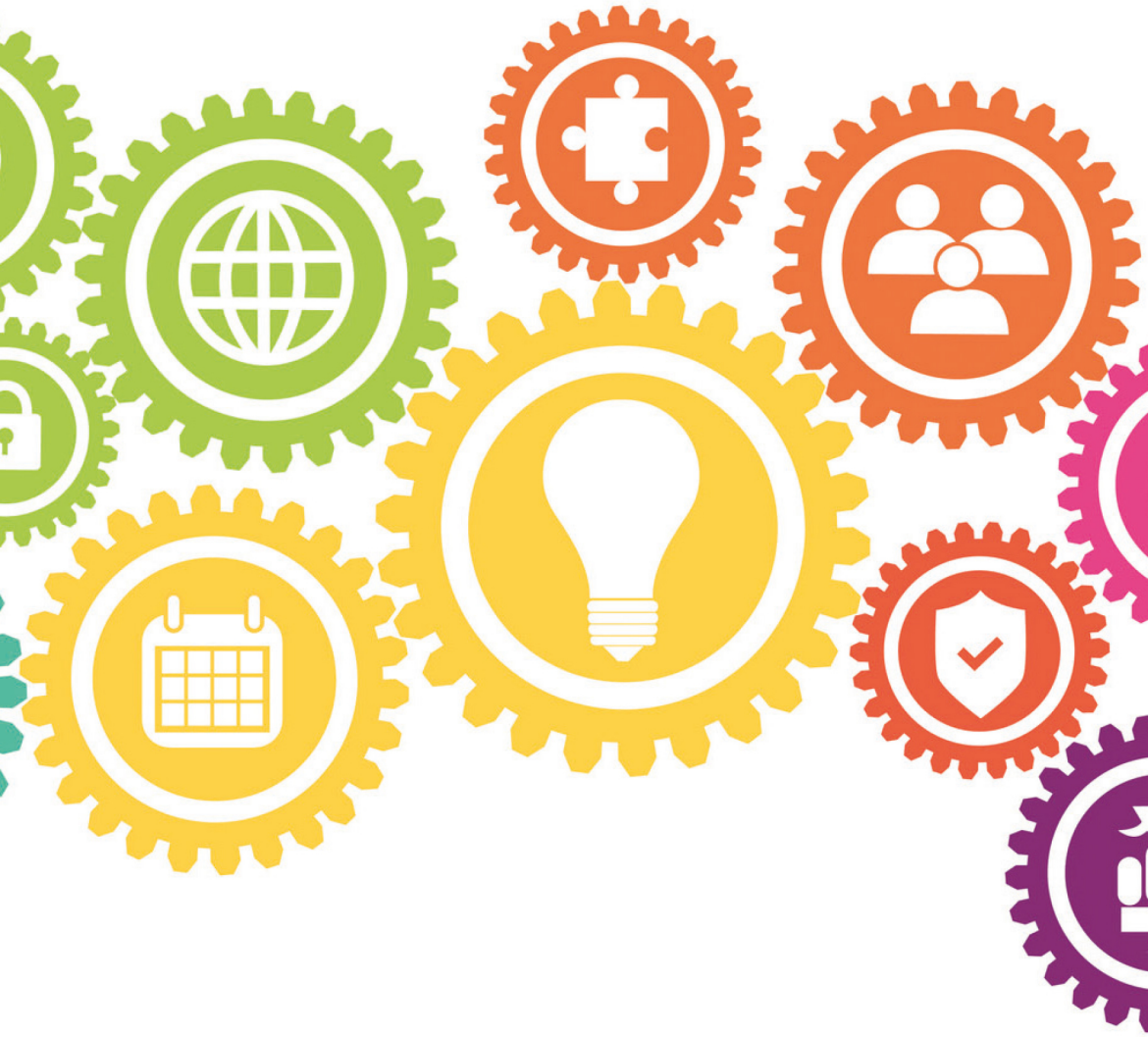

MAKING SENSE OF THE FUTURE

Rick Szostak

ROUTLEDGE

MAKING SENSE OF THE FUTURE

Making Sense of the Future integrates the latest thinking in Future Studies with the author's expertise in world history, economics, interdisciplinary studies, knowledge organization, and political activism.

The book takes a systems approach that recognizes the complexity of our world. It begins by suggesting a set of goals for human societies and identifying innovative strategies for achieving these goals that could gain broad support. Each chapter begins with a "How to" section that discusses how we can identify goals, strategies, trends, surprises, or implementation strategies and concludes with an integrative analysis that draws connections across the preceding discussions. Taking a cross-disciplinary approach, Szostak explores key trends and how these interact so that we can develop strategies to guide trends towards desirable futures. He discusses the ways in which we can best prepare for surprises such as epidemics and natural disasters, enabling us to react to them in beneficial ways.

Supported by a list of guiding questions and suggestions for class projects, this is an accessible textbook for students of Future Studies and Future Studies courses.

Rick Szostak is Professor and Chair of Economics at the University of Alberta, Canada. He is the author of 19 books and 50 articles across economic history, world history, interdisciplinary studies, knowledge organization, and a dozen other fields. This book is a sequel to his *Making Sense of World History* (2021).

MAKING SENSE OF THE FUTURE

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The *best way to predict the future* is to *create it*

Commonly attributed to Peter Drucker

CONTENTS

FIGURES

BOXES

ACKNOWLEDGEMENTS

An alumnus of my department, Brian Menges, suggested to me one day over lunch that my university should offer a course in Future Studies. I mentioned the idea to my dean, who liked it and urged me to pursue it. So I did a bit of reading. I had read many works in Future Studies over the years and had occasionally interacted with futurists. But this time I discovered Hines and Bishop's *Teaching about the Future*, and had an email conversation with Andy Hines. As noted elsewhere, I soon recognized that I could write a book about the future which would integrate the latest thinking in Future Studies with my own understandings of ethics, interdisciplinarity, economics, world history, and political activism. I take this opportunity to thank Brian Menges, Dean Lesley Cormack, and Andy Hines for setting me on the path to write this book.

Routledge sent the manuscript to referees and I was blessed with the best referee reports I have ever received. I thank both Michael McCallum and Tami Carmichael for very useful advice. The book is *much* stronger because of their suggestions.

As I was writing the book, I attended a virtual conference presentation by Jessica Hirshorn. The exercises in boxes 4.6, 5.3, and 6.3 owe much to that presentation. I also stole the book's epigram from her PowerPoint.

This book more than any other I have written should acknowledge the legions of authors – in Future Studies itself, and in many other fields – that I draw upon. This book is only possible because of their work. I hope that I have not too horribly butchered their insights while integrating them.

I thank Aarne Mämmelä for years ago acquainting me with the Meadows and Wright book that is discussed in chapter 3.

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1

INTRODUCTION

The purpose of Future Studies is to allow humans to understand plausible futures, and then seek to shape these into desirable futures. These may seem to be both invaluable and unachievable goals. Indeed, if we thought that we were good at looking into the future, we would spend more time doing it. Almost every university in the world has a department of History to help us peer into the past but very few have a similar enterprise for surveying the future. This book will show that we are better able to address our future than we might think – I think. We should thus put far more effort into doing so.

Fortunately, the field of Future Studies has matured to a point where there is consensus around several key points and articulation of numerous methods for peering into the future. However, there is no consensus around the best methods for examining the future, and even less consensus around what we should be doing to shape that future. This book will outline a coherent structure for doing both.

This book builds upon the latest thinking in Future Studies. It also builds upon my *Making Sense of World History* (2021), a book that set out to both understand and draw lessons from the whole sweep of human history. Future Studies is a self-consciously interdisciplinary field, recognizing that the future will be determined by how political, economic, social, environmental, technological, and other phenomena interact. This book builds also on my career as a scholar of interdisciplinarity and especially my co-authorship of multiple editions of two textbooks about how to perform interdisciplinary research. In particular, it applies a systems analysis approach based on the observation that the key phenomena studied in different disciplines all interact, at least indirectly. (You can anticipate seeing some flowcharts in what follows.)

Scholars of Future Studies recognize that we cannot predict the future. They are thus justifiably suspicious of anyone who claims to have a clear understanding of what the future will look like. Yet they argue that we can identify a set of plausible

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futures. Then we can identify aspects of those futures that we want to encourage or discourage. In doing so, we need to be conscious of the connections between different policy goals and ensure that the policies we pursue toward one goal do not take us (too far) away from other goals.

Our purpose in this book is foremost to identify a key set of questions that we should collectively ask about our future. We will suggest answers to each question, but will surely not suggest the best possible answer every time. Human understanding advances through conversation – the careful amassing and evaluation of argument and evidence – and advances fastest when humans focus on a set of important questions that we can usefully investigate together.

Put another way, what we are striving to achieve here is foremost an organizing structure – a handful of stages of analysis with key questions to pursue within each – for collectively thinking about our shared future. A structure without content would be both exceedingly boring and entirely unconvincing, and thus we flesh the structure out with many answers to our guiding questions. Readers can hopefully appreciate the structure even if they occasionally query some of the arguments applied within it. Moreover, that structure remains valid even if the future is far different from the present.

We will argue that the future is complex precisely because a large (but finite) set of phenomena studied across many disciplines interact with each other. It is thus crucial that we provide examples that draw upon many disciplines in answering our guiding questions. This book must then necessarily pursue breadth over depth: We talk a little about many things, stressing how answers to one question interact with answers to other questions, but cannot delve too deeply into any one issue. We invite readers to pursue more detailed understandings of issues that interest them. Instructors using this book as a text can easily assign a set of short research assignments where students are expected to read more widely about any of the many issues addressed here. Class discussions around any of these issues can strengthen students' collective understanding of both individual issues and the broader structure of the book. These class discussions will best further the project of this book if organized so that students seek to understand those they disagree with – instructors might even ask students to articulate opposing arguments – rather than try to win a debate.

Project? What is the project of this book? It aims to enhance our collective ability to move toward desirable futures. It seeks to identify strategies for improving the world that can have broad public support. More importantly than any of the many strategies suggested in the book, it seeks to formulate a structure for encouraging the development of such strategies. This book is thus an exercise in what is sometimes termed the "radical middle": It is not beholden to ideologies of right or left but rather seeks bold but sensible policies that can be widely appreciated.

I should confess up front that the book is predicated on a belief that humans are capable of engaging in sensible and respectful conversations about both societal goals and the means to achieve these. I will outline in what follows a set of changes in both values and institutions that would encourage such conversations.

Nevertheless, readers who doubt human capabilities for rational discourse will find many opportunities to doubt the feasibility of some of the strategies I suggest. I would challenge them to suggest how we can plot a better future without relying on sensible discourse.

My generation has bequeathed to future generations a world that is wonderful in some ways (for some people) and deeply problematic in others. I believe wholeheartedly that we can have the good while minimizing the bad if we act with courage and judgement. The next generation may prove better at this task than my own. If not – if the young become fearful and complacent as they age like we did – a future that is in many ways far worse than the present is easily imagined (and will be in chapters 4 and 5, along with better futures). This is a point in history where *making sense of the future* is critically important. I will provide my own sense of the future, but invite readers to deviate from this in making their own sense of the future – and determine how they can best shape that future. Nevertheless, I will try occasionally to lighten this critical task with some humour, humility, and the occasional anecdote: We are best able to cope with fear and injustice if we do not take ourselves too seriously.

1.1 Outline of the book

In the next two chapters, we engage in the method of "backcasting." This is arguably the method most widely pursued within Future Studies. It has two key steps. In chapter 2, we identify a set of characteristics we would like to see in the future: stable climate, cultural toleration, peace, and more. We then in chapter 3 seek to identify a set of strategies that can move us toward all of these goals. We draw heavily on historical experience throughout. That is, we "backcast" how we can achieve the futures we desire.

The world is constantly changing. It thus makes no sense simply to talk about how to get from today to our desired future. It would be unforgivably naïve to think that our plans for the future will not be buffeted by events. We must imagine how the world is likely to unfold over the next decades, and then think of how to get from likely futures to our desired futures. Futurists appreciate that we cannot predict one future flawlessly (though you can surely find many books in a bookstore or online that will claim otherwise), but should rather identify a set of plausible futures. These plausible futures may embody certain characteristics of our desired futures but deviate from those desired futures in other ways. We will identify plausible futures in chapter 4. This will involve asking what present trends are likely to continue into the future. We can then investigate how we might nudge these plausible futures toward desirable futures.

We must also ask a more challenging set of questions about plausible changes in the future. That is, we must take a stab at predicting likely "surprises." The future, like the past, will involve key events that were not easily predictable from past trends. Predicting surprises is, of course, inherently challenging – they would not be surprises if we could easily see them coming – but not quite impossible. This will

be the task of chapter 5. We will be aided by our understanding of how the phenomena studied in different disciplines interact, for surprises are most likely when no one group of experts focuses on a particular interaction. We will then discuss how societies can both prepare for and react to surprises in a way that moves us toward desired futures.

Chapter 6 turns to more practical questions. If we can identify some useful strategies in the preceding chapters, how can we see that these are implemented? In particular, how can we guide societies from plausible to desirable futures? Though we cannot engage in a full-fledged discussion of policy advocacy, we will find that many of our discussions in preceding chapters provide important insights into how to put ideas into practice.

Chapter 6 also engages the question of human progress. In what ways have human societies experienced historical progress? An appreciation of human progress in the past can better prepare us to achieve future progress. In particular, we can enhance our confidence in our ability to shape the future by knowing how and how much progress was achieved in the past.

Figure 1.1 shows how the material of the next five chapters connects. Like any flowchart, it simplifies the analysis to follow. Yet it provides a useful overview of how we hope to identify plausible futures and work toward desirable futures. We are best able to achieve desirable futures if we pursue a broad approach of carefully identifying goals, strategies, and the trends and surprises we need to cope with along the way – and understanding how these interact.

Some futurists might have started the book with the analyses in chapters 4 and 5. After all, most of the effort in Future Studies is devoted to positing future trends and surprises. The danger of such an approach is we then focus only on certain trends or surprises, and potentially lose sight of our broader goals. We will in chapter 4 focus on

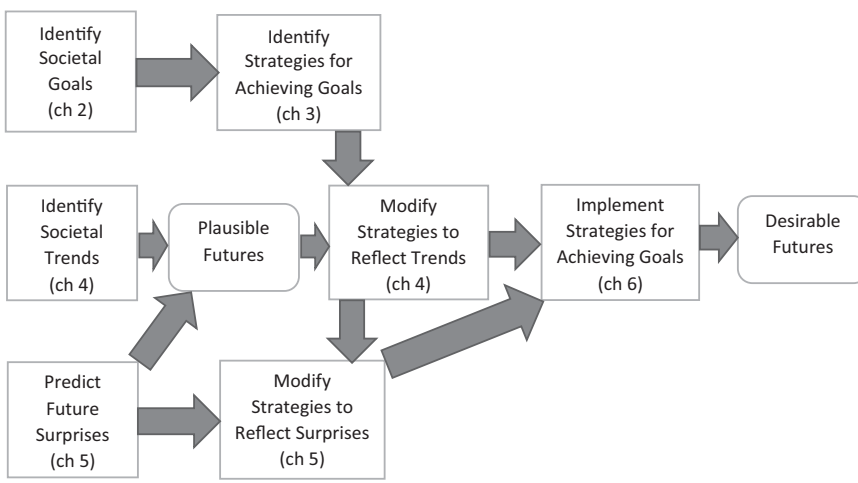

FIGURE 1.1 Plan of the book.

trends that are related to the goals that we have identified in chapter 2. We cannot reach our best possible future unless we first have a clear idea of what we would like that future to look like. We live in a time of change and it is all too easy to lose a sense of direction while reacting to change. We need to carefully articulate our goals – and reflect on how these can be achieved – before we can know how best to respond to change. One further advantage of the approach of this book is that the reader is rewarded early (chapter 3) with a set of strategies for achieving desirable futures, rather than only encountering these after multiple chapters that identify problems and challenges.

In each chapter of the book, we will first outline a small set of principles that will guide analysis throughout that chapter. It would be a tedious exposition if we repeated each principle for each example engaged thereafter. However, it can be a useful exercise for students to report on how each principle was (or should have been!) applied to particular examples. We will thus early in each chapter detail a set of questions for readers to keep in mind as they read the rest of the chapter. These questions can form the basis of student assignments. Student assignments or group projects around methods employed by futurists are also suggested in boxes 3.7, 4.6, 5.3, and 6.3 (and briefly in 2.5).

1.2 Important characteristics of this book

Any book with a broad interdisciplinary focus must be jargon-free. We cannot assume that readers will be familiar with the jargon of any particular discipline. We must thus report insights from many disciplines in a way that will be comprehensible to non-experts. This will mean that we cannot bury our ideas in big words but must state every argument of the book simply and directly. Our ideas, that is, are thrust into the world naked and alone, subject to critique from all sides. This is a good thing, for our purpose is to communicate a structure for understanding and shaping the future, and to invite dialogue around key issues.

BOX 1.1: WELL, MAYBE A LITTLE JARGON ...

