, theories of virtues are incomplete in the other direction, and leave one at a loss with regard to determining what to do and how to assess actions (*ibid.*: 168 – 170). I therefore proposed to interpret the considerations that influence the acceptability of risk impositions, and that are derived from theories of right action, within a virtue-ethical framework. It comes down to risk-imposing agents to judge the relevance of each consideration in situations involving risk to others. As Frick (2015: 223) states: “The aim and ambition of moral philosophy should be to inform our judgment, by making us alive to the relevant ethical considerations, not to abolish the need for judgment altogether”. Ethical rules are not there for one to hide behind, but to be given application and meaning in concrete settings.

Virtuous, conversational, and threefold answerability

My next challenge then was to give an account of good judgement: the kind of judgement that enables one to distinguish acceptable from unacceptable risk impositions. I argued that good judgement is responsible judgement, and that acceptable risk impositions are risk impositions for which one can answer. Understanding responsibility as answerability, I interpreted the acceptability of risk impositions in terms of the answerability of risk-imposing agents. Acceptability is then not just a property of the action itself, but is directly correlated to the extent to which risk-imposing agents are answerable for their action to risk-bearers and others. Accounts, justifications, and answers are always given in response to something, to demands, calls, or questions. This inspired me to conceive of answerability for, and acceptability of, risk impositions as something one must determine in conversation with others. Because answerability comprises multiple dispositions and abilities, I was drawn to explaining it in terms of virtue: to be responsible is to have the virtue of answerability. An answerable agent is motivated to respond when being addressed, to engage and communicate with others to understand what is at stake and for whom, and to justify her actions to others. As such, conversational answerability provides a tool with which to envision possible futures, and think through how one might justify those futures.

In my framework of conversational answerability, risk-imposing agents and risk-bearers enter into a conversation with one another, be it literally or imaginary. In this process of call and response, one can be answerable for imposing risks on others in three ways. Firstly, one can give reasons for one's actions. In order to do so, one needs to be able to think through the possible effects of one's actions. This can be done on the basis of rational deliberation, but also of sound emotion, intuition, or trust: as long as one can adequately explain or motivate one's decisions to others. This is what I called answerability as reason-giving. Again, whether a reason is a good reason, i.e. whether it in fact renders a risk imposition acceptable, is something that has to be determined in an open conversation between stakeholders. However, normative considerations, such as the likeliness of harms and benefits, fairness of distribution, and consent, can provide the basis for developing good reasons to impose a risk (for an overview of these considerations and related reasons, see Table 4 on page 179). Secondly, one can be practically responsive with regard to possible harm that one causes or contributes to (informing and obtaining consent from potentially affected parties, acting with caution, putting safety measures in place), and with regard to actual harmful outcomes (acting to avoid further harm and providing adequate compensation). This is what I called practical answerability. Thirdly, one needs to have certain kind of sensitivity to be able to respond properly to the fact that one exposes others to the possibility of harm (acting with caution, care, and good will toward others, i.e. the intention not to harm others without qualification), or actually harms them (experiencing some form of regret and self-blame, and offering an honest apology). This is what is called attitudinal answerability. Now then, I am finally able to answer the main research question:

When – under which circumstances or conditions – it is acceptable to impose a risk on others?

It is acceptable to impose a risk on others if the risk-imposing agent is answerable for her actions: she gives reasons that justify her actions, and responds in a practically adequate and attitudinally fitting way to risked or actual harm.

Necessary conversation

Answerability then requires epistemic, managerial, and attitudinal skills. But can agents truly be answerable for risk impositions in this sense, or is it too much to ask? Even if one knows that almost every action one performs can have some negative effect on another person's reality, most of the time one has limited foresight with regard to the possible or actual outcomes of one's own actions and those of others. Moreover, real life situations are often complex and multidimensional, which impedes one's ability to ascertain what is a good practical or attitudinal response. It can be very difficult to make ethically justifiable choices when it comes to exposing others to risk, and I therefore acknowledged that most agents only have the virtue of answerability to a limited extent. They are responsible decision-makers in specific roles, contexts, or areas of expertise. It is virtually impossible to be virtuous across the board, make practically wise decisions in all areas of life, and always be answerable for the risks one imposes on others.

What is more, it is not only difficult to always be answerable for one's actions, but also to be fully independently answerable. In a complex and dynamic world, one often has to trust other people, or abstract systems of knowledge, to make choices, act, and live. This naturally limits one's answerability. But instead of seeing this as a weakness of my framework for the evaluation of risk impositions, I believe it gives all the more reason to interpret answerability conversationally and as a communal effort. Interconnectedness should be an invitation to engage with others in conversation, for to place and refuse trust intelligently, one has to communicate with others. One has to listen to, and learn from, others about convictions, values, and interpretations. Complexity and uncertainty should also be incentives for conversation. Individually one might for example not know how one's actions could harm others, or what an appropriate practical response to risk is in a particular situation. But one could obtain necessary information by communicating with others, and as such enable oneself to make better decisions and perform actions for which one is answerable. One then needs others to obtain missing information, and also to check, discuss, understand, and reflect on available information.

Conversing is then not just something one should do out of kindness or politeness. Rather, one has to do it out of necessity. One can only determine the value and truth of

actions, outcomes, situations, or intentions in relation to, and in conversation with, others. As Hannah Arendt (1959: 233 – 234) writes: “Factual truth [...] is always related to other people: it concerns events and circumstances in which many are involved; it is established by witnesses and depends upon testimony”. The notions of value and truth are superfluous if there are no others to witness, acknowledge, validate, broaden, question, reject, or threaten one’s evaluation and understanding of things. This statement should not be taken to the relativistic extreme of ‘anything goes’, for not just anything is acceptable within the paradigm of human judgement. It should be understood as saying that conversation is vital within the context of human relations. Speaking of the acceptability of, and answerability for, actions only has meaning because people are connected, exposed, and vulnerable to other people.

Moreover, the possibility of loss, of having to surrender or restrict one’s values and truths when confronted with those of others, compels one to inquire what one holds dear, what one stands for, what one demands from others, and what others can demand in return. In order to live together, people must discuss and set limits to the ways in which their lives – now or in the future – impact each other. The need to communicate with others entails the need to forge a common project. Such projects are not always based on based on common values, but they have to be based on intersections or commonalities between values in order to be sustainable.⁶² And in fact, the need to forge such projects should be celebrated, as it requires one to participate and cooperate, to be open, tolerant, respectful, accepting, inclusive, and solidary toward others: it demands one to be answerable.

Nurturing awareness of one’s responsibility can then encourage one to take further responsibility. For indeed, one is responsible for many things, but one can also be responsible, and take responsibility, in many ways: not only by giving reasons for past and current actions, but also by engaging with, caring for, and committing to the future of the world, and of other people. The virtue of answerability invites one to critically reflect on one’s own conduct, and explore the extent of one’s knowledge about the impact of one’s actions. It incentivises one to deliberate with others about factual

⁶² The idea of a common human project based on value intersections I owe to Lori Amy, who gave a presentation on security and vulnerability at the conference *The Value of [In]Security* in Tübingen on 29 July 2015.

information, ethical considerations and interpretations, and the acceptability of decisions, actions, and consequences. As such, the virtue of answerability empowers one to make quality decisions under uncertainty.

Drawbacks

A first drawback of the virtue-ethical interpretation of responsibility is that it depends heavily on people's willingness to cooperate. If people do not reach out, listen to, and respond to the call of others, neither conversation nor virtuous answerability is possible. I hope to have demonstrated the need to engage with others in order to acquire knowledge about facts and determine the value of things, as well as to meaningfully apply ethical principles and act in the face of an uncertain future. I also hope that the realisation that conversation is necessary will motivate people to engage in it.

A second drawback is that virtuous answerability might be discouraging. If responsibility not only entails the expectation to provide good reasons for acting, but also to be practically and attitudinally responsive, it might be conceived as overwhelming, even paralysing. However, I hope that acknowledging responsibility as a communal project, as something shared amongst those involved, will make it a lighter load to carry. What is more, it can even become a uniting and empowering force.

A third drawback is the misuse of power and rhetoric. Strong and eloquent voices can easily overrule, overshadow, or marginalise the demands of others. This has to be prevented, for honest conversational answerability can only originate from a process in which each participant has the opportunity to be heard. On the one hand, education and training in communication can help to strengthen people's ability to deliberate. On the other hand, guidelines and rules for communication, as well as supervisory boards or institutions monitoring and enforcing such guidelines and rules, can help to create a conversational environment that offers fair opportunities for participation to risk-imposing agents as well as risk-bearers.

Other drawbacks concern the effort of engaging in conversation about the acceptability of risk impositions. This effort has to be circumscribed by certain restrictions, otherwise

the following aspects can pose significant problems for the practical feasibility of conversational answerability:

- **Number of participants:** there has to be a limit to how many others could or should be involved. One cannot be expected to involve every agent in one's decision-making who potentially has a valuable contribution to make. If there are too many participants in, or contributors to, the conversation, stakeholders run the risk of not being able to come to any evaluative agreement or concluding judgement.
- **Deadline:** there has to be a limit to how much time is spent on the process, and a point of future hypothetical retrospection has to be set from which stakeholders will evaluate the present risk imposition. Without a timeframe or deadline, conversations can go on indefinitely.
- **Possibilities:** there has to be a limit to how many possible future outcomes of a risk imposition are evaluated. Without such a demarcation, stakeholders will be bogged down in discussing extremely remote possibilities.⁶³

These drawbacks have to be attended to in order to make conversational answerability truly an attractive and realisable alternative for the evaluation of risk impositions. But this is something for another research project.

Ideas for future research

The following areas also comprise ideas for future.

Facts and reasons

- Are there, or do there need to be, epistemic or moral constraints on the concerns, reasons, and factual views people are allowed to bring into conversations about acceptable risk impositions?
- To what extent do connections between causes and effects – risky actions and harmful outcomes – need to be socially accepted or scientifically proven in order to be included?

⁶³ However, on the other hand, imagination should not be stifled too much. As Admiral James Stravridis (2016: 16) writes in an article in Time Magazine, referring to findings of the commission that investigated 9/11: “the fall of the Twin Towers was not a failure of intelligence – it was a failure of imagination”.

- How reasonable should reasons be?

Communication

- To what extent should a risk-imposing agent and a risk-bearer be identified in order to be able to imagine a conversation between them?
- Sometimes it is impossible or impractical to literally engage in conversation with others. But how can imagined participants in a conversation about acceptable risk impositions be given a voice? And what is the legitimising force of an imagined voice?
- What are open, inviting, reliable, and effective platforms where agents can gather, engage, and converse with each other?
- Is there a particular language in which participants can, or must, communicate?
- How can such communication take place? Is it only through words, or are there other – perhaps more comprehensive – ways of expression?

Accountability

- Are present accountability structures, i.e. structures through which people can hold others responsible, sufficiently effective and fair?

Distribution

- Are risk and safety things that, like justice, can be socially distributed within societies or other communities?

Goal

- What is the end goal of conversations about acceptable risk impositions?
- Who decides when this end goal has been reached?
- Should all stakeholders agree on the acceptable level of risk?
- How safe is safe enough?

Benefits and obligations

- If a risk imposition is expected to have significant benefits for the person on whom the risk is imposed, is one then ethically obliged to impose that risk?

- Can one be blamed or punished for refusing to take a chance, or being too risk averse?
- If risky actions have unexpected or unimagined benefits for a person, is that person then obliged to share their good fortune with the risk-imposer?

A final word, for now

I hope to have offered a convincing alternative account of the evaluation of risk impositions. The framework of virtuous, conversational, and threefold answerability combines different temporal perspectives, and therefore gives a broad range of ways in which one can be, can be held, and hold others responsible for actions that expose others to risk. First, a backward-looking perspective enables one to hold others accountable, to assign blame and liability for harms done, as well as to react sensibly and appropriately to what has happened. Second, a present-focused perspective helps one assess, deal with, and respond to risks and harms here and now. And third, a forward-looking perspective focuses on imagining, preventing, or justifying future risks, and enables one to responsibly manage possible outcomes. I hope that such a broad understanding of responsibility will motivate people to be answerable for past events, current affairs, and prospective developments. I hope it will aid people to make better, wiser, more humane, and defensible choices in the face of uncertainty. But most of all, I hope it will inspire people to work together toward a future they want to live in.

BIBLIOGRAPHY

- Adam, B. & Groves, C. 2011. Futures Tended: Care and Future-Oriented Responsibility. *Bulletin of Science, Technology & Society*, 31(1):17-27.
- Adams, J. G. D. 1985. *Risk and Freedom: The Record of Road Safety Regulation*. Cardiff: Transport Publishing Projects.
- 1995. *Risk*. London & New York: Taylor & Francis.
- 1999. Risk, Freedom and Responsibility. *The Risk of Freedom: Individual Liberty and the Modern World*. London: Institute of United States Studies, University of London. 33-58.
- 2002. *Risk*. London & New York: Taylor & Francis.
- Ahmad, A. S., Ormiston-Smith, N. & Sasieni, P. D. 2015. Trends in the lifetime risk of developing cancer in Great Britain: comparison of risk for those born from 1930 to 1960. *British Journal of Cancer*, 112(5):943-947.
- Altham, J. E. J. 1984. Ethics of Risk. *Proceedings of the Aristotelian Society, New Series*, 84:15-29.
- Althor, G., Watson, J. E. M. & Fuller, R. A. 2015. Global mismatch between greenhouse gas emissions and the burden of climate change. *Nature, Scientific Reports*, 6(20281):1-6, doi: 10.1038/srep20281
- American Heritage Dictionary of the English Language* [Online]. [n. d.] Boston: Houghton Mifflin. S. v. 'harm, n.'. Available: <https://ahdictionary.com/word/search.html?q=harm&submit.x=0&submit.y=0> [2016, July 13].
- Amy, L. E. 2015. Trajectories of Containment: From Cold War and Neocolonial Landscapes to Surveillance in the War on Terror World – Case Study from Albania. Conference presentation delivered at International Tübingen Symposium on Ethics: The Value of [In]Security [2015, July 29].
- Annas, J. 2011. *Intelligent Virtue*. Oxford & New York: Oxford University Press.
- Anscombe, G. E. M. 1957. *Intention*. Oxford: Blackwell Publishing Ltd.
- Aradau, C. & Van Munster, R. 2007. Governing Terrorism Through Risk: Taking Precautions, (un)Knowing the Future. *European Journal of International Relations*, 13(1):89-115.

- Arendt, H. 1959. *Between Past and Future: Eight Exercises in Political Thought*. New York: Penguin.
- Aristotle. 2000. *Aristotle. Nicomachean Ethics*. R. Crisp (tr. & ed.). Cambridge: Cambridge University Press.
- 2011. *Aristotle's Nicomachean Ethics*. R. C. Bartlett & S. D. Collins (tr. & ed.). Chicago: University of Chicago Press.
- 2013. *Aristotle's Politics*. 2nd edn. C. Lord (tr.). Chicago: University of Chicago Press.
- Ashford, E. (2003). The Demandingness of Scanlon's Contractualism. *Ethics*, 113(2):273–302.
- Ashford, E. & Mulgan, T. 2012. Contractualism, in *Stanford Encyclopedia of Philosophy*, Fall. Edited by E. N. Zalta. Available: <http://plato.stanford.edu/archives/fall2012/entries/contractualism/> [2015, June 1].
- Asveld, L. & Roeser, S. (eds.). 2009. *The Ethics of Technological Risk*. London & Sterling: Earthscan.
- Athanassoulis, N. & Ross, A. 2010. A Virtue Ethical Account of Making Decisions about Risk. *Journal of Risk Research*, 13(2):217-230. Reprinted as: Risk and Virtue Ethics, in S. Roeser, R. Hillerbrand, P. Sandin & M. Peterson (eds.). *Handbook of Risk Theory: Epistemology, Decision Theory, Ethics, and Social Implications of Risk*, vol. 2. Berlin, Heidelberg, Dordrecht & New York: Springer Science+Business Media. 833-856.
- Aven, T. 2007. On the ethical justification for the use of risk acceptance criteria. *Risk Analysis*, 27(2):303-312.
- 2014. *Risks, Surprises and Black Swans: Fundamental ideas and concepts in risk assessment and risk management*. London & New York: Routledge.
- Aven, T. & Renn, O. 2009. On risk defined as an event where the outcome is uncertain. *Journal of Risk Research*, 12(1):1-11.
- Axinn, S. 1966. Fallacy of the single risk. *Philosophy of Science*, 33(1/2):154-162.
- Ball, P. 2011. *Unnatural: The Heretical Idea of Making People*. London: The Bodley Head, Random House.
- Bardach, E. & Kagan, R. A. 2010. *Going by the Book: The Problem of Regulatory Unreasonableness*. New Brunswick: Transaction Publishers.
- Bauman, Z. 1993. *Postmodern Ethics*. Oxford: Blackwell Publishing Ltd.