We will use the word "strategy" a lot in this book. It has a very broad meaning, of any sort of multifaceted approach to accomplish – or at least move toward – one of the goals articulated in the book. A strategy, as we shall see, may include a variety of different kinds of efforts. We will use the narrower term "policy" to refer only to official acts by a government.

We will also use the word "institution" from time to time. We will follow common usage here and define "institution" as any formal rule promulgated by an organization that has the power to enforce that rule. Note that an institution is only an institution if people can be punished for violating the rule. The most common institutions in modern societies are the laws and regulations put in place by governments. The rules governing plagiarism by a university are also

institutions. We can distinguish "institutions" from "cultural attitudes" on the twin grounds that the latter are less formal and that the punishments for violating these are likewise informal. One of my pet peeves is that some scholars define "institutions" so vaguely as to be indistinguishable from cultural attitudes. We will wish to distinguish these and discuss how they interact in what follows.

Particular institutions (say, laws about littering) or values (say, honesty) are all "phenomena," a word that in this book really just means "things that we study." It would have been unclear in places if we just referred to "things."

There, that wasn't so bad, was it? Every other word in this book is employed, I hope, in a manner that should be familiar. We can engage our future in plain English.

Each of the next chapters has a very similar structure. Each chapter begins with a discussion of key principles and guiding questions. In chapter 2 these focus on how to identify shared societal goals. In chapter 3, they specify ways to develop strategies for achieving such goals. In chapter 4, we ask how to identify trends that are likely to continue into the future. In chapter 5, we ask how to predict surprises. In chapter 6, we identify broad guidelines for policy advocacy.

The bulk of each chapter is then devoted to a broad cross-disciplinary survey: of respectively particular goals, strategies, trends, surprises, and strategies for policy advocacy. It is important in each chapter that we cast our net widely, for only a broad treatment can cope with the inherent complexity of our shared future. Note that in chapters 4 and 5 we re-apply some of our analysis from chapter 3 as we discuss how to move from plausible futures and surprises toward desirable futures.

Each chapter then proceeds to an integrative exercise. Are the goals we have identified in chapter 2 broadly compatible? (Yes, but certain conflicts will not be ignored.) Are the strategies identified in chapter 3 broadly compatible? (Yes again, but we must always be cognizant of negative side effects of our strategies.) How do the trends identified in chapter 4 interact? (Sometimes, they reinforce each other but other times they conflict.) How might surprises interact? (I will leave that as a surprise.) How might strategies for advocacy interact?

BOX 1.2: STEEP

Futurists often stress the acronym STEEP to emphasize the important interactions among social, technological, economic, environmental, and political phenomena. We embrace this emphasis on interactions, but extend it, recognizing that culture, health, population, art, and human nature are also important in particular contexts. We will extend our gaze across each of these categories of phenomena in the chapters to follow.

The book covers a lot of ground in a manageable number of pages. We hope to provide a structure for studying and shaping the future. We hope to provide enough detail on each goal, strategy, and prediction surveyed so that readers can readily appreciate how it fits within the broader structure. We hope to prepare readers well for more detailed conversations.

We will try to organize the material so that it is easy to remember. This will often involve simple organizing devices such as employing SWOT (strengths, weaknesses, opportunities, threats) analysis in chapter 5 or asking the 5W (who, what, where, when, why) questions in Chapter 6. We will use bullet points when there is a handful of complementary points to be made, or strategies to suggest.

There will be many issues of tangential importance that arise in these chapters but do not fit comfortably within the chapter's organizing structure. We will employ in-text boxes to address these issues.

In identifying societal goals in chapter 2 we seek goals that are (or sometimes can potentially become) broadly acceptable. There is no sense in backcasting if we cannot first achieve some consensus on goals. Yet the task of identifying broadly acceptable goals may seem impossible in a world characterized by political polarization. It is not. We will seek to integrate across seeming dichotomies in goals. We will seek to identify Golden Means with respect to some goals, backing away from extreme positions that scare or offend wide swathes of the population. Critically, we will recognize that people have five different ways of evaluating both goals and policies, and seek goals and policies that satisfy most or all of these evaluative approaches.

In looking at strategies for achieving these goals, we must look at how we can change the way societies make political decisions. That is, we will ask what sort of decision-making processes might yield decisions that advance our various goals. Yet we will not focus exclusively on formal rules and processes, but recognize that our rules work best when supported by our values. We must then talk in chapter 2 about desirable values and in chapter 3 about how to encourage these.

Though we seek in this book to provide clear analysis and advice, we do not shy away from appreciating that there is an important role for creativity in many places: identifying strategies in chapter 3, identifying surprises in chapter 5, and encouraging societal change in chapter 6 (and maybe elsewhere). We give advice in each case on how creative processes can be encouraged – which necessarily involves debunking a common misconception that creative acts just happen.

In looking at trends and surprises, we do not privilege any single driving force in human societies. Our bookstores are full of books that focus on how technology or culture or climate change will change our world. Each of these books may contain important insights, but each inevitably fails to appreciate the broader context in which the future will unfold. We are much better able to guide our future if we can appreciate the full range of forces that interact in driving historical processes.

A book about the future is best written by a scholar who knows a little about a lot of things. I bring to the task some expertise in diverse areas such as interdisciplinary studies, economics, world history, information science, methodology, policy

analysis, and creativity. (I discuss in the Bibliographic reflections how this book draws on my previous research, but might stress again here that I am facilitated in identifying future trends and surprises by my work in world history, and in performing integrative exercises by my research in interdisciplinary studies.) I will surely be wrong about many things in what follows – but those who may criticize me will be wrong in turn about many things. Hopefully, the general structure of the book has value, and we can work toward consensus on the details over time. (These are, at least, my excuses for any errors, and I am sticking to them. I thought it useful to put them all in one place.)

It is useful to close with a quote I have always liked from Ernst Laszlo: "There are no immaculate perceptions." With perhaps the singular exception of Descartes' *cogito* ("I think, therefore I am": We each as individuals know that we must exist because we are engaged in thought), there is no statement – whether philosophical or scientific – that cannot be subjected to some reasoned objection. Even our belief that the earth orbits the sun might be queried – though there is now so much argument and evidence in favour of that hypothesis that we should safely accept that it is true. We as humans cannot strive for perfect arguments, but should appreciate that by carefully amassing argument and evidence, we can move toward broad consensus on any issue. We should be humble, but not let the recognition of counter-arguments numb us into inaction. This simple argument will guide analysis in many places in this book. It also guides the structure of the book: I purposely provide what I see as the main arguments surrounding each issue that is addressed. The reader can appreciate that there are *always* caveats that we have not pursued. This is a flaw not of this book but of the universe.

1.3 A brief survey of Future Studies

Peter C. Bishop and Andy Hines, in *Teaching about the Future* (2012), provide a useful survey of methods employed in Future Studies. The approach of this book chooses from these in very simple ways:

- We adopt the method of "backcasting" wholeheartedly.
- We accept that the world is complex, a core premise of Future Studies. We thus tend to eschew all the many methods in the field that focus on one change agent (such as technology), in favour of an approach that assumes that all phenomena exert an effect on other phenomena. We need, that is, to embrace the simple fact that our world is governed by hundreds of interacting phenomena.
- We embrace the idea of modelling visually (and sometimes mathematically) these diverse interactions. We engage important mapping strategies that privilege one type of change (such as the Futures Wheel, which diagrams the direct and indirect effects of one change at a time) but try when possible to capture multiple interdependent transformations.
- We quite like the "Failure Mode" idea of looking at what might go wrong. We need to strive to identify surprises (often termed "wild cards") that we should

be prepared to react to. In addition, we need to look carefully at the possible negative side effects of any policies that we might promote. Our goal should be to identify policy interventions that serve multiple goals simultaneously, or at least pursue one goal without having too negative an impact on other goals.

- We recognize the value of games and simulations that attempt to grapple with the unpredictability of the future. We will draw upon the results of such exercises as appropriate but will not directly employ these methods. We will, though, encourage classroom exercises that employ such methods.
- We also applaud methods for achieving expert consensus on the future. However, we worry that expertise focuses almost necessarily on certain nodes and links within the complex system of interactions that guide world history, and that expert advice may thus be biased.
- We stress methods that are easy to understand and can be applied in a reasonably objective manner.
- Systems analysis lies at the heart of Future Studies, and will be employed throughout this book.
- Perhaps most importantly, we accept the key premises (first outlined by Roy Amara) that the future is not predictable, but nor is it pre-determined, and thus it can be shaped by human action.

We should recognize that there is an important minority tradition within the field of Future Studies that predicts that humanity is on the verge of a major societal transformation: Phrases such as "collapse," "revolution," and "the end of capitalism" are employed in this discourse. These scholars might seem to violate our last bullet point, assuming that one future can be confidently predicted. Yet they can point to the fact that all previous human civilizations have collapsed (at least if one defines collapse in a particular way). Such futurists would think that a book such as this, which proposes a wide array of changes to our existing societies, is missing the point.

We will not in this book shy away from identifying bleak plausible futures in chapters 4 and 5. There are days when I fear for our collective future. Yet the costs of collapse and revolution are so high that I think it prudent to seek to reform the societies we inhabit rather than give up now and start planning the next society. And even if we are not able to stem societal collapse, it is useful to reflect on what kind of society we want to live in so that we are better able to rebuild. It may be that I exaggerate the degree to which we can reform our existing societies; readers are invited to engage the possibility that more radical reforms may be required as they peruse this book.

Such reflection must begin with identifying societal goals. But it must also reflect on how we can achieve those goals. I grow tired of books calling for the end of capitalism. Most of these give no glimpse of how we would organize an economy without markets and firms. Some have the temerity to suggest that a series of committees could determine what and how much we produce. This book will often indeed suggest various forms of collective decision-making, but let me

confess at the start that I have sat through far too many committee meetings in my life to want decisions about how much and what kinds of toothpaste to produce to be entrusted to a committee when markets can perform that task so well. So this book will instead focus on how we can have the benefits of markets while minimizing their many negative impacts. We, will, that is, suggest many important reforms to our economic system, but not imagine that we can or should get rid of markets or firms. I fear that a discourse about the end of capitalism guides us away from discussing the advisability and feasibility of reforming capitalism.

In sum, though I think it prudent to prepare for the worst, I think the best attitude at this point in time is constructive optimism. We can, with courage and goodwill, create a far better future.

1.4 Why do this?

We have already admitted that we hope that in better understanding the future we will be better able to shape the future toward desirable ends. Yet we should appreciate that there is also a direct advantage of better understanding the future: You can be more confident of your own life if you have a basic understanding of the world you live in and the broader forces that affect you. You can feel less powerless if you have some idea of how to shape that world. Finally, you can better plan your individual futures if you comprehend societal futures. We want, in sum, to change the way you see the future, and your role in shaping it.

While we focus in this book on broad societal changes, you may find useful insights within these pages that can inform your career choices or entrepreneurial decisions. Some of you may become social entrepreneurs, forming businesses that make money while explicitly furthering societal goals. Of course, providing goods and services that people want will always serve at least one societal goal (economic prosperity).

The Future Studies literature identifies a set of subsidiary goals to those above. Each of these will be encouraged at some point in this book:

- Encouraging thinking that is diverse, open, balanced, and non- biased
- Asking the right questions
- Appreciating the assumptions and mental models of others
- Placing particular issues in a broader context
- Anticipating change and avoiding surprise
- Considering a range of future possibilities
- Producing more creative, broader, and deeper insights
- Identifying a wider range of opportunities and options
- Choosing a preferred future
- Experimenting with strategies and policies
- Catalysing action and change.

2

SETTING SOCIETAL GOALS

2.1 How to set goals

In a world of change, where we must individually and collectively make very complex decisions, it is absolutely critical that we know where we want to be going. Otherwise, we can too easily just be buffeted by events, reacting to one challenge after another, and end up feeling that we are not getting anywhere better. Only by first reflecting deeply on our goals can we hope to fashion a better future.

We should also recognize the motivational effect of reflecting on our goals. There is an important strand of futurist thought that stresses that imagining a better future encourages people to work toward achieving that better future. It is important to stress, then, that we will identify goals that are feasible in this chapter, but each requires effort.

Though our purpose here is to identify a set of goals that each has merit, it is important that we ask whether these various goals are compatible. We shall see that this is often the case. For example, the goal of strengthening (faith in) democracy will be enhanced by policies that achieve a variety of other goals, and these other goals are generally easier to achieve with improvements to democratic decision-making. Better policies, arrived at democratically, enhance confidence in the fairness of the system.

Can we agree on a set of goals? At a time when politics is polarized in many countries, consensus on societal goals may seem a distant dream. Yet contentious political debate can often mask consensus on deeper issues. The vast majority of people are willing to help the less fortunate, but do not want to be taken advantage of by the dishonest or lazy. Debates on social policy often hinge on which side of this dichotomy different groups choose to emphasize at a point in time. Clear articulation of a shared but complex goal – to help the less fortunate without being

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duped – can encourage the development of policies that seek to satisfy the vast majority of people.

If we wish to satisfy most people, then we need to appreciate that people will evaluate societal outcomes in five quite different ways:

1. Most obviously, people will look at consequences. They may do so selfishly: Does a particular policy or societal outcome make me better off? They may do so more altruistically: Does a particular policy or outcome make the world a better place? Either way, they will evaluate particular societal outcomes in terms of some set of goals. Note that by making people reflect on their goals we may alter their evaluation of the consequences of particular actions. In order to satisfy those who calculate consequences, we will need to evaluate policies and outcomes in terms of who benefits and who loses, and seek policies that have broad benefits, or for which the winners can compensate the losers.
2. People may instead look at whether a policy or outcome accords with certain core beliefs or rules: "People should work," "Drug abuse is a crime," "Addiction is a disease," and so on. One oft-cited belief is the Golden Rule whereby we should treat others as we would hope for them to treat us if the situation were reversed. People will often also have strong beliefs around certain sets of rights – but may disagree about which rights are most important. Note that we can at times encourage people to reflect on their beliefs, but often our very identities are tied to certain core beliefs. We will discuss below questions of "justice" and "freedom" that often reflect and inform core beliefs.
3. Likewise, people may have a core set of values. They want to be caring, or just, or prudent, or courageous. They will evaluate policies or outcomes in terms of these core values. As with beliefs, these values may be difficult to change within individuals. For both beliefs and values, change may nevertheless occur across generations. We will often encounter changes in beliefs and values – some laudable, some troublesome – in what follows. We should thus be willing to speculate on the benefits of certain further changes in core beliefs and values.
4. The preceding three approaches assume some sort of conscious logical analysis. Perhaps, though, people will simply go with a "gut instinct" or intuitive response that a particular outcome makes them feel good. They may not subject this intuitive response to much conscious reflection – or they may pretend to a rational reflection that simply justifies a decision reached without much conscious thought. Some psychologists suggest that this is the most common human approach to decision-making. Note that people then pursue a conscious evaluative strategy in a very biased manner. It is important, then, that we examine why a policy or outcome might have intuitive appeal.
5. Finally yet importantly, people may simply agree with what their peers, group, or group leaders say. As with intuition, they may use one of the three conscious methods of evaluation above to rationalize decisions they have made because of the influence of others. We should not disdain this sort of collective decision-making. Groups over time develop shared traditions that generally

serve the group well. We should seek policies and outcomes that do not needlessly offend societal traditions. We may at times wish to encourage questioning of troublesome traditions.

As we discuss each goal below, we will ask how it accords with each of the five types of evaluation. We will seek to articulate goals in a way that appeals to each of the five types of evaluation.

GUIDING QUESTIONS

Readers should not find it too difficult to evaluate each goal articulated below in terms of each of these five types of evaluation. It is useful for readers to develop a small table for this purpose, with the first column representing particular strategies and five columns for each type of evaluation. It is also useful to visually diagram the effects noted below, and speculate on other possible effects.

BOX 2.1: JUSTIFYING AND CONNECTING THE FIVE TYPES OF EVALUATION

It is worth noting two key facts about these five types of evaluation. First, they are independent. Philosophers debate the relative strengths of the first three types of analysis, under the headings Consequentialism, Deontology, and Virtue Theory. Philosophers recognize that each of the three has different basic principles. While different philosophers have strong preferences, there is a general appreciation that each of the three approaches begins from valid premises – but that each also faces challenges. Peer pressure and traditions are studied for the most part by sociologists and anthropologists rather than philosophers. Anthropologists appreciate that societies develop traditions that often serve those societies well – though some traditions may become outdated, and others may serve elites better than they may serve others. Psychologists study human emotions and subconscious thought processes. They appreciate that our subconscious thoughts embody understandings that we might have trouble articulating in words. They also appreciate that our emotions may guide us to act in ways that we would consciously disdain. They recognize that our subconscious decision-making is not strictly rational, but rather draws (often biased) associations with easily retrieved memories. The fact that each of the five types of analysis is justifiable in different ways, and that neither is perfect, means that *we have no objective basis for deciding that*

one is superior. There is both a practical and ethical argument, then, for trying to satisfy all five.