- Bazelon, D. L. 1979. Risk and Responsibility. *American Bar Association Journal*, 65: 1066-1069.
- BBC News [Online]. 25 April 2010. Stephen Hawking warns over making contact with aliens. *BBC News*. Available: <http://news.bbc.co.uk/2/hi/8642558.stm> [2016, December 14]
- Beattie, A. (2017). *J.D. Rockefeller: From Oil Baron To Billionaire*. Available: <http://www.investopedia.com/articles/economics/08/jd-rockefeller.asp> [2014, September 15].
- Beauchamp, T. L. & Childress, J. F. 2001. *Principles of Biomedical Ethics*. 5th edn. Oxford & New York: Oxford University Press.
- 2009. *Principles of Biomedical Ethics*. 6th edn. Oxford & New York: Oxford University Press.
- Beck, U. 1992. *Risk Society: Towards a New Modernity*. London, Thousand Oaks, New Delhi & Singapore: Sage Publications.
- Bennis, W. M., Medin, D. L. & Bartels, D. M. 2010. The costs and benefits of calculation and moral rules. *Perspectives on Psychological Science*, 5:187-202.
- Bentham, J. 1970. *The Collected Works of Jeremy Bentham: An Introduction to the Principles of Morals and Legislation*. Burns, J. H. & Hart, H. L. A. (eds.). Oxford & New York: Oxford University Press.
- Bernstein, P. L. 1996. *Against the Gods: The Remarkable Story of Risk*. Hoboken: John Wiley & Sons.
- Bernstein, R. J. (1986). *Philosophical Profiles: Essays in a Pragmatic Mode*. Philadelphia: University of Pennsylvania Press.
- Better Regulation Commission. 2006. *Risk, Responsibility and Regulation: Who's risk is it anyway?* London: Better Regulation Commission. Available: http://webarchive.nationalarchives.gov.uk/20100402230200/http://archive.cabinetoffice.gov.uk/brc/upload/assets/www.brc.gov.uk/risk_res_reg.pdf [2015, February 17].
- Binmore, K. 2008. *Rational Decisions*. Princeton: Princeton University Press.
- Bijloos, A. D. 2015. Unknown Risks, Consent and Trust: Making Informed Consent Possible under Uncertainty. Unpublished paper presented at The Philosophy of Risk Doctoral Course. 2-6 November 2015, Eindhoven.

- Blomquist, G. C. 2015. Economics of Value of Life. In J. D. Wright (editor in chief), *International Encyclopedia of the Social & Behavioral Sciences*, 2nd edn. New York: Elsevier Ltd.
- Bolatito Asiata, L. A. 2010. Technology, individual rights and the ethical evaluation of risk. *Journal of Information, Communication & Ethics in Society* 8(4):308-322.
- Bollig, M. 2006. *Risk Management in a Hazardous Environment: A Comparative Study of Two Pastoral Societies*. Berlin, Heidelberg, Dordrecht & New York: Springer Science+Business Media.
- 2012. Social-ecological Change and the Changing Structure of Risk and Risk Management in a Pastoral Community in Northwestern Namibia, in L. Bloemertz, M. Doevenspeck, E. Macamo & D. Müller-Mahn (eds.). *Risk and Africa: Multi-disciplinary Empirical Approaches*. Münster: LIT Verlag. 107-134.
- Bolt, R. 2013. *A Man for All Seasons: A Play of Sir Thomas More*. London & New York: Bloomsbury Methuen Drama.
- Bortolotti, L. 2015. *Irrationality*. Cambridge & Malden: Polity Press.
- Brännmark, J. & Sahlin, N. E. 2010. Ethical theory and the philosophy of risk: first thoughts. *Journal of Risk Research*, 13(2):149-161.
- Calabresi, M. 2015. Homeland security, ISIS and the fight against fear: Jeh Johnson sees the war on terror come home. *Time Magazine*, 186(27-28):24–6, 21 December.
- Cambridge Dictionary* [Online]. [n. d.]. Cambridge: Cambridge University Press.
- S. v. ‘adventure, n.’. Available: <http://dictionary.cambridge.org/dictionary/english/adventure> [2016, July 18].
- S. v. ‘harm, n.’. Available: <http://dictionary.cambridge.org/dictionary/english/harm> [2016, July 13].
- S. v. ‘nothing ventured, nothing gained, saying’. Available: <http://dictionary.cambridge.org/dictionary/english/nothing-ventured-nothing-gained?q=nothing+ventured%2C+nothing+gained> [2016, July 18].
- S. v. ‘risk, n.’. Available: <http://dictionary.cambridge.org/dictionary/english/risk> [2016, July 13].
- S. v. ‘safety, n.’. Available: <http://dictionary.cambridge.org/dictionary/english/safety> [2016, July 14].
- S. v. ‘security, n.’. Available:

- <http://dictionary.cambridge.org/dictionary/english/security> [2016, July 14].
- S. v. 'virtue, n.'. Available:
<http://dictionary.cambridge.org/dictionary/english/virtue> [2017, March 9].
- Caron, F. (2013). *Managing the Continuum: Certainty, Uncertainty, Unpredictability in Large Engineering Projects*, in B. Pernici, S. Della Torre, B. M. Colosimo, T. Faravelli, R. Paolucci, & S. Piardi (eds.). *PoliMI SpringerBriefs in Applied Sciences and Technology*. Berlin, Heidelberg, Dordrecht & New York: Springer Science+Business Media.
- Chernow, R. 2004. *Titan: The Life of J. D. Rockefeller, Sr.* New York: Vintage Books.
- Chesterton, G. K. 1909. *Orthodoxy*. New York: John Lane Company.
- Cicero, M. T. 1949. De Inventione, II. M. H. Hubbell (tr.). In J. Henderson (ed.). *De Inventione: De Optimo Genere Oratorum: Topica*. Cambridge: Harvard University Press.
- Cline, P. 2003. Re-examining the Risk Paradox. Unpublished paper presented at the Wilderness Risk Management Conference. 1-3 October 2014, Atlanta. Available:
https://www.outdoored.com/sites/default/files/documents/files/wrmc_proceedings_03_examining_cline.pdf [2014, December 3].
- 2004. The Etymology of Risk. Working Paper. Cambridge: Harvard Education Graduate School of Education. Available:
<https://pdfs.semanticscholar.org/8a5d/1922641aaa6fc1f9577a864b31b51f5034b5.pdf> [2014, December 3].
- Cohen, J. & Christensen, I. 1970. *Information and Choice*. Edinburgh: Oliver & Boyd.
- Couto, R. A. 2010. Decision Making, in R. A. Couto (ed.). *Political and Civic Leadership: A Reference Handbook*. London, Thousand Oaks, New Delhi & Singapore: Sage Publications. 956-965.
- Crandall, B. & Getchell-Reiter, K. 1993. Critical decision method: a technique for eliciting concrete assessment indicators from the intuition of NICU nurses. *Advances in Nursing Science*, 16(1):42-51.
- Cranor, C. 1990. Some moral issues in risk assessment. *Ethics*, 101(1):123-143.
- 1997. A Philosophy of Risk Assessment and the Law: A Case Study of the Role of Philosophy in Public Policy. *Philosophical Studies*, 85:135-162.

- . 2009. A Plea for a Rich Conception of Risks, in L. Asveld & S. Roeser (eds.). *The Ethics of Technological Risk*, R. E. Löfstedt (ed.). *Risk, Society, and Policy Series*. London & Sterling: Earthscan. 27-39.
- Crickette, G., Demian, R., Fox, C., Hach, J., Makomaski, J., Mazumdar, R. & Weston, G. 2012. Exploring Risk Appetite and Risk Tolerance: The Risk Perspective, in M. O'Rourke (ed.). *Risk & Insurance Management Society Executive Report*. New York: RIMS Inc.
- Damásio, A. 1994. *Descartes' Error: Emotion, Reason, and the Human Brain*. New York: G. P. Putnam's Sons.
- Dickenson, D. 2003. *Risk and Luck in Medical Ethics*. Cambridge & Malden: Polity Press.
- Diez, F. 1853. *Etymologisches Wörterbuch der Romanischen Sprachen*. Bonn: Bei Adolph Marcus.
- Dobson M. S. & Dobson, D. S. 2011. *Managing Multiple Projects*. New York: AMACOM, American Management Association International.
- Doom, N. 2015. The Blind Spot in Risk Ethics: Managing Natural Hazards. *Risk Analysis*, 35(3):354-360.
- Douglas, M. & Wildavsky, A. 1983. *Risk and Culture: An Essay on the Selection of Technological and Environmental Dangers*. Berkeley & Los Angeles: University of California Press.
- Douglas, M. 1992. *Risk and Blame: Essays in Culture Theory*. London & New York: Routledge.
- Earle, T. C., Siegrist, M. & Gutscher, H. 2007. Trust, Risk Perception and the TCC Model of Cooperation, in M. Siegrist, T. C. Earle & H. Gutscher (eds.). *Trust in Cooperative Risk Management: Uncertainty and Scepticism in the Public Mind*. London & Sterling: Earthscan. 1-49.
- Eichstaedt, P. 2011. *Consuming the Congo: War and Conflict Minerals in the World's Deadliest Place*. Chicago: Lawrence Hill Books.
- Ekberg, M. 2007. The Parameters of the Risk Society: A Review and Exploration. *Current Sociology*, 55(3):343-366.
- Elliot, C. & Taig, T. 2003. *Ethical Basis of Rail Safety Decisions*. T230a Report. London: UK Rail Safety and Standards Board.
- Elliott, K. 2016. TPP Risks and TTIP Opportunities: Rules of Origin, Trade Diversion, and Developing Countries. *CGD Policy Paper 078*. Washington: Center for

- Global Development. Available: <https://www.cgdev.org/sites/default/files/CGD-Policy-Paper-Elliott-TPP-TTIP-Rules-of-Origin.pdf> [2016, May 18].
- Emblemsvåg, J. 2003. *Life-Cycle Costing: Using Activity-Based Costing and Monte Carlo Methods to Measure Future Costs and Risk*. Hoboken: John Wiley & Sons.
- Éntrelle, P. 2008. *Windows and Doors*. Bloomington: Xlibris Corporation.
- Ersdal, G. & Aven, T. 2008. Risk informed decision-making and its ethical basis. *Reliability Engineering and System Safety*, 93:197-205.
- Espinoza, N. & Peterson, M. 2012. Risk and mid-level moral principles. *Bioethics*, 26(1):8-14.
- Etymology Dictionary [Online]. [n. d.]. S. v. 'adventure, n.'. Available: http://www.etymonline.com/index.php?term=adventure&allowed_in_frame=0 [2016, July 18].
- European Commission. 2000. *First Report on the Harmonisation of Risk Assessment Procedures*. [Brussels]: EU Health and Consumer Protection Directorate General, Directorate C, Scientific Opinions.
- European Medicines Agency. 2005. *Action Plan to Further Progress the European Risk Management Strategy*. Doc. ref. EMEA/115906/2005/Final. Available: http://www.ema.europa.eu/docs/en_GB/document_library/Other/2009/10/WC500006306.pdf [2016, February 16].
- Everitt, B. 2008. *Chance Rules: An Informal Guide to Probability, Risk and Statistics*. Berlin, Heidelberg, Dordrecht & New York: Springer Science+Business Media.
- Fahlquist, J. N. 2008. Moral Responsibility for Environmental Problems: Individual or Institutional? *Journal of Agricultural and Environmental Ethics*, 22(2):109-124.
- Fay, B. 1987. *Critical Social Science: Liberation and its Limits*. Cambridge & Malden: Polity Press.
- Feinberg, J. 1980. *Rights, Justice, and the Bounds of Liberty: Essays in Social Philosophy*. Princeton: Princeton University Press.
- 1984. Harm to Others. Vol. 1 in *The Moral Limits of the Criminal Law*. Oxford & New York: Oxford University Press.
- Ferrari, A. & Marin, F. 2014. Responsibility and Visions in the New and Emerging Technologies, in S. Arnaldi, A. Ferrari, P. Magguda & F. Marin (eds.). *Responsibility in Nanotechnology Development*. Berlin, Heidelberg, Dordrecht & New York: Springer Science+Business Media. 21-36.

- Fingarette, H. 1967. *On responsibility*. New York: Basic Books.
- Finkelstein, C. 2003. Is Risk a Harm? *University of Pennsylvania Law Review*, 151(3):963-1001.
- Fleischhut, N. 2013. Moral Judgment and Decision Making under Uncertainty. Unpublished doctoral dissertation. Berlin: Humboldt-Universität zu Berlin.
- Fleischner, N. [Online]. 5 November 2015. 6 Surprisingly Dangerous Jobs Worldwide. When High Risk Don't Mean Higher Pay. *Global Citizen*. Available: <https://www.globalcitizen.org/en/content/6-surprisingly-dangerous-jobs-worldwide/> [2017, April 24].
- Fletcher, G. P. 1972. Fairness and Utility in Tort Theory. *Harvard Law Review*, 85(3):537-573.
- Fleurbaey, M. & Voorhoeve, A. 2013. Decide as You Would with Full Information! An Argument against ex ante Pareto, in N. Eyal, S. Hurst, O. Norheim & D. Wilker (eds.) *Inequalities in Health: Concepts, Measures, and Ethics*. Oxford & New York: Oxford University Press. 113-128.
- Foot, P. 1967. The Problem of Abortion and the Doctrine of the Double Effect. *Oxford Review*, 5:5-15. Reprinted in: Foot, P. 2002. *Virtues and Vices and Other: Essays in Moral Philosophy*. Oxford: Clarendon Press. 19-32.
- Fox, N. 2000. Postmodern reflections on 'risk', 'hazards' and life choices, in D. Lupton (ed.). *Risk and Sociocultural Theory: New Directions and Perspectives*. Cambridge: Cambridge University Press. 12-33.
- Frankfurt, H. G. 1962. Philosophical Uncertainty. *Philosophical Review*, 71(3):303-327.
- Frick, J. 2015. Contractualism and Social Risk. *Philosophy and Public Affairs*, 43(3):175-223.
- Fridson, M. S. 2001. *How to be a Billionaire: Proven Strategies from the Titans of Wealth*. Hoboken: John Wiley & Sons.
- Fried, B. H. 2012a. The Limits of a Nonconsequentialist Approach to Torts. *Legal Theory*, 18(3):231-262.
- 2012b. Can Contractualism Save Us from Aggregation? *Journal of Ethics*, 16(1):39-66.
- 2016. Facing up to Risk. Stanford Public Law Working Paper no. 2850587. Available: <https://ssrn.com/abstract=2850587> [2016, October 20].
- Gadamer, H. G. 2013. *Truth and Method*. London & New York: Bloomsbury Academic.

- Garland, D. 2003. The Rise of Risk, in R. V. Ericson & A. Doyle (eds.). *Risk and Morality*. Toronto: University of Toronto Press. 48-86.
- Gauthier, D. 1986. *Morals by Agreement*. Oxford: Clarendon Press.
- Geale, S. K. 2012. The ethics of disaster management. *Disaster Prevention and Management*, 21(4):445-462.
- Gibson, M. (ed.). 1985. *To Breathe Freely*. Totowa: Rowman & Allanheld.
- Giddens, A. 1990. *The Consequences of Modernity*. Redwood City: Stanford University Press.
- Giddens, A. & Pierson, C. 1998. *Conversations with Anthony Giddens: Making Sense of Modernity*. Cambridge & Malden: Polity Press / Oxford: Blackwell Publishing Ltd.
- Gigerenzer, G. 2010. Moral satisficing: Rethinking moral behavior as bounded rationality. *Topics in Cognitive Science*, 2:528-554.
- Gigerenzer, G., Swijtink, Z., Porter, T., Daston, L., Beatty, J. & Krüger, L. 1989. *The Empire of Chance: How Probability Changes Science and Everyday Life*. New York: Cambridge University Press.
- Goldberg, J. C. P. & Zipursky, B. C. 2002. Unrealised Torts. *Virginia Law Review*, 88(8):1625-1719.
- Goldemberg, J. 2009. Nuclear energy in developing countries. On the Global Nuclear Future, vol. 1. *Daedalus, Journal of the American Academy of Arts & Sciences*. Cambridge: MIT Press. 71-80.
- Grove-White, R. & Szerszynsky, B. 1992. Getting Behind Environmental Ethics. *Environmental Ethics*, 1(4):285-296.
- Groves, C. 2009. Future Ethics: Risk, Care and Non-Reciprocal Responsibility. *Journal of Global Ethics*, 5(1):17-31.
- Hacking, I. 2003. Risk and Dirt, in R. V. Ericson & A. Doyle (eds.). *Risk and Morality*. Toronto: University of Toronto Press. 22-47.
- Hall, S. 2012. Harm and Enhancement: Philosophical and Ethical Perspectives. Unpublished doctoral dissertation. Available: <http://hdl.handle.net/10019.1/71893> [2014: June 2].
- Hallgarth, M. W. 1998. Consequentialism and Deontology, in R. Chadwick (editor in chief), *Encyclopedia of Applied Ethics*, vol. 2. London, Waltham & San Diego: Elsevier Academic Press. 602-613.

- Hamilton, A. 1787. The Consequences of Hostilities Between the States. The Federalist Papers 8, *The New York Packet*, 20 November 1787. Available: <http://www.constitution.org/fed/federa08.htm> [2014, September 7].
- Hamilton, J. 2015. Security: Politics, Humanity, and the Philology of Care. Conference presentation delivered at International Tübingen Symposium on Ethics: The Value of [In]Security [2015, July 28].
- Hansson, S. O. 1993. The False Promises of Risk Analysis. *Ratio*, 6:16-26.
- 2003a. Are Natural Risks More Dangerous Than Technological Ones? *Philosophia Naturalis*, 40:43-54.
- 2003b. Ethical Criteria for Risk Acceptance. *Erkenntnis*, 59(3):291-309.
- 2004a. Philosophical Perspectives on Risk. *Techné*, 8:10-34.
- 2004b. Weighing Risks and Benefits. *Topoi*, 23:145-152.
- 2006. Informed consent out of context. *Journal of Business Ethics*, 63(2):149-154.
- 2007a. Philosophical Problems in Cost-Benefit Analysis. *Economics and Philosophy*, 23(2):163-183.
- 2007b. Risk and Ethics: Three Approaches, in T. Lewens (ed.). *Risk: Philosophical Perspectives*. London & New York: Routledge.
- 2009. From the Casino to the Jungle: Dealing with Uncertainty in Technological Risk Management. *Synthese*, 168:423-432, doi:10.1007/s11229-008-9444-1
- 2013. *The Ethics of Risk: Ethical Analysis in an Uncertain World*. Basingstoke & New York: Palgrave Macmillan.
- 2014. Risk, in *Stanford Encyclopedia of Philosophy*, Spring. Edited by E. N. Zalta. Available: <http://plato.stanford.edu/archives/spr2014/entries/risk/> [2014, March 25].
- Hardin, G. 1974. Lifeboat Ethics: The Case Against Helping the Poor. *Psychology Today*: 800-812.
- Hart, H. 2008 [1968]. *Punishment and Responsibility: Essays in the Philosophy of Law*. Oxford & New York: Oxford University Press.
- Hasner, M. 2008. The Metaphysics of Harm. *Philosophy and Phenomenological Research*, LXXVII(2):421-450.
- Harsanyi, J. 1975. Can the Maximin Principle Serve as a Basis for Morality? A Critique of John Rawls's Theory. *American Political Science Review*, 95(2):594-605.