The second fact is that the five types of evaluation are mutually supportive. Humans live complex lives and thus do not have the time or cognitive capacity to evaluate carefully each decision they make. Even a diehard consequentialist must default, then, to following certain rules or values much of the time. We value traditions in large part because we think they have provided good outcomes to our group. In the all-important ethical arena, our intuition provides the most powerful answer to the question "Why act ethically when you can get away with unethical behaviour?" The other types of evaluation may help us determine what is ethical, but only our wish to avoid feeling guilty will induce us to act ethically. Yet our guilt in turn reflects the values and beliefs that we have internalized. There are, of course, times where the five types of evaluation point in different directions (and then we must make difficult choices), but we can be heartened by the fact that they often reinforce each other.

2.2 Particular goals

2.2.1 Environmental sustainability (climate, resources, biodiversity)

Although there may be fierce debate regarding the seriousness of our environmental challenges, and the best ways of addressing these, there can be little doubt that we all want our great-grandchildren to inherit a world with a healthy climate. We also want them to have resources to support their economic activities. Biodiversity is valuable both because most humans appreciate nature and especially wildlife, and because we are often able to construct valuable medicines from natural substances (though the latter motive may become less important as we become able to build any genetic compound in a laboratory). Maintaining our environment has good consequences for future generations that we care about, accords with core beliefs and values around caring for future generations, and reflects traditions in most human societies of caring for both nature and the young. With respect to our emotions, there is much evidence that humans gain pleasure from regular interactions with nature. We should thus feel good about maintaining our environment.

Environmental policy discourse tends to focus on big issues of climate, pollution, and biodiversity. Yet if humans do benefit psychologically from exposure to nature, then we should have a goal of maintaining both urban and wilderness parks. We should hope that everyone, and especially young people, have access to these parks. Regular exposure to nature may have the advantage of encouraging people toward other environmental goals.

2.2.2 Faith in democracy

We will follow Winston Churchill's famous advice, that democracy is the worst possible system except for all the rest. It is important that we not oversell democracy: Fools and knaves are often elected, and voters find it frustrating to monitor either politicians or government policies. Yet a functioning democracy allows the citizenry to exert some influence over government policy, and limits the abuse of governmental power. Those who have never suffered autocratic rule may underestimate these important achievements. If we accept that democracy is valuable, then our goal must be to restore faith in democratic processes. However, we do not want to fool people, and thus a restored faith in democracy must reflect actual improvements in the way democratic decisions are made, and this in turn must lead to a visible improvement in government policies. This is a tall order, but the failure to restore faith in democracy risks a slide into autocracy. We should recall that modern democracy is only a couple of centuries old, and that democratic governance depends on broad public support for the system: Democracies may be far less secure than they might appear.

We have already mentioned one good consequence of democracy: limits on governmental abuse of power. There are others. Voters often judge politicians on the basis of economic outcomes (even though economic outcomes depend on many things beyond the control of politicians). Faith in democracy will depend to a large degree on whether democracies are perceived to enhance economic prosperity. There is evidence that democracies on average grow faster than autocracies, but the economic success in recent decades of autocratic China leads many to question how strong the link between democracy and economic prosperity is. Causation in the other direction may be more powerful: Democracy is far more firmly established in most rich countries than it is in most poor countries – likely because literate people freed from hunger and with time to devote to political debate are more likely to support democracy and value the freedoms associated with democracy.

The record with respect to the environment is also promising. It is easier for complaints about pollution to be heard in a democracy. Some autocrats have shown great disdain for the natural environment. Again, though, there are exceptions.

We must be careful in our use of terminology in this book. Many of us conflate the terms "democracy" and "representative democracy." Given that representatives do not always serve the interests of electors, we should have a special interest in this book in democratic institutions that allow the wishes of citizens to have direct impacts on policy unmediated by "representatives."

We have suggested that we can only restore faith in democracy by reforming democratic institutions and generating better policies. Yet even this will not be enough. Democracy, in the end, must depend on a couple of core beliefs: that we can respect those who we disagree with and work together on shared goals; and that we can through careful argument and analysis identify superior policies. As Michel Foucault the French philosopher recognized decades ago, if we abandon faith in the value of careful analysis and argument, then we have no answer to authoritarians: A

dictator's decisions are as valid as anybody's. In addition, democracy depends on a shared sense of purpose. If we vilify those we disagree with, then that shared sense of purpose disappears, and democracy becomes a tyranny of a majority over a minority.

Our goal, then, must be to both improve the institutions of democracy and resuscitate the core values on which democracy depends. Happily, these sub-goals are mutually supportive: It is easier to improve institutions if we can work together in doing so, and it is easier to work together if we see a path to improvement. Reinvigorating values is particularly important for the project of this book, for those whose evaluative processes rely on beliefs or values will only then support our strategies and goals around reforming democratic institutions. Those guided by intuition may also be moved away from the attractions of politics as blood sport toward appreciation of institutions designed to achieve societal consensus, if they come to see real potential for achieving consensus.

2.2.3 Peace and international collaboration

Peace means the absence of war, and wars are generally understood these days to be horrific. Civilians have become common casualties in modern warfare, and thus no population wants to be drawn into war. Wars may at times be a lesser evil than dominance by a horrific dictator or the experience of mass starvation, but we could hope to eliminate wars, dictators, and starvation. Our belief in the value of life, and values of compassion and justice, also guide us away from war – and situations that might justify war. War has been a characteristic of human societies for millennia, but societies often hoped to achieve peace through conquest (a goal only very rarely achieved). Intuition guides most of us away from war, though certainly many/most are capable of some rush of excitement in battle.

International collaboration is necessary for a variety of important goals: addressing climate change, policing overfishing in our oceans, and eliminating tax havens. International collaboration on a range of issues reduces the likelihood of war. Nationalist traditions and our personal instinct to identify with small groups limit our support for cooperation – but we can see that collaboration serves the interests of member nations on many issues. We can build on such values as respect for others to encourage international collaboration. The challenge at present is that autocrats govern much of the world, and we can have legitimate ethical concerns about acting in ways that give them legitimacy. A wholehearted embrace of the principle of international collaboration may thus have to wait for a day when most or all of the world is governed democratically. There may still be challenges even then, for democracies routinely elect charlatans and rogues, but we can at least hope that these cannot veer too far from reflecting the will of the people, especially when it may take multiple terms of office to negotiate international agreements. (We will discuss in the next chapter how democracies should engage with autocrats.) We can then embrace a combined goal of international collaboration among democracies.

2.2.4 Sense of community

Human beings almost always operate within groups. We intuitively value our membership in groups. And all human societies celebrate their uniqueness (ironically in very similar ways). All societies encourage a sense of loyalty to the group, and also encourage values that provide support for group members. The consequences of group loyalty can be both good and bad, for a sense of togetherness within a group is often accompanied by suspicion of or even hostility toward others. For a democracy, then, it is critical that there be a sense of community within the nation as a whole. People may have a strong sense of attachment to ethnicities or occupational groups or religions or genders or other sorts of groups within the nation, but they should have some strong sense of overarching shared purpose with the nation as a whole. They should respect each other and interact with each other. If loyalties to groups within a nation become much more powerful than loyalties to the nation as a whole, then democracy is threatened. (Note that if we will value international collaboration then we will want some sense of a global community also.) Our ability to collectively pursue the sorts of strategies advocated in this book will be crippled in the absence of a sense of community: Mutual suspicion will prevent the development and implementation of policies that could otherwise be broadly supported.

We should seek a balance between valuing community and valuing individual autonomy. We should appreciate that communities are stronger because of the interaction of diverse people within them. And we should appreciate that individuals can only exercise their autonomy within communities. We should recognize that strong social pressures toward conformity are a challenge to democracy and an invitation to authoritarianism.

2.2.5 Economic prosperity

We want jobs to be available for those who want them – both so that people can feed their families and because work is (at least at this point in history) an important source of meaning for most people. Employment has good consequences both for the individual and society, accords with core values and beliefs, and makes people feel good about themselves. We will have an obvious preference for "good jobs" that pay well and give workers some capacity for expressing their individuality.

We also want to encourage entrepreneurs to develop goods and services that people want to buy. We of course want to discourage entrepreneurs from misleading or mistreating their customers, workers, or suppliers.

We want both workers and entrepreneurs to be able to buy a range of goods and services. We should respect their autonomy but can have some qualms:

- Measures of human happiness suggest that happiness increases markedly when we are able to meet basic needs for food, clothing, shelter, and healthcare, but that human happiness may increase little if at all with increases of income beyond that.

- We may be particularly suspicious of goods and services purchased to impress others. The value that one person gains from buying an expensive car may be matched by negative feelings of envy among others.
- We may also worry about the capacity of advertising to convince people to buy things that do not enhance their happiness in the end.
- We should appreciate that people also place a value on leisure time, and that futurists have often dreamed of a future (still some way off) when humans could be freed from toil to engage in self-improvement. We can worry about whether humans would really want to be completely freed from toil, but can appreciate that leisure time deserves to be acknowledged in any evaluation of economic prosperity.

We might thus conclude that some goods and services have better consequences than others. Likewise, some may accord better with shared values than others. If individuals choose to work a bit less – but still support their families – in order to have more leisure, we should view this positively (though we might worry that they then pay less in taxes).

Note here that the way we collect statistics does not at all distinguish good and less good jobs, good and less good entrepreneurship, or good and less good goods or services (sorry; that was a mouthful). Moreover, our measures of output have no place for leisure time. We will have more to say about how we do and should measure economic prosperity in later chapters.

Some readers may at this point be getting ahead of us and wondering if the goal of economic prosperity is at all compatible with the goal of environmental sustainability. We can reassure them that this is precisely the sort of question this book engages. We are outlining goals in this chapter, and will discuss how to achieve them in the next.

2.2.6 Reduced economic uncertainty

We noted above that we might prefer some jobs over others. We might include here a preference for secure jobs over temporary jobs. Yet we must be careful of pushing this preference too far. There are advantages to economic flexibility, for this allows us both to adjust the range of goods and services we produce and to identify lower-cost ways of doing so. We must strike a difficult balance then between providing workers with job security and giving firms flexibility.

An alternative to tying workers to particular jobs is to provide a social safety net that facilitates moving between jobs. Such a goal might be met in a variety of ways:

- Employment insurance programmes that replace part of a worker's income when they are laid off.
- A guaranteed basic income that ensures a minimum income for everyone.
- Public works programmes that provide jobs for the unemployed.
- Public education and healthcare programmes that enhance the resiliency and flexibility of workers.

Reducing economic uncertainty can have major psychological benefits. We want here to strike a balance that eliminates fear while still encouraging people to pursue personal responsibility in supporting their families. If we reduce fear at the individual level, then we see further indirect benefits: Fear encourages social strife and especially the vilification of those who might take our jobs. Fear also limits our ability to pursue other goals such as environmental sustainability that are seen by some as a threat to their livelihood. People generally try to avoid fear and therefore will intuitively appreciate greater security. If we can strike a good balance between security and responsibility, then this will accord with key values such as compassion and the key belief that people should get what they deserve. And if in achieving security we reduce or eliminate homelessness and begging on our streets, even the most curmudgeonly may appreciate some selfish benefits. We can even appeal weakly to tradition here for most societies have made some effort to address economic security, if only to decrease the incentive for political insurrection: The Roman Empire famously provided free bread to the people of Rome. We can aim for a greater security than most previous human societies could achieve.

We should close this section by appreciating that we can also reduce economic (and other types of) uncertainty by becoming more adept at predicting and reacting to "surprises" such as technological innovations and epidemics. This will be the subject of chapter 5.

2.2.7 Reduced inequality (economic but also social and power inequality)

The philosopher John Rawls famously argued that if individuals could choose the sort of society that they wanted to live in from behind a "veil of ignorance" in which they did not know where they would end up in the income distribution, they would opt for fairly egalitarian outcomes. But not entirely egalitarian: Even behind a veil of ignorance we would not wish to completely eliminate financial incentives for hard work and risk-taking. We need then to strike a balance – between beliefs and values of justice and fairness and caring that lead us toward egalitarianism, and beliefs and values around personal responsibility and rewards for hard work and risk-taking that lead us toward valuing some degree of inequality. We can be guided here by a critical realization that the incomes of all people reflect a combination of their own efforts and capabilities and the circumstances in which they find themselves. A great football player can make millions in the early twenty-first century whereas an equally skilled player a century earlier made a pittance. A corporate CEO can make millions only because there are huge globe-spanning corporations that are willing to provide lucrative pay packages. We can ask to what extent an individual's income may exaggerate their personal contributions. We may then be able to enhance fairness by taxing them without detracting from rewarding their personal initiative.

We should also appreciate that *some* income is earned by theft or collusion or corruption or dishonesty. Here we can achieve greater equality without interfering

with rewards for beneficial behaviour. We must, then, distinguish deserved income – from producing goods and services that people value and at a fair price – from undeserved income that comes from bribing governments or lying to consumers or colluding illegally. We can easily define "deserved income" as that which involves providing a net benefit to the rest of society, while "undeserved income" imposes a net cost on the rest of society. It is, of course, much more difficult to measure the effects on others than to define these terms. It is often easier to strike at the characteristics of "undeserved income" such as bribery or collusion, though we could enhance our efforts to measure undeserved income. Our goal should be to eliminate undeserved income. Success in this endeavour will make society more just. It will also enhance economic prosperity, though perhaps not the way this is usually measured.

We likely underestimate the role that luck plays in economic outcomes. Successful investors cannot predict all of the circumstances that might affect the profitability of an investment, and so rely on a mix of judgement and luck for success. Entertainers often rocket to stardom on the basis of one role or song that might as easily have been given to another. Farmers can be wiped out by freak weather events. I have sat on enough hiring committees to know that there can be a lot of randomness in who gets hired. Humans have a natural bias toward thinking that things happen for a reason, but in every realm of human activity there is a significant role for luck to play in determining outcomes. And we might then think that the lucky should be generous toward the unlucky.

People will on average feel better in a more egalitarian society. Envy and jealousy afflict the very poor, and while the rich gain some pleasure from luxury, they often also report feelings of guilt. And they lose some of the joy of accomplishment after amassing huge wealth. Social discord is lessened when income distributions are more egalitarian. And there are huge political implications: The very rich are much more able to lobby and bribe and influence than are masses of the very poor. Our efforts to restore faith in democracy will become easier to the extent that we succeed in lessening income inequality. More practically, those raised in poverty are more likely to be unhealthy and unemployed and incarcerated, and these are very expensive outcomes for society. Cross-country comparisons find that greater inequality is associated with various social evils: violence, mental illness, prison time, distrust, teen pregnancy, school dropouts, and obesity.

There is thus strong support for policies that aid poor children (though we must be careful about limiting the responsibility of their parents). Public education serves many purposes, but one of these is to raise children out of poverty. This promise can only be met if the poor have access to schools of good quality. And children do not learn well if hungry: Hunger among poor children exists across developed countries. One obvious goal is to eliminate this.

While reductions in income inequality will themselves yield reductions in political and social inequality, we should still recognize these as important goals in their own right. We should strive to change political institutions so that all citizens of a democracy have an equal voice. Such a goal, may, of course, be opposed by the

minority who at present wield above-average power. Yet such a goal is arguably even in their long-term interest, for the rich have the most to lose if the wider public loses confidence in our present democratic institutions. A core belief of democracies is that every voter *should* exercise equal power. Values of justice and respect call for such an outcome. Last but not least, the average person will feel validated if confident that their views are appropriately reflected in government decision-making.

Socially, we can strive for a world that is less stratified, where the rich do not display arrogance toward the poor, and where it is not considered outrageous for the rich and poor to socialize or even date. We can strive, that is, not just to reduce the experience of economic inequality but also social distinctions rooted in this.

We should pay special attention to the treatment of social groups. Discrimination against any ethnic, religious, occupational, or other group likely does more harm to the discriminated than the benefit it may provide to the discriminators. This is especially the case if the latter can be encouraged toward values of caring and respect. Discrimination fails other ethical criteria even more dramatically. The core belief of democracy in the inherent equality of all citizens should also act to discourage discrimination. Discrimination is inherently unjust and uncaring and thus defies core values and beliefs. The consequences for democracy and for social peace can be dire if one or more groups feels unfairly treated. The economic costs may also be significant, for a society that discriminates does not make the best use of its human capabilities. The psychological costs are huge: The discriminated feel disrespected and angry, and the discriminators may need to suppress feelings of guilt.

2.2.8 Increased personal control and sense of meaning

The goals above might all be seen as subsidiary goals to our main goal: enhancing human happiness. Psychologists are in the early stages of understanding the sources of human happiness. They distinguish two types of happiness: an important but transitory sort of happiness associated with individual pleasurable acts, and a longer-term sort of happiness associated with achieving goals. We should thus above all strive toward providing all humans with the capability to pursue their goals. This will have good consequences, at least if most people pursue goals that benefit the wider society. It accords with diverse beliefs and values around personal responsibility, social responsibility, caring, and respect. It struggles, though, against traditions in many societies that limit the goals that humans might pursue. Yet these traditions have weakened considerably in recent decades in favour of a respect for personal choice. We can thus urge a new tradition of respecting all human goals that do not have negative consequences for the wider society. Such a tradition would accord with the other five types of human evaluation.