- Hayenhjelm, M. & Wolff, J. 2011. The Moral Problem of Risk Impositions: A Survey of the Literature. *European Journal of Philosophy*, 20(S1):e26–e51. Oxford: Blackwell Publishing Ltd.
- Hayenhjelm, M. 2012. What Is a Fair Distribution of Risk? in S. Roeser, R. Hillerbrand, P. Sandin & M. Peterson (eds.). *Handbook of Risk Theory: Epistemology, Decision Theory, Ethics, and Social Implications of Risk*, vol. 2. Berlin, Heidelberg, Dordrecht & New York: Springer Science+Business Media. 909-930.
- Helten, E. 1994. Die Erfassung und Messung des Risikos. Wiesbaden: Gabler Verlag.
- Hermansson, H. & Hansson, S. O. 2007. A Three-Party Model for Ethical Risk Analysis. *Risk Management*, 9(3):129-144.
- Hieronymi, P. 2014. Reflection and Responsibility. *Philosophy & Public Affairs*, 42(1):3-41.
- History. 2012. *The Men Who Built America: Rockefeller's Standard Oil*. [Television programme]. Available: <http://www.history.com/topics/john-d-rockefeller/videos/rockefellers-standard-oil> [2014, December 8].
- Hobbes, T. & Tuck, R. 2003 [1651]. *Leviathan*. Cambridge: Cambridge University Press.
- Hogan, D. E. & Lairet, J. R. 2007. Triage, in D. E. Hogan & J. L. Burstein (eds.). *Disaster Medicine*. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins. 12-28.
- Hoggett, P. 2005. Radical Uncertainty: Human Emotion and Ethical Dilemmas, in S. Watson & A. Moran (eds.). *Trust, Risk and Uncertainty*. Basingstoke & New York: Palgrave Macmillan. 13-25.
- Holy Bible, King James Version* [Online]. [n. d.]. Romans 3. Available: <https://www.biblegateway.com/passage/?search=romans+3&version=KJV> [2016, December 15].
- Hunt, A. 2003. Risk and Moralization in Everyday Life, in R. V. Ericson & A. Doyle (eds.). *Risk and Morality*. Toronto: University of Toronto Press. 165-192.
- Hurlbut, W. B. 2011. The Boundaries of Humanity: The Ethics of Human-Animal Chimeras in Cloning and Stem Cell Research, in A. Suarez & J. Huarte (eds.). *Is this Cell a Human Being? Exploring the Status of Embryos, Stem Cells and Human-Animal Hybrids.*, Berlin, Heidelberg, Dordrecht & New York: Springer Science+Business Media. 157-170.

- Hyne, N. J. 2014. *Dictionary of Petroleum Exploration, Drilling & Production*. 2nd edn. Tulsa: PennWell Corporation.
- Icheku, V. 2011. *Understanding Ethics and Ethical Decision-Making: Case Studies and Discussions*. Bloomington: Xlibris Publishing.
- Ingle, D. J. 1968. Uncertainty as a parameter of ethics. *Zygon: Journal of Religion and Science*, 3(3):323-334.
- Inglis, K. 2014. Philosophical Virtue: In Defense of the Grand End, in R. Polansky (ed.). *The Cambridge Companion to Aristotle's Nicomachean Ethics*. New York: Cambridge University Press. 263–287.
- Institute of Risk Management. 2002. *A Risk Management Standard*. London: Institute of Risk Management. Available: https://www.theirm.org/media/886059/ARMS_2002_IRM.pdf [2015, March 3].
- James, A. 2012. Contractualism's (Not So) Slippery Slope. *Legal Theory*, 18(3):263-292.
- Johnson, D. 2005. Responsibility: Anglo-American perspectives, in C. Mitcham (ed.), *Encyclopedia of Science, Technology, and Ethics*. Farmington Hills: Gale. 1616-1618.
- Jonas, H. 1974. *Philosophical Essays: From Ancient Creed to Technological Man*. Chicago: University of Chicago Press.
- 1979. *Das Prinzip Verantwortung: Versuch einer Ethik für die Technologische Zivilisation*. Frankfurt am Main: Suhrkamp Verlag.
- 1984. *The Imperative of Responsibility: In Search of an Ethics for the Technological Age*. Chicago: University of Chicago Press.
- Jüngermann, H. & Slovic, P. 1993. Die Psychologie der Kognition und Evaluation von Risiko, in G. Bechmann (ed.). *Risiko und Gesellschaft: Grundlagen und Ergebnisse interdisziplinärer Risikoforschung*. Opladen: Westdeutscher Verlag. 177-208.
- Kamm, F. M. 2007. *Intricate Ethics*. Cambridge: Harvard University Press.
- Kahneman, D. 2011. *Thinking, Fast and Slow*. New York: Farrar, Straus and Giroux.
- Kandel, E. & Schwartz, J. 2013. *Principles of Neural Science*. 5th edn. New York: McGraw Hill.
- Kant, I. 1996. Groundwork of the Metaphysics of Morals, in M. Gregor (tr.). *Immanuel Kant: Practical Philosophy*. Cambridge: Cambridge University Press.
- Kaplan, S. 1997. The Words of Risk Analysis. *Risk Analysis*, 17(4):407-417.

- Kermisch, C. 2010. Risk and Responsibility: A Complex and Evolving Relationship. *Science and Engineering Ethics*, 18:91-102.
- Kierkegaard, S. 2003. *The Soul of Kierkegaard: Selections from His Journals*, in A. Dru (ed.). Mineola: Dover Publications, Inc.
- Kitula King'ei, G. 1992. *Language, Culture and Communication: The Role of Swahili Taarab Songs in Kenya, 1963–1990*. Washington: Howard University Press.
- Kleinig, J. 2010. The Nature of Consent, in F.G. Miller & A. Wertheimer (eds.). *The Ethics of Consent: Theory and Practice*. Oxford & New York: Oxford University Press. 3-24.
- Knight, F. H. 1921. *Risk, Uncertainty and Profit*. New York: Sentry Press.
- Kumar, R. 2001. *Consensualism in Principle: On the Foundations of Non-Consequentialist Moral Reasoning*. London & New York: Routledge.
- Kydd, A. H. 2005. *Trust and Mistrust in International Relations*. Princeton: Princeton University Press.
- Ladd, J. 1991. Bhopal: An Essay on Moral Responsibility and Civic Virtue. *Journal of Social Philosophy*, 22(1):73-91.
- Landesman, F. 2004. *The John Wayne Filmography*. Jefferson & London: McFarland & Company.
- Ledilow, L. & Carr, S. 1997. How biotechnology regulation sets a risk/ethics boundary. *Agriculture and Human Values*, 14: 29-43.
- Lee, H., Song, R. & Shin, H. 2001. Caregiver Burnout, in M. D. Mezey (ed.), *The Encyclopedia of Elder Care: The Comprehensive Resource on Geriatric and Social Care*. New York: Springer Publishing Company. 114-116.
- Lenman, J. 2008. Contractualism and Risk Imposition. *Politics, Philosophy and Economics*, 7(1):99-122.
- Levinas E. 1985. *Ethics and Infinity*. Pittsburgh: Duquesne University Press.
- Lewens, T. (ed.). 2007. *Risk: Philosophical Perspectives*. London & New York: Routledge.
- Lindley, D. V. 2006. *Understanding Uncertainty*. Hoboken: John Wiley & Sons.
- Lippert-Rasmussen, K. 2005. Frankfurt, Responsibility, and Reflexivity. *Philosophia*, 31(1-4):369-382.
- Little, H. & Wyver, S. 2008. Outdoor play: Does avoiding the risks reduce the benefits? *Australian Journal of Early Childhood*, 33(2):33-40.

- Liuzzo, G., Bentley, S., Giacometti, F., Bonfante, E. & Serraino, A. 2014. The term risk: etymology, legal definition and various traits. *Italian Journal of Food Safety*, 3(2269):36-39.
- Locke, J. 2004 [1960]. *The Second Treatise of Government*. New York: Barnes & Noble Publishing Inc.
- Longman Dictionary of Contemporary English [Online]. [n. d.]. Harlow: Longman Pearson. S. v. 'harm, n.'. Available: <http://www.ldoceonline.com/dictionary/harm> [2016, July 13].
- S. v. 'adventure, n.'. Available: <http://www.ldoceonline.com/dictionary/adventure> [2016, July 18].
- Luce, R. D. & Raiffa, H. 1957. *Games and Decisions: Introduction and Critical Survey*. North Chelmsford: Courier Corporation.
- Luhmann, N. 1979. *Trust and Power*. Hoboken: John Wiley & Sons.
- 1993. *Risk: A Sociological Theory*. New York: A. De Gruyter.
- 1996. *Modern Society Shocked by its Risks*. Occasional Papers 17:3-19. Hong Kong: University of Hong Kong, Social Sciences Research Centre & Department of Sociology. Available: <http://hub.hku.hk/handle/10722/42552> [2014, May 15].
- 2000. Familiarity, Confidence, Trust: Problems and Alternatives, in D. Gambetta (ed.). *Trust: Making and Breaking Cooperative Relations*. Oxford University, Department of Sociology. 94-107. Available: <http://www.sociology.ox.ac.uk/papers/luhmann94-107.pdf> [2015, March 10].
- Luntley, M. 2003. Ethics in the face of uncertainty: judgement not rules. *Business Ethics: A European Review*, 12(4):325-333.
- Lupton, D. (ed.). 1999a. *Risk and Sociocultural Theory: New Directions and Perspectives*. New York: Cambridge University Press.
- 1999b. *Risk*. Hove: Psychology Press.
- 2013. Risk and emotion: towards an alternative theoretical perspective. *Health, Risk & Society*, 15(8):634-647.
- Macamo, E. 2012. Conclusion, in L. Bloemertz, M. Doevenspeck, E. Macamo & D. Müller-Mahn (eds.). *Risk and Africa: Multi-disciplinary Empirical Approaches*. 107-134. Münster: LIT Verlag.
- Mackie, J.L. 1989. For right-based morality, in L.P. Pojman (ed.). *Ethical Theory: Classical and Contemporary Readings*. Beverly: Wadsworth. 638-646.

- MacLean, D. (ed.). 1986. *Values at Risk*. Totowa: Rowman & Allanheld.
- . 2012. Ethics and Risk, in S. Roeser, R. Hillerbrand, P. Sandin & M. Peterson (eds.). *Handbook of Risk Theory: Epistemology, Decision Theory, Ethics, and Social Implications of Risk*, vol. 2. Berlin, Heidelberg, Dordrecht & New York: Springer Science+Business Media. 791-804.
- Macquarrie, J. 1973. *Existentialism*. London: Pelican Books.
- Magnússon, E. 1874. *On sk and sh in English Terminations / On Love, as a Scoring Term*. Cambridge: Cambridge University Press.
- Maritain, J. 1943. *The Rights of Man and Natural Law*. New York: Charles Scribner's Sons.
- McCarthy, D. 1997. Rights, Explanation, and Risks. *Ethics*, 107(2):205-225.
- McGregor, R. [Online]. 10 June 2011. Zhou's cryptic caution lost in translation. *Financial Times*. Available: <https://www.ft.com/content/74916db6-938d-11e0-922e-00144feab49a> [2016, December 14].
- McKenna, M. 2012. *Conversation and Responsibility*. Oxford & New York: Oxford University Press.
- Mercantini, J. M. 2015. Introduction, in J. M. Mercantini & C. Faucher (eds.). *Risk and Cognition*. Berlin, Heidelberg, Dordrecht & New York: Springer Science+Business Media. 1-17.
- Miles, J. C. & Priest, S. (eds.). 1990. *Adventure Education*. State College: Venture Publishing Inc.
- Mill, J. S. 1867. Utilitarianism. 3rd edn. London: Longmans, Green, Reader & Dyer.
- Millet, L. 1962. Man and risk. *International Philosophical Quarterly*, 2(3):417-427.
- Mills, C. 1985. Air Pollution: The Role and Limits of Consent. *Centre for Philosophy & Public Policy Report*, 5(3):1-5.
- Montpetit, E. 2003. *Misplaced Distrust: Policy Networks and the Environment in France, the United States, and Canada*. Vancouver: UBC Press.
- Moolman, V. [Online]. 22 April 2016. Excessive water restrictions impact on sewage treatment systems. *Engineering News*. Available: http://www.engineeringnews.co.za/article/excessive-water-restrictions-might-impact-sewerage-and-sewage-treatment-systems-2016-04-22/rep_id:4136 [2016, November 30].
- Moore, G. E. 1912. *Ethics*. Oxford & New York: Oxford University Press.
- Morton, A. 2013. *Emotion and Imagination*. Cambridge & Malden: Polity Press.

- Moseley, A. 2016. Political Philosophy, in *The Internet Encyclopedia of Philosophy* [Electronic]. Available: <http://www.iep.utm.edu/polphil/> [2016, May 31].
- Muller, M. [Online]. 22 January 2016. A sunshade to help southern Africa cope with climate change? *The Conversation*. Available: <https://theconversation.com/a-sunshade-to-help-southern-africa-cope-with-climate-change-53452> [2016, October 19].
- Munoz-Dardé, V. (in press). Conversations with a Flattened Amish Farmer: Risk and Reasonable Rejection, in *Bound Together: How the Political is Personal*.
- Munthe, C. 2015. Precautionary Principle, in *Encyclopedia of Global Bioethics*. Berlin, Heidelberg, Dordrecht & New York: Springer Science+Business Media.
- Nagel, T. 1970. *The Possibility of Altruism*. Princeton: Princeton University Press.
- 1979. War and Massacre, in *Mortal Questions*. Cambridge: Cambridge University Press. 53-74.
- Natalier, K. & Willis, K. 2008. Taking responsibility or averting risk? A socio-cultural approach to risk and trust in private health insurance decisions. *Health, Risk & Society*, 10(4):399-411.
- National Research Council 1983. *Risk Assessment in the Federal Government: Managing the Process*. Washington: National Academy Press.
- Nelson, J. 2011. *Before They Pass Away*. Am Selder: teNeueus Publishing Group.
- Nickel, P. & Vaesen, K. 2012. Risk and Trust, in S. Roeser, R. Hillerbrand, P. Sandin & M. Peterson (eds.). *Handbook of Risk Theory: Epistemology, Decision Theory, Ethics, and Social Implications of Risk*, vol. 2. Berlin, Heidelberg, Dordrecht & New York: Springer Science+Business Media. 858-876.
- Nickel, P. n. d. Consent in social experimentation. Working paper. Eindhoven: Eindhoven University of Technology. 1-19.
- Nihlén Fahlquist, J. 2015. Responsibility as a Virtue and the Problem of Many Hands, in I. Van de Poel, L. Royakkers & S. D. Zwart (eds.). *Moral Responsibility and the Problem of Many Hands*, no. 29, *Routledge Studies of Ethics and Moral Theory*. London & New York: Routledge.
- Noddings, N. 2002. *Starting at Home: Caring and Social Policy*. Berkeley & Los Angeles: University of California Press.
- Norcross, A. 2002. Contractualism and Aggregation. *Social Theory and Practice*, 28(2):303-314.

- Nouvel, P. 2015. A Scale and a Paradigmatic Framework for Human Enhancement, in S. Bateman, J. Gayon, S. Allouche, J. Gofette & M. Marzano (eds.). *Inquiring into Human Enhancement: Interdisciplinary and International Perspectives*. Basingstoke & New York: Palgrave Macmillan. 103-118.
- Nozick, R. 1974. *Anarchy, State, and Utopia*. New York: Basic Books.
- Oberdiek, J. 2009. Towards a Right Against Risking. *Law and Philosophy*, 28(4):367-392.
- 2012. The Moral Significance of Risking. *Legal Theory*, 18(3):339-356.
- 2014. Structure and Justification in Contractualist Tort Theory, in J. Oberdiek (ed.). *Philosophical Foundations of The Law of Torts*. Oxford & New York: Oxford University Press. 103-121.
- O'Malley, P. 2000. Uncertain subjects: risks, liberalism and contract. *Economy and Society*, 29(4):460-484.
- O'Neill, O. 2002. *Autonomy and Trust in Bioethics*. Cambridge: Cambridge University Press.
- 2015. Taking a Practical View of Trust. Conference presentation delivered at International Tübingen Symposium on Ethics: The Value of [In]Security [2015, July 30].
- Oxford Living English Dictionary* [Online]. [n. d.]. Oxford & New York: Oxford University Press.
- S. v. 'risk, n.'. Available: <https://en.oxforddictionaries.com/definition/risk> [2014, December 15].
- S. v. 'trust, n.'. Available: <https://en.oxforddictionaries.com/definition/trust> [2016, July 21].
- S. v. 'responsible, adj.'. Available: <https://en.oxforddictionaries.com/definition/responsible> [2016, December 9].
- Oxford English Dictionary* [Online]. [n. d.]. Oxford & New York: Oxford University Press.
- S. v. 'risk, n.'. Available: <http://www.oed.com/view/Entry/166306?rskey=wpIGK1&result=1#eid> [2014: December 15].
- S. v. 'safety, n.'. Available: <http://www.oed.com/view/Entry/169687?rskey=Qvyd1k&result=1#eid> [2016: July 14].