We noted in chapter 1 that we will take a broad interdisciplinary perspective in this book. It is thus worth noting that humans can find meaning in a wide variety of human activities. Indeed, psychologists often urge humans to seek a balance in life across diverse activities. This has a practical advantage with respect to goals: If an

individual pursues multiple goals, they are better able to rebound from the inevitable disappointments in their path toward any one of them. We provide here a list of sources of meaning within each of the main categories of phenomena studied by human scientists, and can urge societies to facilitate each of these sources of meaning:

- Economically we can find meaning both in providing for our families and in helping the less fortunate to provide for theirs.
- Politically we can all find meaning in political activity at various levels (including volunteer organizations and school councils) with a focus on improving institutional quality and leadership practices.
- Demographically we can find meaning in raising children to be net contributors, and more generally in leaving a better world for our children.
- The prevalence of art in human history suggests that art plays a vital role in human lives; it could well be that we should all pursue artistic production (note that this tends to be common within traditional societies, and that young children everywhere enjoy drawing, sculpting, singing, and dancing) as well as artistic enjoyment.
- Socially we should find meaning in our various group identities – including our sense of community – in ways that are good for the world and do not interfere with self-actualization. We should recognize here, as in section 2.4, the symbiosis between healthy individuals and healthy communities that value personal diversity.
- This may involve consciously amending cultural practices. It will undoubtedly involve deliberately reflecting on what values are essential to both oneself and the world.
- Humans have lived closer to nature through much of history than do urbanized citizens of the twenty-first century. There is abundant psychological evidence that spending time in natural settings has positive effects on happiness. We might devote some of that time to caring for the natural environment.
- With respect to technology and science, we can all take pleasure in thinking of better understandings or ways to do things. Note that technology evolves, and that we benefit from countless minor advances through the years. Technology is a broad enterprise, embracing recipes in cooking and videos on how to recharge dead batteries for electric drills (jiggling the charger plug in and out of the wall socket actually works!).
- As noted above, we can take justified pride in our individual differences (uniqueness) – while striving to avoid arrogance and narcissism.
- Genetically we can take pride in our common humanity.

We noted above that an individual's success in life is not entirely within their control. We can urge people toward a certain stoicism: It is meaningful to pursue valuable goals even if you do not have as much success as you might like (but you must be self-aware about the reasons for your lack of success). We should, though, strive as a society to enhance chances of success.

Many of the above bullet points call for creativity. Two points seem relevant in this respect. First, scholars of creativity appreciate that persuasion is an important – for some scholars the most important – part of the creative process. It is not enough just to have good ideas: One must actively "sell" these ideas to others. Persuasion itself calls for creativity. Second, whether we succeed here is beyond our control, for no one person controls the selection environment for new ideas. We should again pursue a certain stoicism: If we have developed and advertised good ideas (with self-awareness!), we can laugh if the selection environment shuns these. One of life's challenges is to put energy into selling one's ideas but not be heartbroken if these efforts fail.

More generally, each of the bullet points above depends on human abilities. We can take as a general goal that we would like to enhance human capabilities. This might guide us to devote special attention to the health and education of our young. It will also open up a conversation about genetic engineering in chapter 5.

We should not lose sight of the more ephemeral sorts of happiness associated with having fun. We should want people to have fun. Again, a useful goal is to allow individuals to have fun in any way that does not interfere with the happiness of others. We can also try to reduce the amount of time that humans spend in activities (such as commuting) that they find unpleasurable.

2.2.9 Enhanced health outcomes, including mental health

One clear and unsurprising result of research on human happiness is that healthy people are much happier than unhealthy people. Healthy people are freed from pain and discomfort and able to pursue diverse goals. They are thus better able to exercise personal responsibility. All human societies make some effort to help the sick, and this is perhaps the most basic application of the human value of caring. A societal goal of encouraging human health is thus a no-brainer: The challenge becomes one of determining how much to spend on this goal and how.

We should make special note of mental health. There is still a stigma around mental health, though this is declining. Since we seek a balance between personal and social responsibility in this book, we certainly want to avoid encouraging individuals to shirk their social responsibilities. However, mental illness is real, and our goal must be to help individuals to transcend these illnesses and live happy lives. We can appreciate that this will often mean that they also are able to lead productive lives.

We tend these days to think that enhancing health outcomes is a task for healthcare systems. Our goal here is much broader, for we would hope to change society as a whole – by for example reducing pollution or congestion or unnecessary stress – in ways that enhance both physical and mental health.

2.2.10 Improved education

Humans like to understand the world around them. We may not enjoy every day we spend in school but we feel good when we grasp some idea that is of interest

to us. A properly motivated education, where students understand why they are learning particular material, is intrinsically valuable. Education has a variety of good outcomes, most obviously on our ability to be productive members of the economy and to be productive contributors to democratic discourse. (We should be aware of course that education may also serve to make children docile and prepare them to spend long hours in an office or factory later in life; and that some students leave our schools feeling unappreciated or useless. We should seek to ameliorate the negative impacts of education while building its strengths.) By increasing our ability to exercise both personal and social responsibility, education accords with key societal values. And if we believe that our society should encourage all citizens to pursue their dreams, then education must be an essential component of that belief. All human societies have devoted considerable effort to educating their young, though these efforts were often less formal than they are today. In sum, we can easily justify a goal of an educated society in which all people have access to the particular education they wish. We would wish to encourage all citizens to avail themselves of an understanding of democracy.

2.2.11 Justice

We can likely all agree that we would like a (more) just world. We might also agree that justice involves people getting what they deserve. But we can easily disagree about what comprises justice in practice, such as when we contemplate taxing hard-earned money from one person in order to provide a disadvantaged person with greater opportunity. We can seek outcomes that will be widely perceived as just, and encourage efforts at societal consensus or at least balance when different ideas of justice conflict.

2.2.12 Freedom

There is likely also a fair degree of societal consensus in most developed countries that individuals should have the freedom to act as they wish, subject to the constraint that they do not interfere with the freedoms of others. Individuals generally value freedom, though cultural attitudes often constrain freedom. We can discuss later the best balance between freedom and cultural solidarity.

2.2.13 Technology and science that supports these goals

Technology (that is, practical understanding of how to do things) and science (understanding of how the world works) are in large part means to other ends rather than goals in themselves. Yet humans take some pleasure in understanding the world around them (This is indeed one of the motivations of this book.) And as noted above, there is scope for many people to share in the joy of discovery. Our values and beliefs tend to support increasing understanding of both how the world works and how we can accomplish our goals in that world – though humans in

practice often hold tightly to opinions that are not grounded in a careful analysis of arguments and evidence.

We can of course have some qualms about certain bits of science or technology. We might, for example, wish that nuclear theory and nuclear bombs had never been discovered (though nuclear energy may prove important in the battle against climate change, and nuclear deterrents may have prevented some wars). We might then state our goal as wishing to encourage science and technology with good consequences. In practice, though, it is often difficult to foresee the effects that a particular bit of research will have.

We might devote particular attention here to the effect of technology on work. Technology has eliminated some of the most difficult manual labour on farm, in factory, and in transport. It has, though, created some incredibly boring jobs on assembly lines, and eliminated the need for many sorts of skilled artisans. We might hope for a future in which machines perform boring and physically harmful jobs, while most humans are allowed to do work that they find congenial and personally rewarding. We might also hope to achieve this transition without huge levels of unemployment along the way.

One key point to stress here is that most if not all technological innovations hurt someone. Producers of existing goods or services suffer when a better alternative is developed. Workers with particular skills (or the owners of particular machines) suffer when new methods of production are introduced. Through much of human history, governments restricted technological innovation in order to prevent the social dislocation that it inevitably created. Yet most innovations in the long run are beneficial: It is as a result of technological innovation that most residents of developed countries are able to consume a range of goods and services that their great-grandparents could not have imagined and can do so without performing the backbreaking labour that their great-grandparents took for granted. Our goal should thus not be to limit technological innovation in order to stop change (though we can encourage innovators to reflect on the likely social impacts of their innovations). But our goal of seeking beneficial technological innovation will have better short-term consequences (for both some individuals and for unemployment rates) if coupled with policies that provide economic security.

We shall see in later chapters that scientific judgement is an important input into many strategies for achieving societal goals. Since our hope is to identify strategies with broad public support, it is thus critically important that the public understand how science works. Science does not advance, as was once thought by philosophers, by proving or disproving particular hypotheses. Rather, it is now appreciated – by philosophers if not always by practising scientists – that every piece of evidence can be criticized or explained away on some grounds. Scientists thus at best slowly amass argument and evidence until scientific communities achieve consensus. The public is often understandably frustrated when scientists disagree, but it is actually only through disagreement that science proceeds. It is in disagreeing that scientists distinguish promising from misguided hypotheses. Consensus often emerges around nuanced understandings that combine pieces of previous disagreements.

Occasionally, consensus is overthrown by a new piece of evidence or argument (as when theories of relativity upended classical physics a century ago, or when careful measurement of the earth's orbit established convincingly that the earth orbited the sun centuries before that). Such scientific "revolutions" are exceedingly rare. The public should therefore not casually ignore scientific consensus, though it can appreciate that this will occasionally appear misguided in retrospect. Moreover, scientists and the public should have intelligent conversations so that scientific understanding can guide public policy even in areas of scientific disagreement.

2.2.14 The ethical challenge of our times

The ethical challenge of our times is this: How can we embrace a respect for diversity – respecting that others might choose to live quite different lives – while holding on to a set of core values on which societal cohesion depends? Respect for diversity has advanced markedly in most developed countries in recent decades, and is now a dominant attitude within younger generations. But the young often then think that there are no shared ethical values beyond the admirable support for diversity itself (and often for disadvantaged groups): that respecting diversity means allowing others to choose whatever ethical principles they wish. Yet societies function much better – politically, economically, culturally, socially – if there is some shared appreciation of values such as honesty and both personal and social responsibility. We will see in particular in later chapters that governmental institutions (formal rules) function best when these are supported by cultural values.

The reader may be surprised that we are giving cultural values such an emphasis so early in our book. Yet futurists have long appreciated that we need to understand the values and beliefs that support undesirable future trends, and seek to change these. Both "respect for diversity" and "core values" meet each of our five evaluative criteria. They have strong beneficial consequences: Respect for diversity allows each individual to pursue their own dreams and capabilities; Shared values, as we shall see, facilitate democratic governance, simplify economic transactions, and encourage social tranquillity. They accord with core beliefs and – of course – values. Those who are guided primarily by values will be strongly supportive of societal recognition of core values. Respect for diversity has not been universal in human history but has been quite common. Most historical societies have found it useful to espouse a core set of values. And both respect for diversity and shared values smooth social interaction: Both (though in quite different ways) allow us to predict how others will react to our actions. We should thus feel an intuitive appreciation of both – though, admittedly our strong human temptation to identify with small groups may at times guide us away from respecting diversity.

It may seem odd to discuss "respect for diversity" and "shared values" together. But modern societies need both. In particular, the sense of community urged above depends critically on a sense of shared purpose – which means some sense of shared values – but must also embrace a strong degree of respect for our differences. Our sense of community in turn must be strong but not structured so as to limit human

freedom. While the goals of respect for diversity and shared values may seem at first glance to be incompatible, we shall argue in later chapters that it is entirely feasible to have them both. Moreover, we will suggest that failure to achieve shared values inevitably encourages a backlash against diversity.

For the project of this book, it is imperative that we address this challenge. It may seem unnecessary to worry about values in a book largely focused on changing society's institutions. If we get the rules right, does it matter what people think? Or perhaps the right rules will inexorably encourage the right way of thinking? This was, we might note, Mao's hope for Communist China, but decades of forced collectivization did not cause people to abandon selfish urges. It turns out that it is very hard to enforce institutions if the values of a society do not support these. If most people expect and engage in corruption, it is incredibly difficult to enforce rules against corruption. Governments around the world are relaxing rules governing "illegal" drugs in a belated recognition that it is hard to enforce rules that a sizeable proportion of the population object to. Municipalities can only enforce rules against littering if the vast majority are opposed to littering. We will waste a lot of time fighting for the right institutions if we do not simultaneously encourage values that support these institutions. In turn we are much more likely to achieve desirable institutions if we achieve values that support these.

BOX 2.2: AVOIDING OVERSIMPLIFICATION

It is useful to note here that sometimes the simplest strategy for achieving a goal proves problematic. Societies cannot easily just ban the things we do not like. If we introduce laws against drugs (or prostitution), we inevitably cause people to act illegally, which introduces its own range of concerns. Likewise, introducing rent controls because we think rents are too high in a city will inevitably discourage construction of new rental units, and can easily make the situation worse over time. We cannot generally just say "We do not like X. Let's outlaw it." Rather, we have to carefully evaluate the consequences of our actions – not just for the goal we pursue but for all other societal goals. This is why we need to carefully outline a broad set of goals in this chapter, and carefully choose strategies that support all goals (whenever possible) in later chapters.

The field of "cultural studies" has long argued that political change can be achieved through cultural transformation. Yet it is not always clear what political changes are encouraged by which cultural transformations. We will essay to describe important values below, and the effects that these might have.

Fortunately for our project, there are several key values that can be justified by each of the five types of evaluation. These justifications are not perfect: One can always sketch some reason for disagreeing with any ethical statement. But we do not live in a perfect world. Philosophers provide a valuable service in noting

imperfections in any ethical argument. However, we must get on with life and accept that we will be guided by ethical precepts that are fallible. A useful guideline is this: We can reasonably insist that most people most of the time follow certain ethical precepts, but allow for occasional reasoned arguments against doing so.

If we can identify an "ethical core" of values that receive strong support from the five types of evaluation, then a society might (somehow; see below) assert that its respect for diversity need not prevent a general expectation that such values will be pursued. We will, as noted, above, allow occasional well-argued exceptions. This compromise between diversity and core values may seem odd to those raised only to respect diversity – or alternatively to those schooled only in a set of inexorable values – but is in practice not hard to imagine. We can respect diversity in how people dress, what they eat, who they date, how they establish friendships, how they party, what they see as important in life, and so on, but still expect everyone to be honest.

We can close by noting that futurists often praise diversity: Diverse groups are better able both to predict plausible futures and to identify strategies for dealing with these. And futurists also often praise values such as honesty and self-knowledge that we will recommend below, for we are better able to cope with the future if we are honest with ourselves and with others.

Honesty

Honesty has amazingly good consequences in many realms. Democracies will function much better to the extent that politicians (and media outlets) are honest with voters, and bureaucrats are honest with both politicians and the public. The economy will function much better if businesspeople can trust those they deal with, and if customers can trust the goods and services they buy. Political and economic institutions are easier to enforce if there is an expectation that people will not lie about their behaviour. Our personal lives will unfold more smoothly if we can expect honesty from our acquaintances, friends, and partners. Honesty is a value that is commonly espoused, and is reflected in many ethical rules. The vast majority of human societies have encouraged honesty. And the vast majority of us feel a little queasy when we lie.

Both personal and social responsibility

There is perhaps no greater source of ideological dispute than between those who stress our personal responsibilities to care for ourselves (and our families) and those who stress our social responsibilities. Yet the vast majority of us recognize both responsibilities. Virtually all human societies have encouraged both types of responsibility. And we feel good both when we care for our families and when we help a stranger or the broader community. There is of course an important question around the ideal balance between social and personal responsibility, and we should respect the fact that people might reasonably disagree about where to set the balance. But a

shared recognition that we (almost) all value both personal and social responsibility might take much of the emotion out of discussions of social policy, and allow us to better design programmes that help the unfortunate while discouraging sloth.

It is particularly valuable for us to appreciate that there are times in life to stress personal responsibility and other times to stress social responsibility. Our economic system functions well with each agent pursuing their personal interests – but even there it is critical that agents respect laws and cultural values rather than, say, lying to customers or bribing bureaucrats. We must be careful that the selfishness that serves us well in the economic sphere does not infuse our entire lives. When acting in the political, cultural, or community spheres, we have important social responsibilities.

Respect for others

It is often forgotten, but cannot be over-emphasized, that democracy depends absolutely on mutual respect. If we cannot respect those we disagree with, then we lose the shared sense of purpose on which shared governance depends. A democracy in which elected politicians crassly ignore opinions with which they disagree is an unstable democracy. It may be momentarily satisfying to those in power, but it will crush the spirit of those out of power. They will lose confidence in all of the organs of government. Respect is useful beyond the political realm: Trade will be easier between agents that respect each other, and social relations will be less harmful if the relatively influential respect the less influential. Yet we must admit that the case for respect is weaker than it could be. Social guidelines – in both contemporary and historical societies – often stress respect for authority figures – parents, teachers, rulers, and so on – and this may discourage the broader mutual respect that democracy requires. Sadly, humans often feel good when they display disdain for others. Yet if democracy depends on mutual respect, then the benefits of this must outweigh the selfish enjoyment of acts of disrespect. And a community with a shared sense of purpose is in the end a happier place than a community riven by mutual contempt.

BOX 2.3: UNDERSTANDING

Philosophers have long appreciated that one does not really understand any issue until one can argue both sides of it. It is fairly easy to articulate one side of an issue. It is much harder to be able to articulate why people might disagree with you (without defaulting to treating them with disdain). What are the key values and assumptions that drive opposing points of view? It can be a useful classroom exercise for students to articulate the other side of an argument that they have just made. And it is a useful personal task to try always to understand both sides of an argument. This will encourage each of us toward mutual respect. Ironically, it will also increase our chances of persuading others to our point of view, for we will better understand why they disagree with us.

Self-knowledge

Many (most?) individuals might not wish to recognize consciously how often they treat others with disrespect. They may likewise try not to reflect too much on occasional acts of dishonesty or irresponsibility. Humans have amazing capacities for self-deception, and these allow us to act regularly in ways that we would consciously disdain. There is much to be said, then, for a goal of self-knowledge. This will encourage us to be more resolute in our pursuit of other important values. And it will encourage individuals to self-actualization: to an appreciation of their goals and talents, and areas in which there is room for improvement. At the personal level, individuals with self-knowledge are much more likely to make rewarding career and dating decisions. Society as a whole benefits when individuals make good decisions. Not surprisingly, then, self-knowledge has been encouraged across all major philosophical and religious traditions. Yet we must appreciate that the path to self-knowledge is not easy, and that we may occasionally discover things about ourselves that we might regret. Still we cannot grow as humans and become the best that we are capable of without self-knowledge.

The reader can usefully reflect on how often they have observed another behaving in a self-destructive fashion: annoying others with arrogance, using anger to shield themselves from any possible criticism, exaggerating or under-appreciating their talents. These others could clearly benefit from a bit more self-knowledge. So what are the chances that you cannot? Trust me, if you have never reflected on such questions, you can use a bit more self-knowledge (but no rushing ahead to chapter 3 to find out how).

BOX 2.4: THE ETHICAL CORE

There are several additional ethical statements that arguably receive strong endorsement from each of the five types of ethical evaluation. These could be more widely appreciated:

- We should value achievement but disdain the abuse of power.
- We should help others, but not deny ourselves.
- We should care for children and the elderly, and thus support families (of various types).
- We should care for the environment.
- Love, sympathy, and humour are generally positive emotions, while hate is generally harmful.
- Though we should respect personality diversity, we should encourage emotional control, empathy, and respect.
- Charity is good.

- Justice should be pursued as a goal.
- Education is good.
- Crime deserves punishment.

We will leave it to the reader to justify each of these.

2.3 Desirable futures

Are these various goals compatible? We have already had cause to note several positive connections among these goals:

- Economic prosperity gives us the means to pursue other goals. At least some kinds of prosperity enhance happiness. In particular, work provides an important source of meaning.
- Economic security reduces fear and thus increases happiness. It enhances public support for environmental and economic policies that might disrupt labour markets.
- Enhanced democracy increases our ability to pursue good strategies for achieving a range of goals.
- Improved education likewise increases our collective ability to define and pursue good strategies. It also directly decreases inequality, and supports happiness.
- Improved health also enhances our ability to pursue multiple goals. Healthy people are happier. Healthy children learn more.
- Reduced inequality will enhance faith in democracy.
- Decreases in undeserved income enhance justice.
- Successful strategies for pursuing any broadly shared goal will enhance faith in democracy.
- Enhanced faith in democracy in turn makes people more willing to pay taxes that can be used to pursue other goals.
- Democracy enhances personal freedom and security.
- Shared values around honesty and responsibility make it easier to achieve a range of societal goals, but in particular enhance democracy and economic prosperity. Self-knowledge increases personal pursuit of key values.
- Democratization encourages peace and international collaboration.
- International collaboration allows pursuit of economic and environmental goals, and encourages peace.
- Exposure to a healthy environment makes us happy.
- A sense of community supports democracy, and is important for economic prosperity and personal happiness.

In many areas, compatibility is possible but not assured:

- Some strategies for reducing inequality may be just, but not all.
- Some strategies for protecting the environment may be economically beneficial, but not all.
- Some strategies for enhancing economic security may limit economic prosperity, but not necessarily.
- Some goods and services may not be socially beneficial.
- Science and technology support economic prosperity and other goals, but all technologies have short-term negative impacts, and some may be bad overall.
- There is some conflict between respect for diversity and the pursuit of core values. Yet without core values, we risk a backlash against diversity.
- Democracy may encourage economic prosperity, but some autocracies have enviable economic records. Prosperity encourages democracy, though there are again exceptions.
- Respect for diversity in some ways supports a sense of community, but may also detract from this. The same is true in reverse.

There are a few areas where the pursuit of one goal might interfere with the pursuit of others:

- Most obviously, certain environmental policies might limit economic growth, while certain economic policies can harm the environment.
- Some efforts to reduce inequality can infringe on freedom and justice.
- We must be careful that we do not enhance our sense of community in a way that makes international collaboration difficult.
- Some environmental and economic policies can increase economic uncertainty.

We try to capture the most important of these relationships in Figure 2.1. The reader is supposed to be impressed by the sheer number of complementarities – and should appreciate that only the most important of these could be diagrammed. There are also conflicts and uncertain relationships, to be sure, but the general takeaway should be that we can pursue most if not all goals simultaneously. Note that even where there are conflicts between two goals, there are positive relationships with other goals.

BOX 2.5: INVITATION TO REFLECTION

It is useful if readers every once in a while engage in a reflective act while reading this book. They should occasionally ask something like "Is Rick crazy?" Does the list of goals above seem reasonable? Does the discussion of their compatibility seem naïvely optimistic? Since we will spend the rest of the book discussing how to achieve these goals, this would be a good time for a discussion about whether they make sense. I have not prioritized them on purpose,

for we will seek to pursue them all in unison in later chapters. It may nevertheless be useful for the reader to prioritize goals. Also, if the reader disagrees with some of the goals above, or some of the suggestions regarding connections across goals, they should redraft the flowchart below and keep the redrafted flowchart in mind through the rest of the book.

We will in box 5.3 discuss a possible narrative exercise. Students could be asked at this point to write a short story or newspaper article that would capture a desired future.

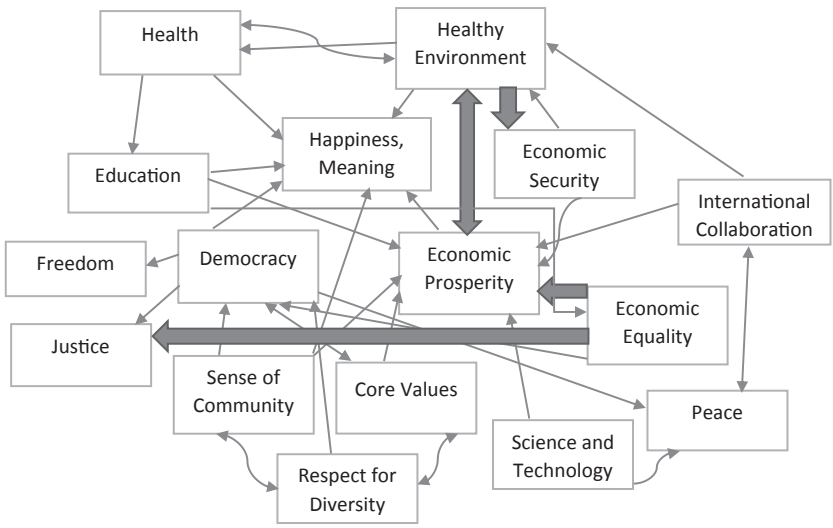

FIGURE 2.1 Compatibility among societal goals.

Note: Thin arrows indicate compatibility, wavy arrows indicate possible compatibility, and thick arrows capture incompatibility. Note that only the most important arrows from democracy and economic prosperity and core values (and education, health, and technology) have been included; we noted above that these have positive effects on many goals. Readers will have to imagine the thick arrow from sense of community to international collaboration; they somehow ended up on opposite sides of the diagram.

3

PLOTTING STRATEGIES TO ACHIEVE SOCIETAL GOALS

3.1 How to plot strategies

There is no strictly logical process for identifying strategies. This is an inherently creative undertaking. We are seeking, after all, novel ways of organizing our world in order to achieve better outcomes, and we should be prepared to "think outside the box." Futurists when advising organizations urge the gathering of diverse groups of people, and encouraging these to brainstorm freely, in order to generate ideas that might not otherwise occur to anyone (see our discussion of scenario planning in chapter 6). This chapter can be seen as a contribution to a societal-level conversation about possible strategies. We do not pretend that the strategies listed below are either exhaustive or beyond question.

People often imagine that creativity is some sort of magical process in which creative ideas just pop into the minds of lucky individuals. The truth is less exciting but more useful. All humans are capable of creativity – and we can train to become more creative. Creative insights usually follow intense periods of reflection on a particular problem or issue. The inspiration when it comes is often imperfect and needs revision. Many inspirations prove misguided upon further reflection. One then needs to persuade others of the value of one's creative insights. There is, that is, a lot of effort required in creativity (but the moment of inspiration usually comes when the mind is at rest), and we can purposely set about seeking creative insights.

We have several guidelines to follow both as we prepare for inspiration, and as we evaluate inspirations:

- We seek strategies that accord with the five types of evaluation described in chapter 2. It is important not just that our goals be broadly popular but that our means of achieving them be widely approved also.

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- We thus want strategies that accord with a wide range of values and beliefs (and traditions); we may at times wish to encourage changes in values, but should appreciate that this is a slow and unpredictable process.
- We want strategies that can be instantiated in mutually supportive institutions and values. We want to change our rules so that they guide people to pursue our goals. But rules are only strong if supported by values.
- We are guided to seek strategies that pursue multiple goals, or at least do not have deleterious effects on some goals. At times, we will be forced to seek a balance among strategies that pursue different goals. We must thus carefully examine how any strategy affects multiple phenomena.
- We are guided not to insist on perfection. Our goal is to make the world a better place, not to move immediately to some utopia. Most/all strategies are imperfect. We need to minimize imperfections, but should not be scared into inaction by these.
- On a related matter, we should seek Golden Means. We may wish, for example, to help the less fortunate but not encourage laziness, and seek a set of policies that work imperfectly toward each goal.
- We should be aware of our collective ignorance. We should be willing to suggest novel strategies, but willing also to subject these to careful evaluation.
- In what follows I will outline some general arguments for and against particular strategies. In most cases, these should be subjected to further examination in order to estimate the likely costs and benefits of any change. We should appreciate, though, that we can often only get a good sense of costs and benefits after the fact. There may be some need, then, to take small risks in testing new ideas, but we should be wary of making huge changes.

We could rephrase many of the bullet points above in the language of systems analysis. The core idea of systems analysis is that we need to appreciate that each phenomenon we might study (particular institutions or values or objects) is embedded in a larger system in which it interacts with other phenomena. We need to understand the system in order to understand how to change any phenomenon. And we also need to understand the system in order to predict how changes in one phenomenon will affect others.

The most accessible guide to systems analysis around is still *Thinking in Systems: A Primer* by D. H. Meadows and D. Wright (2009). They make a set of points about systems that are worth noting here:

- We need to distinguish "positive feedback loops," which are self-reinforcing and drive the system in a particular direction (at least for a while; investors may interpret stock market gains as a signal to increase investments, driving prices further until a market crisis), from "negative feedback loops," which tend to keep the system stable through time (as when human bodies are triggered to use insulin to reduce blood sugar levels). We may wish at times to stop positive feedback for the sake of stability, and at other times to disrupt negative feedback to facilitate change.

- Systems are generally open. That is, we can strive to identify the key phenomena involved in any system, but need to appreciate that these are in turn influenced by (and influence) other phenomena. (Our world, in other words, comprises a messy and large set of overlapping systems.)
- Systems often have players pulling in different directions (as in the war on drugs) and thus systems tend to be hard to budge, for the actions of one agent encourage reactions by others. We need to ask whether we can get different agents pushing in the same direction (as happens in wartime or when responding to disaster). Systems with lots of players with equal influence will be more stable – which may be a challenge if we want change.
- It is common for agents to not face the costs they impose on others. We can often achieve better system results by making agents pay for costs imposed on others.
- Systems may decay if people give up and stop enforcing expected standards of behaviour. We may need to ensure that we encourage good behaviour, and accept that perfection is unachievable.
- Systems may spiral out of control if agents are ultra-competitive. We need to focus competition in ways that are not destructive. One important strategy is to generate rules that all agents respect.
- One common failing of public policy is that we address symptoms rather than underlying problems. Systems analysis guides us to ask questions like "Why is there prostitution?" and guides us to address root causes. Attacking symptoms rarely achieves desired goals. (A somewhat analogous problem occurs when we set a misguided goal such as focusing on Gross Domestic Product (GDP; see box 3.2) rather than on human well-being; in this case we need to ask why we care about GDP and recognize that it is an imperfect goal.) More generally, our goal is to identify phenomena within a system that we can most easily change in desired directions, and yet these phenomena exert important influences on other phenomena in the system.

Meadows and Wright appreciate that systems thinking is complicated. They compare it to skiing or gardening: We need to have a goal in mind but adapt to events around us in our pursuit of that goal. The better we understand a system, the better we will be able to change it in desirable directions. They urge a variety of strategies. One of my favourites is creating new feedback loops so that decision-makers face the consequences of their actions (what if politicians had to go to wars they vote for?). We can also strengthen existing feedback loops by, for example, increasing government and corporate transparency and access to information: The sooner that society is aware of challenges, the quicker we can adjust. (They also urge us to carefully evaluate our goals, a point we have pursued in earlier chapters.)

I would draw an important implication from the last bullet point. Readers of this book should always be open to the possibility that there may be deeper causes at work than those I recognize. I seek to identify the most important influences at

work for every issue we discuss, but there may be forces at work within the relevant system that are less obvious but may drive the forces that I elucidate.

A further key implication follows. One way of identifying deeper causes and/or more creative strategies is to gather a diverse body of people together to discuss key issues. Consultative processes can thus add to the list of strategies outlined in this book. They will often generate strategies unimagined at the outset. I will often urge consultative processes in what follows. I note here that some futurists would put a greater stress on such processes and less emphasis on identifying workable strategies at the outset. But I think this book would not work if I never said more than "we should talk about this." I would stress, though, that I hope that there will be class discussions around many of the strategies I recommend.

I will in what follows outline a set of strategies that appear to me to accord with these various guidelines. The purpose is to illustrate forcefully that there are indeed a set of achievable strategies for charting a better future that could achieve broad societal support. This purpose is achieved even if some readers are sceptical of some strategies. Moreover, the student of this book is urged to develop further strategies. Read widely and with an open mind, and talk to diverse others….

GUIDING QUESTIONS

As noted in the preceding section, the reader can evaluate each strategy below in terms of the five types of evaluation outlined in the preceding chapter, and diagram the impacts of these strategies. We now add some additional questions: In what way do values and institutions support the strategy? What are the imperfections or negative side effects, and are these acceptable in scope? How can we identify the best balance when there are competing goals? How does each strategy affect different groups of people? How might the strategy be evaluated – both in advance and after implementation? Can the strategy be implemented gradually? What incentives do we give to agents to work toward desirable goals? Have we appreciated the relevant system and encouraged desirable feedback effects?

BOX 3.1: SYSTEMS ANALYSIS AND ARTIFICIAL INTELLIGENCE

One approach to systems analysis is highly mathematical. We could attempt to measure each phenomenon we study. We could develop a mathematical model of interactions that would predict how a change in one phenomenon will affect another. Such models have value, for they can point us

to relationships that we might not have appreciated. At our present level of understanding, though, we can have limited confidence in the prediction of any model. We do not fully understand how the world works, and have limited capability of measuring many of our key phenomena (How strongly are values held? How strongly are institutions enforced?). It is thus still invaluable to examine particular relationships carefully. That is the approach taken in this book. The reader should be aware of the danger that we may ignore or downplay important relationships through ignorance.

We now live in a world of big data, and computers regularly scan reams of data seeking hidden relationships. There is some hope, then, that techniques of "artificial intelligence" (AI) may be able to help us identify relationships of which we are unaware. By its nature, though, artificial intelligence is limited to existing patterns in data. It may prove of limited value in guiding us to goals that we have not previously achieved. Yet AI is already showing promise in a diverse range of tasks: searching complex law codes and identifying conflicts and inconsistencies; managing water and power systems, and identifying emerging environmental health challenges.

3.2 Strategies for achieving particular goals

We will deal in turn with the goals identified in chapter 2, with the exception of technology, health, and education. These will be addressed in later chapters. We will discuss freedom, justice, and meaning at many points in this and later chapters.

3.2.1 Democracy

We noted in chapter 2 that an enhanced democracy improves our ability to pursue many other goals. If, in turn, democracies prove capable of pursuing strategies outlined for other goals in this chapter, then faith in democracy will be greatly enhanced. Yet we will discuss in the next chapter some worrying trends toward decreased faith in democracy and decreased quality of government programmes. We need to appreciate both the advantages of a better democracy and the dangers of a far worse (perhaps no) democracy. It thus makes sense to consider a range of strategies for improving democracy. We start with some suggestions for improving democratic decision-making, follow with some strategies for reforming spending practices and enhancing transparency, and close with a brief discussion of encouraging democratic values.