S. v. 'security, n.' Available:
<http://www.oed.com/view/Entry/174661?redirectedFrom=security&> [2016: July 14].

S. v. 'adventure, n.' Available:
<http://www.oed.com/view/Entry/2923?result=1&rskey=qXZQtZ&> [2016: July 18].

Parfit, D. 1984. *Reasons and Persons*

— 2011. *On What Matters*. Vol. 1. Oxford & New York: Oxford University Press.

Pellizzoni, L. 2010. Risk and Responsibility in a Manufactured World. *Science & Engineering Ethics*, 16:463-648.

Perry, S. 1995. Risk, Harm, and Responsibility, in D. Owens (ed.). *Philosophical Foundations of Tort Law*. Oxford & New York: Oxford University Press.

— 2001. Responsibility for Outcomes, Risk, and the Law of Torts, in G. J. Postema (ed.). *Philosophy and the Law of Torts*. New York: Cambridge University Press. 72-130.

— 2007. Risk, Harm, Interests, and Rights, in T. Lewens (ed.). *Risk: Philosophical Perspectives*. London & New York: Routledge.

Poincaré, H. 1952. *Science and Hypothesis*. Mineola: Dover Publications.

Pojman, L. P. (ed.). 1989. *Ethical Theory: Classical and Contemporary Readings*. Beverly: Wadsworth.

Prior, A. N. 1956. Symposium: The consequences of actions, in *Proceedings of the Aristotelian Society, Supplementary Volumes, Dreams and Self-Knowledge*, no. 30. 91-99.

Rachels, J. & Rachels, S. (2010). *The Elements of Moral Philosophy*. 6th edn. New York: McGraw Hill.

Railton, P. 1985. Locke, Stock, and Peril: Natural Property Rights, Pollution, and Risk, in M. Gibson (ed.). *To Breathe Freely*. Totowa: Rowman & Allanheld. 89-123.

Rawls, J. 1971. *A Theory of Justice*. Cambridge: Harvard University Press.

Reibetanz Moreau, S. 1998. Contractualism and Aggregation. *Ethics*, 108:296-311.

Renn, O. 1992. Concepts of Risk: A Classification, in S. Krimsky & D. Golding (eds.). *Social Theories of Risk*. Westport: Praeger. 53-81.

— 2008. *Risk Governance: Coping with Uncertainty in a Complex World*. London & Sterling: Earthscan.

- Roeser, S. 2011. Moral Emotions as Guide to Acceptable Risk, in S. Roeser, R. Hillerbrand, P. Sandin & M. Peterson (eds.). *Handbook of Risk Theory: Epistemology, Decision Theory, Ethics, and Social Implications of Risk*, vol. 2. Berlin, Heidelberg, Dordrecht & New York: Springer Science+Business Media. 819-832.
- Ross, W. D. 1930. *The Right and the Good*. Indianapolis: Hackett Publishing Company.
- Rousseau, J. J. 2010 [1762]. *The Social Contract*. J. Bennett (ed.) Available: <http://www.earlymoderntexts.com/assets/pdfs/rousseau1762.pdf> [2015, May 30].
- Rosenberg, D. 1984. The Causal Connection in Mass Exposure Cases: A “Public Law” Vision of the Tort System. *Harvard Law Review*, 97(4):849-929.
- Said-Moorhouse, L. [Online]. 11 October 2016. Burning smartphones: why some catch fire and are you at risk? *CNN*. Available: <http://edition.cnn.com/2016/10/11/tech/samsung-note-7-fire-risks/> [2016, October 29].
- Santangelo, F. 2013. *Divination, Prediction and the End of the Roman Republic*. New York: Cambridge University Press.
- Sauer, G. L. 1982. Imposed Risk Controversies: A Critical Analysis. *Cato Journal*, 2(1):231-253.
- Scanlon, T. M. 1982. Contractualism and Utilitarianism, in B. Williams & A. Sen (eds.). *Utilitarianism and Beyond*. Cambridge: Cambridge University Press. 103-128.
- 1986. The Significance of Choice. *The Tanner Lectures on Human Values*. Oxford: Oxford University, Brasenose College. 151-216.
- 1998. *What We Owe to Each Other*. Cambridge: Harvard University Press.
- Scheffler, S. 1985. The Role of Consent in the Legitimation of Risky Activity, in M. Gibson (ed.). *To Breathe Freely*. Totowa: Rowman & Allanheld. 75-88.
- Schroeder, C. H. 1986. Rights against Risks. *Columbia Law Review*, 86(3):495-562.
- Servan-Schreiber, D. 2011. *Healing without Freud or Prozac: Natural approaches to curing stress, anxiety and depression*. London: Rodale & Pan Macmillan.
- Seznec, J. 1981. *The Survival of the Pagan Gods: The Mythological Tradition and Its Place in Renaissance Humanism and Art*, XXXVIII, *Bollingen Series*. Princeton: Princeton University Press.

- Shrader-Frechette, K. S. 1980. *Nuclear Power and Public Policy: The Social and Ethical Problems of Fission Technology*. Dordrecht: D. Reidel.
- 1985a. *Risk Analysis and Scientific Method*. Dordrecht: D. Reidel.
- 1985b. *Science Policy, Ethics, and Economic Methodology*. Dordrecht: D. Reidel.
- 1990. Perceived Risks Versus Actual Risks: Managing Hazards Through Negotiation. *Risk: Health, Safety & Environment*, 1(4):341-363.
- 1991. *Risk and Rationality*. Berkeley: University of California Press.
- 2002. *Environmental Justice*. Oxford & New York: Oxford University Press.
- 2010. Technology and Ethics, in C. Hanks (ed.). *Technology and Values: Essential Readings*. Oxford: Blackwell Publishing Ltd. 60-64.
- Siddiqui, A. R. 2010. *Qur'ānic Keywords*. Leicestershire: The Islamic Foundation.
- Simmons, A. J. 1979. *Moral Principles and Political Obligations*. Princeton: Princeton University Press.
- Singer, M. G. 1977. Actual Consequence Utilitarianism. *Mind*, 86(341):67-77.
- 1982. Incoherence, Inconsistency, and Moral Theory: More on Actual Consequence Utilitarianism. *Southern Journal of Philosophy*, 20(3):375-391.
- Singer, P. 1972. Famine, Affluence, and Morality. *Philosophy and Public Affairs*, 1(3):229-243.
- 2002. Achieving the Best Outcome. *Ethics & International Affairs*, 16(1):127-128.
- Sitkin, S. B. & Pablo, A. L. 1992. Reconceptualizing the Determinants of Risk Behavior. *The Academy of Management Review*, 17(1):9-38.
- Skeat, W. 1888. *An Etymological Dictionary of the English Language*. Oxford: Clarendon Press.
- Slovic, P. 2000. The Perception of Risk, in P. Slovic (ed.). *Risk, Society, and Policy Series*. London & Sterling: Earthscan.
- Slovic, P., Finucane, M., Peters, E. & MacGregor, D. G. 2004. Risk as Analysis and Risk as Feelings: Some Thoughts about Affect, Reason, Risk, and Rationality. *Risk Analysis*, 24(2):311-322.
- Smith, A. M. 2008. Control, Responsibility, and Moral Assessment. *Philosophical Studies*, 138(3):367-392.
- Sollie, P. 2009. On uncertainty in ethics and technology, in P. Sollie & M. Düwell (eds.). *Evaluating New Technologies: Methodological Problems for the Ethical Assessment of Technology Developments*. Berlin, Heidelberg, Dordrecht & New York: Springer Science+Business Media. 141-158.