Selection by lottery

Ancient Athens selected many of its officials by lottery. It was thought that such individuals could represent the typical Athenian. Since they need not seek election,

such officials would have no need to pander to voters. Such a strategy is tried only rarely in contemporary democracies. We might wonder if this is simply because elected politicians are wary of giving up any of their collective power. Yet we might worry that selection by lottery would bequeath us a group of officials with little aptitude for governance. However, it is not clear that electoral processes do so very well in this respect either. And modern representative democracies have the advantage of a skilled bureaucracy that can give advice to legislators whether elected or chosen by lottery. We might still worry that bureaucrats will "capture" unsuspecting legislators and persuade them to do as bureaucrats wish. We might also worry that special interests will "capture" these legislators through lobbying. Again, this is hardly a challenge to which elected legislators are immune.

As with any novel strategy, it is advisable to start small. We might decide, for example, to choose one tenth of legislators by lottery. If they prove incompetent, we will find out soon, and can rely on the other 90 per cent of the legislature to carry on much as before. It may be, though, that those chosen by lottery will be less in thrall to ideology and more willing to seek compromise than their elected peers. They may serve to reduce ideological battles and encourage cross-party collaboration. (Or maybe they get stuck on misguided principle and bring legislative processes to a grinding halt.) They might also prove able and willing to fight corruption among their elected peers.

Even a small number of legislators chosen by lottery might do much to restore faith in democracy. Many voters have come to think that all elected politicians are corrupt. Legislators chosen by lottery might be able to convince voters of the rationale for government policies – especially if legislators chosen by lottery were able to achieve better policies.

If selection by lottery reduced corruption, there would be economic benefits: Government contracts would more likely go to the best firm for the job, and government regulations would not be biased toward the interests of particular firms. If selection by lottery calmed partisan bickering within legislatures, it would enhance social peace beyond the legislature. If many of those chosen by lottery proved competent and virtuous, this would enhance our collective respect for "average" members of our community. And citizens could identify with their successes ("I too might have been chosen by lottery and would do similar things") and feel good about legislative processes. Selection by lottery both reflects and reinforces values such as mutual respect, as well as the core belief of democracy that government decisions should reflect what typical people believe and want.

The reader may have been surprised that we have started with such an unusual suggestion. Yet the challenge of contemporary democracy can be encapsulated as this: a concern that elected politicians and bureaucrats serve their own interests rather than the interests of the typical citizen. The direct antidote to such a concern is to give typical citizens a direct say in governance. This can be seen as a "feedback loop" in which the average citizen has an immediate impact on public policy. No other selection mechanism can guarantee typicality. Do we want to be governed by

ourselves? Do we trust ourselves? Do we think that the average person can exercise good judgement if acquainted with relevant information?

Consultative assemblies

A lottery can also be employed to gather a random group of citizens to debate particular issues. Such a gathering can provide useful guidance on how the populace as a whole would likely view a particular complex issue. Such a gathering also has the advantage of focusing attention on one particular issue at a time – though participants should be advised to carefully consider interactions with other phenomena. It is thus one means of addressing the complexity of modern governance. Note that such assemblies must be given a clear purpose lest their conversations become diverse and unproductive.

Members of such consultative assemblies can receive presentations from both experts in a field and from interested parties. Assembly members can ask questions. Then they can engage in discussions among themselves. If an assembly can achieve broad consensus on particular policy proposals, we can have confidence that the wider population would also agree if similarly acquainted with the issue. Notably, it is generally observed that participants in such assemblies soften their views and move toward consensus as they come to understand and respect those they disagree with.

One key challenge in democratic governance is, after all, that the average person has neither the time nor the incentive to become deeply informed about every issue that modern governments must engage. The citizens' assembly serves to tell us what the people would think if they were given the time and reason to study a particular issue. However, this will only work if they have some confidence that their suggestions will be adopted. The advice of consultative assemblies, when these have been attempted, has often then been ignored by politicians – itself a clear sign that politicians may not be acting in full accord with the people they represent. It may be possible in some cases for legislatures to delegate decision-making power to such gatherings. It may be possible in other cases for such a group to trigger a referendum if politicians do not act – though such referenda need then to be properly funded (see below).

Consultative assemblies are particularly useful for issues where ethical concerns and analytical evaluations are closely intertwined. Policy on drugs is one such area. Should we treat drug addiction like a crime or like a health issue (or a bit of both)? Consequential analysis clearly depends on estimates of how addicts will react to different policies. Yet assembly members guided by values or emotions or beliefs will also be influenced by such analyses: Should I be angry or caring? Is compassion or tough love called for? If a random group of citizens can achieve consensus, then the wider society should appreciate that the best balance between competing beliefs and values has been struck. A consultative assembly in Ireland grappled with divisive issues such as abortion and same-sex marriage in such a way that later referenda were passed by a very large majority.

Consultative assemblies are also useful when society needs to strike a balance between competing goals (our preceding discussion of drug policy might also fit here, for we seek a balance between – at least – enforcing the law and showing compassion). Social policy often faces a contest between treating the unfortunate with compassion and encouraging everyone who can to get a job. A consultative assembly, after being acquainted with detailed information on the actual lives of the very poor, would be well placed to make a decision about where the best balance is struck. Moreover, they may suggest creative solutions to deal with at least some cases: Outsiders are often able to see things that those immersed in an issue fail to see (and, sadly, those who get paid to deal with a problem may naturally do better at managing it than at solving it and putting themselves out of a job).

A third situation in which consultative assemblies might be particularly valuable is where politician self-interest presents a real barrier to making the best decisions. The rules governing elections and fundraising should generally not be set by people who have benefited from the existing rules. Non-politicians can best decide restrictions on politicians' power. We need, that is, to add links to our systems of decision-making that restrain the power of decision-makers to pursue selfish goals.

How many consultative assemblies can we have? If these assemblies can only affect legislation indirectly by stirring up public opinion, then they must be rare and well publicized. If, though, we can think of clever ways to give them actual power, then we can have many assemblies focused on distinct issues. The cost of these need not be huge. If their advice is actually translated into law, then improvements in governance and restored faith in democratic decision-making will surely justify paying some random citizens for a couple of weeks or months of their lives.

Though consultative assemblies are useful at all levels of government, it may well be that these are easiest to introduce at the local level. Indeed, some localities already use such assemblies to rank spending priorities – and have found that citizens gain an appreciation of the choices governments face through such a process.

Individual elected representatives might also invite randomly selected constituents to participate in an informal discussion of some key issue. But such representatives would need to commit to actually paying attention to what constituents said.

If consultative assemblies can have an important influence on public policy, they can do much to restore confidence in democratic governance. Notably, consultative assemblies have been found in surveys to be particularly attractive among voters with limited political influence and with suspicion of political processes.

Referenda

Referenda are another way of handling the sort of issues addressed in the preceding section. They may be the best alternative when a societal balance is particularly hard to strike, and we need then to be sure that we are indeed consulting a representative sample of the population. (The whole population is the only precisely representative sample of the population – though note that in most countries a sizeable proportion do not vote.)

The challenge with referenda is that voters again have little incentive to become deeply acquainted with the issue, for rarely is a referendum decided by one vote. Inevitably, then, many will vote without fully understanding the repercussions of their choice. Referendum campaigns are rarely an exercise in careful analysis, but are often characterized by misinformation and appeals to emotion.

Referenda are most useful when politicians' self-interest is thought to work against the public good. (Campaign finance reform, rules governing corruption and compensation, and insistence that constituency boundaries be drawn by an arms-length commission rather than politicians, are but three examples.) There should thus be some capacity for appeal to referenda in all democracies. It should probably not be too easy to trigger a referendum, for we do not want excited minorities to force unpopular referenda on the wider population. There should probably be a provision whereby signatures of a sizeable proportion of voters can force a referendum (a third? surely a half should be able to force a referendum?).

Whereas selection by lottery and citizens' assemblies can pursue consensus, referenda tend to accentuate social disagreements. This tendency can be minimized if, when possible, voters are given more than two choices and the ability to rank their choices. In such a situation, voters will often choose some sort of compromise between opposing points of view.

Referenda also suffer from focusing on one issue at a time, ignoring the connections between issues that are so crucial to good governance. Voters might pass a referendum that says "Increase spending on X," but also a referendum that says "Reduce taxes." Good governance requires that we recognize the trade-off between taxes and spending. We might insist that referenda be revenue-neutral: Any proposal to cut taxes has to stipulate where spending would fall, and any proposal to increase spending must stipulate where the money comes from. We would need to have some trusted arm of government that would confirm that the numbers add up.

In jurisdictions where referenda are allowed, they might usefully be employed to introduce selection by lottery to legislatures, and to allow citizens' assemblies to make certain decisions. Yet again we are adding to our system of decision-making in order to reduce the ability of those in power to serve themselves.

Corporatism

There must be a better word for this! But the idea is simply that representatives of different groups in society meet to reflect on public policy. There are several advantages. Most obviously, doctors or bakers may see side effects or opportunities that are not obvious to lawyers and politicians. Governments can quickly gain the insights of multiple stakeholders by gathering them in one room. And by engaging in conversation, different groups come to understand each other. We are thus in a better position to hammer out a policy that works for most/all groups and takes into account the concerns of all. Corporatist consultation also reflects the insight that diversity encourages creative decision-making: Gathering individuals with quite different life experiences is a powerful means to encourage novel ideas.

One challenge is that these sorts of consultative bodies will be more effective if they are confident that they will be listened to. I have sat through way too many government consultations where the government seemed only to hear what it wanted to hear. Governments need to actually respect the people they gather enough to listen to what they say.

In the 1990s the premier of my province gathered such a body, with representatives of teachers, school boards, nurses, hospitals, farmers, entrepreneurs (lots of them), mayors, community groups, arts groups and so on to plot general strategies for the province. As I told my friends at the time, it was a gathering of 100 leading Albertans plus me – as the (youthful, I leap to emphasize) representative of university and college faculty. The premier would ignore our hundreds of recommendations after we failed to give the desired "cut our taxes," in favour of a more nuanced "only cut our taxes if we can retain quality public services." But the conversations were viewed positively by the participants and there was a general desire to keep meeting. I recall in particular several interesting interactions with the representative of the province's chicken farmers. The government for some reason decided that it did not want us to be regularly evaluating its non-action on our recommendations. The outcome could have been quite different, and a government that wanted to listen and wanted to achieve policies with broad support might have found our deliberations useful.

We might consider giving some authority to such bodies. But that raises a host of practical problems: Where would they fit in legislative processes, and how do we ideally weight different groups (with the ideal perhaps varying by issue)? There is also an important risk that the process becomes politicized if representatives wield real power. Political parties might then seek to interfere in decisions about who will represent plumbers, and that representative may be more beholden to the party than fellow plumbers.

Beyond its direct political effects, such deliberative bodies might help to foster a greater degree of respect and community. They could serve as an exemplar that people from quite different backgrounds can get together, achieve mutual understanding, treat each other with respect, and achieve some consensus on at least some issues. Such "corporatist" consultations have been tried in many times and places. They would arguably have been more widespread in human history if more rulers had been guided by respect for their citizens. Such consultations could build on values of respect and open dialogues. Participants that are guided by respect will find the proceedings rewarding, especially if the recommendations are heeded.

Beyond the effect on public policy, these consultations can play an important educational role. Systems theorists worry that agents do not appreciate the role they play in a larger system. By engaging with others, and coming to better appreciate the impacts they have (and are perceived to have), agents may be motivated to change their behaviour in a way that is beneficial to others.

It should be stressed that these corporatist consultations can be very inexpensive. Group representatives are generally willing to volunteer a few days of their time, and their groups can finance some moderate travel expenses. Governments need to

rent some meeting rooms and order some food. Those who worry about government expenditures can rest easy.

Devices for incorporating expert advice

Many of the strategies to be outlined in this book are fairly easy to grasp and communicate. This is generally the case for strategies to reform institutions of governance themselves. But when we discuss economic strategies, there is often a considerable challenge in translating the basic principles behind a strategy into precise policy proposals. Whether regulating financial activity or stimulating technological innovation, it is all too easy for desirable goals to be under-achieved through faulty implementation. One obvious challenge is that the average voter cannot be expected to grasp the minutiae of financial regulation or technology policy. There is considerable scope for addressing this challenge through a citizens' assembly. But such an assembly is best at determining the best balance that policy should seek rather than itself drafting a detailed policy. After all, the financial regulations of a modern developed economy run to thousands of pages. A second challenge is that those to be regulated or subsidized are far better able to mobilize a lobbying effort to influence policy than is the wider public. Scholars often speak of "regulatory capture" whereby those who are regulated slowly influence policy in ways that benefit them. There need be no evil intent here but just the fact that regulators spend most of their time interacting with the regulated and inevitably come to accept some of the latter's point of view. This can at times be a good thing, if regulation is unnecessarily burdensome, but it can easily lead to policies that are not in the best interests of society as a whole.

How then can we best ensure that dispassionate expert advice drives the development of complex policies? (In systems lingo, how can we strengthen the link from expert understanding to public policy, while reducing the link from special interest pleading to public policy?) A skilled public bureaucracy is critical here, but we have just seen that this can easily be captured too. We want experts that are equally acquainted with all sides of an issue: how a regulation will affect firms, workers, consumers, and tax revenues. We want experts that will honestly and transparently evaluate the effects on each, and design complex policies that achieve a desirable balance. These experts might defend these complex policies before a citizens' assembly that might also hear presentations from representatives of all affected groups.

We have, we should note, already taken the step of allowing one important area of economic policy to be run by an arms-length group of experts. Central banks in most countries operate very independently from elected governments – though the latter occasionally politicize the choice of central bank governors. There has been a general acceptance that people need to have confidence in their currency and their banking system, and this is best assured if the major decisions are made at arm's length from elected officials. Citizens occasionally complain vocally about particular central bank decisions (I thought we should have fought inflation less

zealously for years), but there is a general acceptance that central banks should be independent. We also have arms-length securities regulators in most countries, but politicians determine the rules that these enforce. We should consider expanding the independence of financial regulators. As noted above, we might provide some oversight by citizens selected at random as a protection against both regulatory capture and expert error. We should appreciate that experts have their own biases which may get in the way of socially ideal policy.

We should carefully evaluate all government policies. It may be especially important to evaluate complex economic regulations. There is a lot of money at stake, and therefore great incentives for the exercise of inappropriate influence. We need experts, then, both to design policies and to evaluate these after their implementation. It will be a very good idea if we have different experts perform the two tasks, for we tend naturally to like our own ideas. One possibility is to choose randomly from among recognized (by those in the relevant field) groups of experts.

We should recognize in all of this that experts are not infallible. We can usefully ask where the expertise comes from. Experts will be most reliable when dealing with repeated situations: An expert who has analysed several financial crises (especially if they were rewarded or punished for their handling of these) will be well placed to give advice on how to avoid or prepare for the next one – unless the next one is very different in some ways. Experts, we should recognize, may be more confident than they should be in their ability to engage with novelty. It is useful, then, to have expert advice subject to scrutiny from diverse agents who might spot novel challenges ignored by experts.

We can pause to note here the challenges in achieving political change: Providing a stronger link between (relatively) unbiased expertise and public policy may have a dramatically positive impact on the quality of public policy, but may nevertheless not inspire a lot of protest banners or bumper stickers ("Power to economists and accountants!"). A greater appreciation of the system of public policy formation may inspire greater public interest in this linkage.

Dispassionate sources of information

The French philosopher Marquis de Condorcet noted one huge potential advantage of democratic decision-making way back in the eighteenth century. If we assume that the average person makes good decisions even slightly more often than bad decisions, then (he showed mathematically) we are very likely to get a good decision if we combine the opinions of a large number of people. But this result depends crucially on people having access to good information about the issue at hand. We cannot assume that the average person will make a good decision if they are relying on limited or biased information.

Where can the average voter turn if they want unbiased information on key issues of the day? Voters can only act if they first understand the issues, and thus the link from information to voting (and urging others to vote in certain ways) is critical. We have recognized above that the typical voter has limited incentive to

master public policy issues, and we should thus be keenly interested in lowering the cost of doing so. Many media outlets have clear ideological or party preferences. The open-minded voter can consult competing sources. Given the constraints on voters' time, it would be advantageous if there were outlets that sought to provide dispassionate analysis in support of broad consensus around complex societal issues. I should stress the word "analysis" here: The long-standing journalistic practice of getting quotes from two people who disagree and filing that as an unbiased report does little to advance human understanding. We need to transcend differences of opinion, understand the sources of disagreement, and attempt to integrate the best of opposing points of view.

If I am correct that most people want sensible but novel approaches to a range of public policy issues, then there should be an audience for precisely the sort of analysis recommended here. I am less clear on how this audience can be induced to pay for this content. This may be a task that calls for support from charitable foundations. Government support might invite political interference – unless we engage strategies for having voters directly determine certain sorts of spending (see below).

Democracy rests on the right of people to make bad decisions. We must embrace that right – respecting those we disagree with no matter how appalled we may be by their decisions – while trying to limit its exercise through a combination of good institutions and sound arguments around public policy. We have suggested a few institutional improvements above, and seek here to provide voters with ready access to information that will help them make good decisions.

Reducing short-termism

Futurists and others often bemoan the fact that politicians face strong incentives to focus on short-term problems rather than engage in long-term planning. Public pension plans may be actuarially unsound in many jurisdictions but politicians avoid raising taxes in the present to address a problem that will not explode until long after the next election. Politicians have been slow to address climate change also because the costs of doing so will be incurred now but the benefits extend far into the future.

It is not just politicians that face short-term incentives. Bureaucrats also can be tempted to focus on present emergencies rather than planning over a long horizon. And business leaders may be guided more by short-term fluctuations in stock prices than concerns about the long-term trajectory of their firm.

There is no single solution to this problem. But there are many partial solutions:

- We can change values so that the concerns of future generations are weighted more heavily by voters. Arguably, this has happened to some extent with respect to climate change.
- We can create some organ of government that advocates on behalf of future generations – but this will only be useful if voters and politicians pay attention to what it says.

- We can place certain types of long-term planning in the hands of arms-length experts (see above).
- We can encourage politicians, bureaucrats, and voters to engage in the sorts of scenario planning exercises encouraged by futurists (see chapter 6). More generally, we can insist that governments carefully evaluate the future implications of their policies.
- We might develop constitutional requirements that politicians and bureaucrats take the interests of future generations into account (Wales has done so in the United Kingdom). Forcing politicians to explicitly justify actions that hurt future generations might encourage more forward-looking policies.
- We can require governments to report regularly on how they are addressing long-term challenges – but this will only work if voters pay attention to such reports.
- More radically, we could give more votes to young people, or perhaps parents of young children.

Campaign finance

The whole purpose of democracy is defeated if one group of voters has disproportionate influence on democratic decision-making. The rich may at times have the best interests of the public at heart – they do, after all, depend on society functioning well – but they can also be expected to pursue their own interests. They will encourage low taxes on the rich, regulatory rules that give their firms an advantage, and perhaps labour and environmental laws that enhance their economic power. If politicians can be bought by the rich, then democratic decisions will be biased, and faith in democracy weakened. The very survival of democracy depends on the link from economic power to political power being limited – and being seen to be limited.

We will below make one bold proposal for reform of how political parties are financed. We make here a more general plea for efforts to reduce the influence of money in politics.

One important policy is to prohibit corporate (or union) donations, not just to parties but to "political action committees." Corporations are not people, and corporate executives cannot know the political preferences of shareholders. Corporate donations must thus either be an abuse of power by executives or must represent a calculation of what policies will increase corporate profits. We should want political campaigns to be financed by people, for these at least potentially can have societal well-being in mind. Another useful policy is to at least insist that the names of donors be disclosed: Voters should know who is providing large sums to particular candidates or political action committees. Some jurisdictions provide matching funds for small donations (sometimes in multiples of that donation).

Ranked ballots

Elections in which voters can rank their preferences for multiple candidates can potentially have many advantages, especially if they have a choice between multiple representatives of particular parties:

- Most obviously, power is transferred from parties to people.
- Voters may find that the incumbent from their party has not lived up to their ethical standards but find it difficult to vote against their party. With ranked ballots they can choose a (apparently) more ethical representative of their favoured party.
- Voters get to rank the candidates from all parties, and thus are collectively less likely to choose politicians with extreme views.
- Ranked ballots increase a little the probability that one (complex) vote matters.

Government programme evaluation

We have and will at many points in this book suggest strategies that involve spending government funds. All of these strategies can be far more feasible – far more likely to gain broad public support – if we can increase voter confidence that funds are spent well. Political debate is too often dominated by people on one hand that have never seen a government programme that they disliked, and people on the other hand that have never seen a government programme that they liked. The sensible middle ground is that governments are fallible, that all government programmes need to be regularly evaluated and improved, and that some government programmes may not be worth it. We should not need to fear that any new programme will last forever no matter how misguided it proves – nor that a programme will be cut for no good reason before it has a chance to prove itself.

Those with a suspicion of government often advocate across-the-board cuts of government spending. Unless one truly believes that all government programming is a mistake, it is hard to justify this strategy. If one thinks that bureaucrats are empire-builders who squander taxpayer money in order to expand the size of their bureaucracy unnecessarily, how can one then be confident that they will resolutely cut the "fat" in a budget crunch? If they cannot be trusted to spend money wisely when governments are growing, how can they be trusted to do so when governments are contracting? The strategic response of an empire-building bureaucrat would be to make cuts that will cause the most complaints.

While rare small across-the-board cuts may inspire some limited bureaucratic cost-saving (as business cycles do in the private sector), there is simply no sound alternative to direction from the top about what programmes need to be reformed or removed. This also should not be done on a political whim but should reflect careful evaluation of the costs and benefits associated with a particular programme. In the imperfect world in which we live, we have to expect that some government programmes simply cannot achieve their goals in a cost-effective way.

The first challenge is getting evaluations that we can trust. This will require us to hire unbiased external consultants. The second challenge is that the benefits of government programmes are harder to estimate than the direct costs. Negative side effects on other societal goals will also be hard to measure precisely. Nevertheless the task must be done as well as we can do it.

The bureaucrats who run a programme can be expected to believe in it. They would live quiet lives of desperation otherwise. (There is nevertheless considerable

value in providing bureaucrats with some incentive to report wasteful practices. Those who are involved in programme administration have the best opportunity to spot inefficiencies. They may be able to overcome psychological incentives to ignore these but cannot be expected to risk their jobs in reporting stupidity.) Those who benefit from the programme will likely also see it as a good thing. They will have selfish motives for doing so, but unless very self-aware, will likely imagine that what benefits them is good for society as a whole. The third challenge, then, is that programmes that seem to cost more than they are worth will still have vocal advocates.

This leads to the fourth and critical challenge: *It may be politically dangerous to cut a programme, even if we are sure that the costs exceed the benefits.* Those who benefit from a programme will know very much how much they benefit, and will be prepared to lobby and vote and bribe to protect it. The costs are generally both more diffuse and invisible: We may suffer as taxpayers or as consumers from a higher price due to a tariff or regulation. We each suffer only a little from any one misguided programme, and thus are unlikely to bribe or lobby or make our vote depend on cutting it.

It could well be that citizens' assemblies or legislators selected by lottery will be less likely to be swayed by the vocal minority. Another possible solution to the fourth challenge is to package a set of reforms together so that the savings become large enough to motivate the typical taxpayer or consumer – and ideally for even those who benefit from one programme to appreciate the gains from abolishing others, and thus find the whole package acceptable. Unfortunately people tend to feel losses more keenly than gains, and may thus evaluate such a package negatively even if they gain more than they lose. They may well reason that their losses were the results of evil intent while the gains were simply common sense.

We might also strive for broad public acceptance of a key principle: If both experts and the broader public agree that a programme does more harm than good, it should be cut despite the vociferous objections of beneficiaries.

Some of the hardest programmes to address are those that protect particular firms, or groups of workers, or groups of farmers. It may become easier to change such programmes if we can achieve greater economic security more broadly. Such reforms may also be easier to achieve in a time of economic prosperity – but sadly governments tend to care more about saving money when times are tough.

Given the challenges of evaluating programmes after they are introduced, it becomes especially important to take care in creating new programmes. We should not allow ourselves to be frightened into inaction. But one useful activity is a "premortem" (a term I borrow from Daniel Kahneman, who in turn borrowed it from Gary Klein): Those advocating a new policy or programme should be provided with a scenario in which the initiative is later judged a failure and asked to explain why. They may be guided to recognizing challenges that should be addressed at the time of introduction. An alternative idea is to ask advocates of a new policy to estimate the likelihood of its success: This also forces reflection on what might go wrong. Large organizations might pursue a third idea of designating a team to pretend to be the organization's competitors or opponents and ask how they would

react to the new policy or programme. The main lesson here is that we are more likely to make good decisions if we are keenly aware of what might go wrong.

Recognizing all the costs and benefits of new programmes

We have spoken at great length in this book about the complexity of the world. We should thus have a healthy suspicion that there may be valuable programmes that are valuable precisely because they have a range of beneficial effects. We can think here of public healthcare. The COVID-19 pandemic was a powerful reminder that universal access to healthcare can have benefits for the entire population. Healthcare does not just benefit the individual, but reduces their chances of infecting others. In a world that experiences epidemics every few years, that benefit deserves more attention than it has received in the past.

Are there programmes that might deserve consideration because of the wide range of benefits they might provide? Here are a couple of examples worth subjecting to careful evaluation:

- **Pharmacare.** Governments subsidize some kinds of healthcare in all developed countries, but only rarely subsidize drug purchases outside of hospital. One important benefit of pharmacare is that at present both doctors and patients extend hospital stays for the simple reason that drugs are covered while in hospital but not beyond. Another potential benefit is that governments might be able to negotiate better prices with pharmaceutical companies. The net cost to taxpayers of a switch to pharmacare may thus be much less than it seems.
- **Homes for the homeless**. This not-surprising solution to homelessness has been tried in a few localities. The idea is that the homeless are better able to get their lives together if provided with a home. The home can be very small (they do not have much stuff) but should provide the security that they cannot find in most homeless shelters. The no-longer-homeless then spend far less time in police cars, jail cells, and emergency wards, all of which are hugely expensive places to care for people. And some then are able to get jobs, providing further benefits to the wider society. Society can also appreciate not having to step over the homeless on the streets.

The message here is that we may be able to pursue some societal goals at little or no net cost to society. We are prevented from doing so by not fully appreciating the full range of benefits of certain policies. We need, that is, to engage in *systems analysis*, looking at a set of interrelated phenomena simultaneously.

Direct expenditure by taxpayers

It is entirely possible that decisions about certain kinds of spending can be made directly by voters themselves. We then establish a direct link from voter preferences to detailed public policy. A government might decide that a certain amount per

taxpayer (say $5) was going to be spent on the arts, or sports and recreation, or even projects of urban renewal. Taxpayers could then indicate on their tax return where they want their money to go. The administrative costs can be negligible if most tax returns are filled out online. Art galleries and sports clubs might need to put more effort into their websites so that voters can quickly acquaint themselves with what the organization does. But we would no longer need a government bureaucracy devoted to making allocation decisions. More importantly, (most) citizens get some say over how their tax dollars are spent, and can hopefully identify organizations that they feel good about supporting. This may mollify those who worry about taxation in general. It is likely that many/most taxpayers will incur some pleasure in identifying some worthy beneficiary of their tax dollars. And if some taxpayers cannot be bothered to name a beneficiary, then other taxpayers get to allocate their money too.

There may be challenges. Maybe local art galleries get funded at the expense of national art galleries? Maybe "popular" art forms get funded at the expense of "highbrow" art forms? But if these are what taxpayers wish, is that really a problem? And is it a problem or a good thing if obscure sports popular only within certain ethnic minorities gain more funding than they do at present? (We can hope, and strive to ensure, that disadvantaged groups are not further disadvantaged.)

There may be unseen advantages. Perhaps some community will develop an idea for a popular art project that gains support from distant taxpayers, and that later becomes a tourist attraction? Who knows what sort of creativity might be unleashed by this sort of decentralized decision-making?

As with most novel ideas, it is best to start small. If the policy works in trial areas – funds get allocated in a reasonable manner, taxpayers like the power to make decisions, innovation is facilitated – then governments might apply it more widely. Maybe non-governmental organizations (NGOs) could compete over certain kinds of social spending? There will undoubtedly be limits: We probably do not want voters picking weapons for the army.

Governments might find that it makes sense to allow each taxpayer to spend the same amount in some areas (where it seemed a democratic principle), but to instead have each taxpayer direct a certain percentage of their taxes in others. The latter strategy is less democratic but may give those who pay high taxes a greater sense that their taxes are spent wisely. It may thus reduce antipathy to taxes among those with high incomes.

It might be especially useful to apply this idea of taxpayer funding in the political arena itself. Taxpayers could be required to indicate which political party they wish to support with their taxes. Political parties might then be forbidden to take funds from other sources. This would have the obvious advantage of limiting the influence of the very rich on political processes. It would also divert the energies of political parties: Where they must now devote much of their energy to raising money they might instead debate policy. (Some governments subsidize parties on the basis of the votes they receive. This unnecessarily complicates voting decisions. And it gives voters no way of rewarding or punishing parties between elections.)

As with any sort of government expenditure, we must justify governmental support of political parties. The argument here is simple: Politicians struggle to raise thousands (sometimes millions) of dollars in order to get elected, but once elected make decisions about billions (trillions) of dollars. The invitation to corruption is too obvious. It is all too tempting for the rich and powerful to fund candidates who will make decisions that benefit them. Nor do we need explicit corruption: The basic human tendency to return favours will encourage even the most ethical politician to bend decisions toward those that donated to their campaign. We do not have to assume that politicians are very corrupt or biased in order to predict a net benefit to government budgets if we free politicians from the need to beg for donations. The argument here is based on the huge order of magnitude difference between the funds required for a political campaign and the funds that elected officials have influence over spending. In addition to the real benefits, there is the important fact that funding becomes more transparent and thus voters can have greater confidence in political processes. Voters cannot be expected to have confidence in political leaders as a group if they have suspicions about how they get elected in the first place.

Political parties are not the only players on the political stage. Taxpayers might be asked to fund issue-oriented political advocacy groups. These might take on the hard task of developing detailed policy proposals. The rich and powerful have no difficulty developing detailed and self-serving proposals. The mass of taxpayers has a harder time getting organized but can if acting in concert develop detailed proposals that serve a wider interest. They can then engage in public advocacy of these proposals.

There is much talk these days of public subsidies of media outlets. But many observers cringe at the thought of politicians subsidizing those who report on them. If – and it's a big if – such subsidies are warranted, it would be far better to let voters themselves decide. To be sure, some voters will opt to support media outlets that provide extremely biased information. But our hope for democracy must rest on a hope that most voters want to think for themselves. They might then choose to fund sources of unbiased information as recommended above.

Transparency

The complexity of modern governments is a huge problem for democratic governance. This problem may be more obvious to some voters than others, but is no less real for that. Voters cannot be expected to monitor all of the many activities in which their governments are engaged. We might hope that different voters with different priorities will keep an eye on different government programmes (and can then appreciate some advantage to the common electoral practice of micro-targeting whereby politicians send targeted messages to voters with certain identifiable characteristics – but we must count against this the enhanced ability to promise different things to different voters). Yet elections tend to pivot on a handful of issues and thus most politicians face little incentive to care deeply

about the full range of government activities. We noted above that the link from information to voting behaviour is of critical importance and see here another way in which this link needs to be strengthened. Whatever one may think of the practical problem here, there is a huge problem of appearance: Voters know that government is complex, and that democratic oversight is limited. It is quite understandable to then worry that much of their taxes are wasted on initiatives that may do more harm than good.

We have already suggested above some ways of dealing with complexity. Taxpayers might spend some funds directly. Consultative assemblies might make some allocative decisions.

One simple policy that might be easily implemented in an era of (increasingly) online tax filing is to tell taxpayers how their taxes were allocated. That is, we can take the proportion of total tax revenue spent on each major type of expenditure, and apply these proportions to an individual tax return: We spent $X of your taxes on the armed forces, $Y on healthcare, $Z on roads, and so on. Arguably, taxpayers have a right to this information: They should be told how their tax money is spent. One complication here is that the voter pays taxes to and receives services from different levels of government, and will thus have to put calculations together (especially in the case of something like roads, which tend to be financed by national, regional, and local governments). Still, taxpayers might then be in a better position to judge whether they are getting a good bang for their buck, and focus their ire on particular programmes rather than government as a whole (with more focused objections much more likely to lead to positive change).

How, though, can we be confident that governments are spending money wisely *within* programmes? We may at times be concerned by the total size of a particular programme's budget. But much of the time we can only be sure that a programme is spending wisely by looking at detailed budgetary breakdowns. There is much that can be done here:

- **Publish online as much detail as possible.** It is now quite easy for governments to provide a great deal of online transparency. Many developing countries have found that they reduced corruption by simply publishing how much was spent on particular programmes in particular localities: Locals then knew when local officials were siphoning off funds. Many politicians and bureaucrats in developed countries have been shamed into trimming their expense claims by public transparency. It is much easier to spot corruption in any country if the terms of government contracts are published. But public scrutiny can address ignorance as well as corruption: Voters may be able to tell governments how to access less expensive goods and services. Beyond its practical benefits, transparency has the important benefit of making government expenditures seem less suspicious. Those who complain about government waste now have an enhanced opportunity – and duty – to identify that waste. (The Open Government Partnership is a grouping of governments and NGOs that pushes for enhanced transparency.)