- Solon, O. [Online]. 13 September 2016. Samsung Galaxy Note 7 owners warned to stop using phones at risk of exploding. *The Guardian*. Available: <https://www.theguardian.com/technology/2016/sep/12/samsung-galaxy-note-7-safety-risk-explosion> [2016, October 29].
- Spiegelhalter, D. 2011. Quantifying Uncertainty, in L. Skinns, M. Scott & T. Cox (eds.). *Risk*. Cambridge: Cambridge University Press. 17-33.
- Stout, L. A. 2011. Derivatives and the Legal Origin of the 2008 Credit Crisis. *Harvard Business Law Review*, 1:1-38.
- Stavridis, J. 2016. The foreign policy challenges that will fill President Trump's inbox. *Time Magazine*, 188(22-23): 16, 17 November.
- Stocker, M. (1976). The Schizophrenia of Modern Ethical Theories. *Journal of Philosophy*, 73: 453-466.
- Strawson, P. F. 1962. Freedom and Resentment. *Proceedings of the British Academy*, 48:1-25.
- Sumner, L. W. 2012. Rights, in D. Jeske & R. Fumerton (eds.). *Readings in Political Philosophy: Theory and Applications*. Ontario: Broadview Press. 357-371.
- Sunstein, C. R. 2002. *Risk and Reason: Safety, Law, and the Environment*. Cambridge: Cambridge University Press.
- 2005. *Laws of Fear: Beyond the Precautionary Principle*. Cambridge: Cambridge University Press.
- Swanton, C. 2003. *Virtue Ethics: A Pluralistic View*. Oxford & New York: Oxford University Press.
- Taebi, B. 2016. Bridging the Gap between Social Acceptance and Ethical Acceptability. *Risk Analysis*. doi:10.1111/risa.12734.
- Taleb, N. 2007. *The Black Swan: The Impact of the Highly Improbable*. New York: Random House.
- Teuber, A. 1990. Justifying Risk. *Daedalus, Journal of the American Academy of Arts & Sciences*, 119(4): 235-254. Cambridge: MIT Press
- Thompson, D. F. 1980. Moral responsibility and public officials: The problem of many hands. *American Political Science Review*, 74(4):905-916.
- Thomson, J. J. 1971. A Defense of Abortion. *Philosophy & Public Affairs*, 1(1):47-66.
- 1976. Killing, Letting Die, and the Trolley Problem. *Monist, International Quarterly Journal of General Philosophical Inquiry*, 59(2):204-217.

- 1985. Imposing Risks, in M. Gibson (ed.). *To Breathe Freely*. Totowa: Rowman & Allanheld. Reprinted in: Thomson, J. J. 1986. *Rights, Restitution, & Risk: Essays in Moral Theory*. Cambridge: Harvard University Press.
- 1986. *Rights, Restitution, & Risk: Essays in Moral Theory*. Cambridge: Harvard University Press.
- 1990. *The Realm of Rights*. Cambridge: Harvard University Press.
- 1991. Self-Defense. *Philosophy & Public Affairs*, 20(4):283-310.
- Tongazzini, N. A. 2013. Responsibility, in H. LaFollette (ed.). *The International Encyclopedia of Ethics*. Oxford: Blackwell Publishing Ltd. 4592-4602.
- Turoldo, F. 2010. Ethics of Responsibility in a Multicultural Context. *Perspectives in Biology and Medicine*, 53(2):174-185.
- UN General Assembly. 1948. *Universal Declaration of Human Rights: 217 A (III)*. New York: UN General Assembly. Available: <http://www.un.org/en/universal-declaration-human-rights/> [2016, February 26].
- United States Nuclear Regulatory Commission. 2017. *Risk* [Online]. Available: <https://www.nrc.gov/reading-rm/basic-ref/glossary/risk.html> [2017, March 6].
- Uslaner, E. M. 2001. *The Moral Foundations of Trust*. Cambridge: Cambridge University Press.
- Van de Poel, I. & Fahlquist, J. N. 2012. Risk and Responsibility, on S. Roeser, R. Hillerbrand, P. Sandin, & M. Peterson (eds.). *Handbook of Risk Theory: Epistemology, Decision Theory, Ethics, and Social Implications of Risk*, vol. 2. Berlin, Heidelberg, Dordrecht & New York: Springer Science+Business Media. 877-907.
- Van de Poel, I., Nihlén Fahlquist, J. N., Doorn, N., Zwart, S. D. & Royakkers, L. 2012. The Problem of Many Hands: Climate Change as an Example. *Science and Engineering Ethics*, 18:49-67.
- Van de Poel, I., Royakkers, L. & Zwart, S. D. 2015. *Moral Responsibility and the Problem of Many Hands*, no. 29, *Routledge Studies of Ethics and Moral Theory*. London & New York: Routledge.
- Van Niekerk, A. A. & Nortjé, N. 2013. Phronesis and an Ethics of Responsibility. *South African Journal of Bioethics & Law*, 6(1):28-31.
- Vanem, E. 2012. Ethics and fundamental principles of risk acceptance criteria. *Safety Science*, 50(4):958-967.

- Verweij, M. 2015. How (Not) to Argue for the Rule of Rescue Claims of Individuals versus Group Solidarity, in I. Glen Gohen, N. Daniels & N. Eyal (eds.). *Identified versus Statistical Lives: An Interdisciplinary Perspective*. Oxford & New York: Oxford University Press. 137-149.
- Wallace, J. 2002. Scanlon's Contractualism. *Ethics*, 112(3):429-470.
- Watson, G. 1987. Responsibility and the Limits of Evil: Variations on a Strawsonian Theme, in F. Schoeman (ed.). *Responsibility, Character, and the Emotions: New Essays in Moral Psychology*. Cambridge: Cambridge University Press. 119-148. Reprinted in P. Russell & O. Deery (eds.). 2013. *The Philosophy of Free Will*. Oxford & New York: Oxford University Press. 84-113.
- Webb, S. A. 2006. *Social Work in a Risk Society: Social and Political Perspectives*. Basingstoke & New York: Palgrave Macmillan.
- Weber, M. 1946. Politics as Vocation, in H. H. Gerth & C. Wright Mills (trs. & eds.). *From Max Weber: Essays in Sociology*. Oxford & New York: Oxford University Press. 77-128.
- Webster's New World College Dictionary*. 1989. V. Neufeldt (ed.). S. v. 'risk'. New York: Simon & Schuster Inc.
- Weinhardt, C. & Bohnenberger, F. 2015. Regional trade agreements should allow an asymmetric opening. *Development & Cooperation*, e-Paper 8(2015): 34. Available: <https://www.dandc.eu/en/article/regional-trade-agreements-should-allow-asymmetric-opening> [2016: October 2].
- Westra, L. 2015. Environmental Risks, Rights, and the Failure of Liberal Democracy: Some Possible Remedies, in L. P. Pojman, P. Pojman & K. McShane (eds.). *Environmental Ethics: Readings in Theory and Application*. 7th edn. Boston: Cengage Learning. 349-367.
- Wilde, G. J. 1998. Risk Homeostasis Theory: An Overview. *Injury Prevention*, 4:89-91.
- Wilkinson, I. 2001. *Anxiety in a Risk Society*. London & New York: Routledge.
- Williams, B. 1973. A Critique of Utilitarianism, in J. J. C. Smart & B. Williams. *Utilitarianism: For and Against*. Cambridge: Cambridge University Press.
- 1981. *Moral Luck*. Cambridge: Cambridge University Press.
- Williams, G. 2008. Responsibility as a Virtue. *Ethical Theory and Moral Practice*, 11(4):455-470.

- Wilson, J. A. J. & Rahman, Z. A. 2014. Islamic perspectives on risk and insurance marketing, in T. Harrison & H. Estelami (eds.). *The Routledge Companion to Financial Services Marketing*. London & New York: Routledge. 411-422.
- Wood, E. 2013. *Play, Learning, and the Early Childhood Curriculum*. London, Thousand Oaks, New Delhi & Singapore: Sage Publications.
- Wolf, S. 1990. *Freedom within Reason*. Oxford & New York: Oxford University Press.
- Wolff, J. 2006. Risk, Fear, Blame, Shame and the Regulation of Public Safety. *Economics & Philosophy*, 22:409-427.
- World Bank. 2013. *Risk and Opportunity: Managing Risk for Development: World Development Report 2014*. Washington: World Bank.
- World Health Organization. 2004. *World report on road traffic injury prevention*. M. Peden, R. Scurfield, D. Sleet, D. Mohan, A. A. Hyder, E. Jarawan & C. Mathers (eds.). Geneva: WHO Press.
- 2006. *Road traffic injury prevention training manual*. D. Mohan, G. Tiwari, M. Khayesi & F. M. Nafukho (eds.). Geneva: WHO Press.
- Young, I. M. 2011. *Responsibility for Justice*. Oxford & New York: Oxford University Press.
- Zimmerman, M. J. 2006. Risk, Right, and Restitution. *Philosophical Studies*, 128:285-311.
- Zinn, J. O. 2008. Heading into the Unknown: Everyday Strategies for Managing Risk and Uncertainty. *Health, Risk & Society*, 10(5):439-450.

LIST OF TABLES AND FIGURES***Tables***

Table 1: Overview of five characteristics of risk and their keywords.	17
Table 2: Expected (dis)utility calculations of teacher's alternatives.	79
Table 3: Expected utility calculations of mountaineer's alternatives.	88
Table 4: Overview of ethical perspectives, considerations, and questions relevant for the evaluation of risk impositions.	182
Table 5: Overview of Adriana's answers to ethical questions relevant in risk evaluation.	197 – 198

Figures

Figure 1: Ngram chart of risk, threat, danger, and hazard [Google Ngram Viewer 28 March 2016].	29
Figure 2: Calculation of the total expected utility of an action.	79