- **Pay more attention to auditors.** Most governments have their books audited. And auditors' reports often make a big splash: Every year the auditor exposes a few cases of flagrant stupidity or malfeasance. But there is no organized follow-up. It is hard for voters to know if or how well governments have followed the auditor's advice. Yet this could and should be one of the main criteria by which voters decide whether to re-elect a government. Auditors should clearly grade government progress in addressing problems.
- **Query budgets in legislatures.** Legislators could also play a bigger role in querying government officials about particular expenditures. We might imagine a rotation in which the detailed budgets of different departments receive detailed scrutiny.

A final but critical institution is whistle-blower protection. If a bureaucrat becomes aware of wrongdoing by others, they need to be able to "blow the whistle" without fear of losing their job. These protections need to be formally enshrined and carefully enforced. A whistle-blower's superiors will often be embarrassed by the whistle-blower, and will be tempted to fire the troublemaker if they can and make their life miserable if they cannot. Whistle-blowers may then need a right to be transferred to a different office. As with all institutions, there is a potential downside: We do not want to encourage bureaucrats to lodge false complaints just because they are annoyed with co-workers. There needs then to be some adjudication of whether the whistle-blower had cause to complain. The bar should be low here – it may sometimes be difficult to prove the alleged wrongdoing and so we cannot insist that this be clearly established – but it should usually be possible to distinguish legitimate from illegitimate complaints. Obviously, the adjudication should not be made by those who are complained against.

A civics lesson

What on earth are we teaching our children? As much as politics may be polarized these days, there is hopefully still consensus out there that we should be doing a better job of explaining democracy to our children. And perhaps we just need to be honest with them. Stirring portrayals of democracy may too easily lead to disenchantment later in life. We should be honest that government is complex and voters ill-informed. But we should rejoice in our ability to complain about politicians and programmes we dislike. And we should celebrate constitutional limits on the abuse of power – and remind our young of the terrible atrocities committed (mostly) by authoritarian regimes. We will see in later chapters that we should not presume that democracy will always be maintained; we should teach the young that democratic freedoms need to be valued and fought for. Most importantly of all, we need to teach them that democracy depends absolutely on respecting (and seeking to understand) those we disagree with. Eternal vigilance is the price of freedom.

One key tenet of this book is that we need to work toward *both* good institutions and good values. It is a mistake to think that the future of democracy is guaranteed

by the right institutional structure. The checks and balances in the constitution of the United States are indeed laudable, but constitutions explicitly modelled on it in Latin America and the Philippines have often been set aside by autocrats. Constitutions cannot foresee every circumstance, and must in practice be supported by a set of values. Individual voters need to respect each other. And we need to police those we elect to ensure that they do not abuse their power in ways that threaten an independent judiciary, or media, or army.

Summing up

We have spent much time suggesting reforms to democratic governance. We have done so because progress on many fronts depends on governments working well, and on citizens having confidence that governments both function well and are responsive to the needs of citizens. As we will see in chapter 4, there are good reasons to fear that faith in government and quality of government will decline if we do nothing. Indeed democracy itself may be eclipsed. Yet we have sketched above several paths to an alternative future in which average citizens are empowered and thus government policies more closely reflect what the typical citizen wishes. This would also be a world in which much of the heat is taken out of political discourse, and it becomes easier to pursue policies that a large majority of citizens can support. Last but not least, it would be a world in which governments spend tax dollars more wisely, and are seen to do so. As we proceed to discuss a range of specific policies in this and the next chapters, readers can reflect on how much more likely (and better) many of these policies would be in a society that pursued the political reforms outlined above.

3.2.2 The environment

Yes, carbon taxes

The intense debate around taxing carbon in many countries is a powerful example of an important point: *A strategy may be wonderful in terms of all five types of human evaluation and yet it may prove challenging to communicate and gain broad support for it.*

The argument in favour of carbon taxes is straightforward: These taxes give both producers and consumers incentives to reduce their carbon footprint. An industrial firm facing a carbon tax of $X per ton will be guided to adopt any technologies or processes that reduce carbon output for a cost less than $X per ton. The alternative methods of getting industrial firms to reduce carbon emissions is for government bureaucrats to either order firms to employ certain technologies or processes, or order them to achieve a certain reduction in carbon footprint. For any given reduction in carbon that we might achieve, a carbon tax will be less costly for society than bureaucratic rules regarding production processes if we make the reasonable assumption that firms understand their production processes better than bureaucrats. A carbon tax will also be less costly in achieving any given carbon

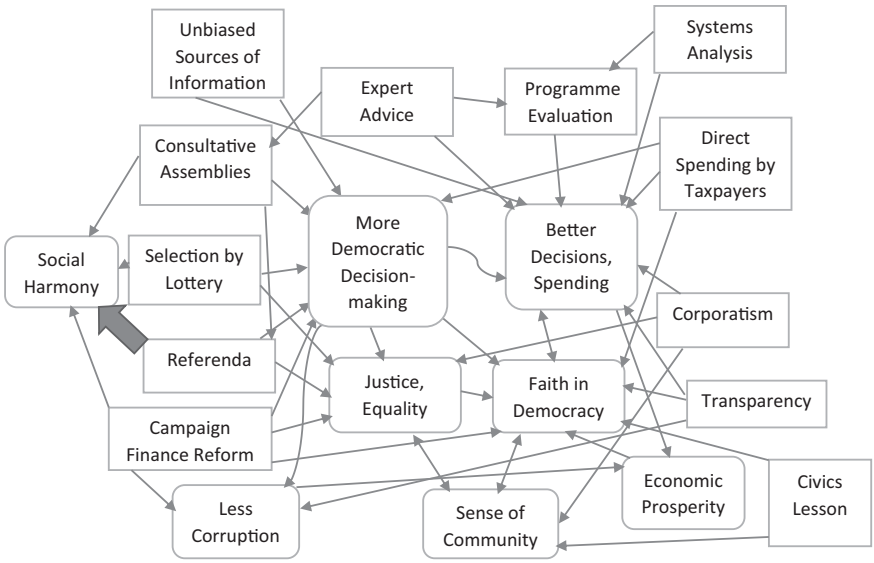

FIGURE 3.1 Placing strategies for better governance in context.

We use square boxes here for strategies and rounded boxes for desired outcomes (wavy lines and thick lines have the same meaning as in Figure 2.1). This complex system of generally positive reinforcement depends critically on whether more democratic decision-making results in better decisions and less corruption. There should, of course, be a link between Social Harmony (which here means greater consensus around controversial issues) and Sense of Community.

reduction than governments telling each firm to reduce by a certain amount if we appreciate that some firms will find it easier to reduce their carbon output than others. In sum, a carbon tax allows each firm to choose the lowest-cost ways of reducing their carbon footprint, whereas direct government edicts will inevitably require some firms to engage in much costlier efforts while some less expensive opportunities for carbon reduction are foregone.

A carbon tax thus has a highly desirable consequence: It achieves any given level of carbon reduction in the least costly way possible. It does so, we might note, by following a key bit of advice from systems analysis: Give diverse agents the incentive to move the system in a desired direction. Moreover, it respects key beliefs and values around respect and autonomy by allowing consumers and producers to make their own decisions rather than being told what to do. It thus accords with centuries of traditions across most human societies that allow market exchange to proceed without undue government interference. And note that the way that governments "interfere" in this case involves employing a market mechanism: Markets by their nature cannot put a price on pollution, even though producers and consumers impose real costs on society through their actions. So governments introduce a "price" on pollution that producers and consumers take into account just like any

other price signal that they receive (pollution is what economists call an "externality," and the standard recommendation for any externality is to put a price on it). Since producers and consumers are all quite familiar with responding to price signals, they can potentially be entirely comfortable with carbon taxes.

Some countries have introduced "carbon permits" (often called cap-and-trade schemes) rather than carbon taxes. These also put a price on carbon: Firms need to buy permits to emit carbon (often above a certain allowed level). These permits have a political advantage in that they avoid the word "tax." But they have some challenges. In particular the price of such permits tends to fluctuate a lot through business cycles, and thus they do not provide the same clear price signal that a carbon tax does. Still, cap-and-trade schemes are likely better than bureaucratic edicts.

Why then are carbon taxes so controversial? There are several reasons, each troubling in its own way. But an appreciation of each points toward strategies for overcoming it:

- ***Many people simply doubt that there is a cost imposed on (especially future) society by carbon emissions.*** It is becoming less socially acceptable to say this explicitly: There is mounting evidence that climate is changing in an unprecedented fashion, and some 99 per cent of climate scientists accept that this is happening and that it poses severe threats to humanity's shared future. (We can still do more to increase public understanding and respect for science; see below.) If you do not believe in climate change, but do not wish to be called a Neanderthal, it will be tempting to oppose the very transparent policy of carbon taxation in favour of vague promises to somehow achieve costless carbon reductions through government regulation. (Other strategies that push for government transparency, and for honesty in political discourse, can be helpful here.)
- ***People are busy, and like to believe convenient arguments.*** Promises of reducing carbon at little or no cost are attractive. But note that if there are easy ways to reduce carbon – and there are – these will be activated by even a small carbon tax wherever they are feasible. (The problem here is simply that the logic of carbon taxes has not been communicated.)
- ***People worry that any serious environmental policy will cost them financially.*** They worry in particular about losing their jobs. These fears are often exaggerated: The price of oil has bounced around in recent decades far more than it would be affected by any carbon tax that has been widely proposed. Such people should nevertheless prefer a carbon tax over a more expensive approach to carbon reduction – but may be attracted to vague promises to reduce carbon emissions costlessly. Note that jobs are likely more endangered by bureaucratic rules – which might force some firms out of business unnecessarily – than by carbon taxes. (Still, the best answers to this concern involve identifying types of economic prosperity that are environmentally sustainable, and developing a social safety net that addresses fear of unemployment.)

- ***People dislike taxes, and hate the idea of a new tax.*** The key point here is that we need taxes to fund government activities. We can potentially reduce other taxes by the amount of revenue earned from carbon taxes. And note the advantage here: We are able to reduce the taxes on things we like, such as income and consumption, by raising the taxes on something we do not want, carbon emissions. Rather than discouraging work and consumption, we discourage carbon emissions. We have to be careful of the distributional effects of such a change in tax regimes (which may require tax rebates to the poor), but in general the idea of replacing "bad" taxes with useful taxes should be broadly attractive. The problem here is that many voters simply do not trust politicians when they promise that a new tax will be completely offset by reductions in existing taxes. (This is in part a communication problem and in part a challenge again of enhancing honesty and transparency in governance. There may be ways of guaranteeing a maximum tax take.) [Note that many people may have an intuitive objection to taxes but then use one of our other bullet points to justify their antipathy to a carbon tax. We need then to address both their real and pretend reasons for objecting.]
- ***People fear that a carbon tax, once introduced, will keep increasing.*** There is some truth in this. It is hard to estimate in advance how much of a carbon tax is needed to achieve any given target for carbon reduction. And so it may well prove necessary to raise the tax level. But note that we have urged throughout this book for a gradual approach wherever possible: It makes sense to start with a smaller tax and raise this through time (though we should not move too slowly on this issue, given predictions of how fast global temperatures might increase, and the damage this might do, and our desire to give clear price signals to both producers and consumers). We will learn both about how much carbon is reduced and how much economic activity is disrupted. And recall yet again that any increase in carbon tax can be offset by a decrease in other taxes. (This is again an issue of communications, but also honesty and transparency.)
- ***Some worry that carbon taxes disproportionally affect the poor.*** This effect should be carefully measured. If it is found that the poor are suffering, a carbon tax can be coupled with the sorts of redistributive policies recommended below.
- ***Some worry that people respond slowly if at all to price incentives.*** We can expect that firms will take actions to reduce the amount they pay in carbon taxes, though perhaps not immediately. We can expect that consumers will respond to changes in prices, but again we can worry about the time lag. Higher fuel prices may encourage the occasional walk to the grocery store, but will not cause an immediate purchase of a more fuel-efficient car. It is estimated that the least expensive gains in carbon reduction come from refitting buildings and changing furnaces to reduce heating and cooling costs: Indeed, many home and business owners can actually save money in the long run by doing so. But the challenge is that the costs of retrofitting occur at the start, while the cost savings are spread over decades. People are often both bad at such calculations and present-oriented in their thinking. We may in such cases need more than

just carbon taxes to encourage people to act in their own interest – but can still expect carbon taxes to have some effect.

- ***Some worry about international competition.*** There is a fear that firms paying a carbon tax will be hurt in international competition with firms elsewhere that do not need to pay such a tax. This, we should first note, is a challenge for any effort to reduce carbon emissions – and thus yet another argument for doing so as inexpensively as possible. That is, a firm being told by bureaucrats how to operate will be at an even greater competitive disadvantage. This fear of unfair international competition can be mitigated within a country by tariff policies, but these interfere with international trade. The best solution involves international agreement on a carbon tax. This simultaneously addresses another common concern: "Why should we do something when our country alone cannot solve the carbon emission problem?"

We should say more about that last point: international agreement on a carbon tax. The international community has struggled for decades to agree on carbon reduction targets, and has proven even more inept at achieving these. (My own national government often brags about how it has been an international leader in setting carbon reduction targets, even though it has never come anywhere near meeting them, at least before the COVID-19 crisis.) It could well be that international negotiations would be better focused on an agreed carbon price. This ties questions of how to share the cost internationally and how to achieve reduction targets into one tidy bundle. And individual governments might pass binding resolutions: "We will introduce a carbon tax of X dollars when at least 90 per cent of other countries do so." Environmental activists could then focus their energies on recalcitrant countries. A combination of international pressure and the lure of a more palatable source of revenue may prove attractive to governments that are otherwise uncooperative.

I should note in closing that it is entirely possible to structure a set of carbon taxes and innovation incentives that actually allow big emitters to maintain or increase profits while reducing emissions. And these emitters are increasingly aware that some governmental action is inevitable, and may thus be willing to endorse predictable policies, even at some cost.

Incentives to innovate

Many people hope that there will be a technological solution that will solve climate change for us costlessly. This might be some super-scrubber that can be cheaply installed in smokestacks. Or a breakthrough in the generation of some kind of renewable energy. Or perhaps some technique for neutralizing atmospheric carbon. Such a technology would be mind-bogglingly valuable to humanity. It is therefore very much worth subsidizing research that might lead to such a solution.

We should note that there is also a sound economic argument for subsidizing the development of new technologies that will reduce carbon emissions. It is in

the nature of technological innovation that the inventor will not capture all of the benefits of their innovation, for (even if patented for a while) eventually others will adopt the new idea. The private incentives to innovate are thus far less than the societal incentives to innovate. The devil is in the details, though, and it is challenging to develop innovation subsidies that are cost-effective. One challenge is that governments often end up subsidizing activities that firms were going to undertake anyway.

We have delayed so long in introducing carbon taxes that some sort of technological solution is increasingly important. Indeed, humanity may be forced to consider messing with the environment even more in order to limit climate change: We might sprinkle substances in the atmosphere that would have the effect of reflecting solar heat before it arrives. This should only proceed with widespread international agreement. Such a solution would require great confidence in the scientists and engineers that design it.

It is highly likely that there will not be one great innovation that solves our problems but rather a host of little innovations. This is a general lesson from the history of technology: that a host of small innovations have a cumulatively greater impact on human lives than the handful of great breakthroughs (steam engines, harnessing electricity, or computers) that garner the vast bulk of public attention. We should be willing to subsidize some projects with grand ambitions but also a larger number of projects that promise smaller but worthwhile gains. Such innovations have already led to a dramatic fall in the cost of solar and wind energy in recent decades. Other innovations have lowered the carbon emissions associated with oil and gas production (and we will likely need some of this for both petrochemicals and transportation for some time, even if renewables are able to become the prime source of electricity generation).

We should note again that carbon emissions are easier to abate in some activities than others. We have had great success in developing sources of renewable energy in recent decades. We also have developed techniques for making buildings more energy efficient. Electric cars and trucks are showing much promise, but electric planes and even ships seem a distant dream. The large carbon emissions associated with steel and cement production (8 per cent of total global emissions) may be even harder to abate – though there are exciting advances in the use of engineered timber as a construction material.

Other pollutants

The strategies outlined for addressing climate change can also be applied to other pollutants. We can tax any kind of pollution, and encourage research that would limit this. We might stress here that taxes are only possible if we first measure emissions accurately. This is not a particularly challenging task, for the technology exists to measure most pollutants very accurately as they enter our air and water. We could reasonably argue that it is important for our goal of human health, and for respecting personal autonomy and personal rights, that we regularly measure and

tell people what is in the local air and water, and where this is coming from. People are willing to suffer some pollution in the interest of staying employed – though this willingness might fall if we enhanced economic security more generally. They deserve to know, though, exactly what trade-off they are being called upon to make.

It should be appreciated that important strides have been made in recent decades. Many bodies of water are much cleaner than they used to be. Many cities are less smoggy than they once were – and not just cities suffering industrial decline. Some pollutants such as lead are much less prevalent than they once were. These gains have been accomplished through a mix of government incentives and technological advances. Notably, life has carried on despite reductions in some pollutants. Society has proved quite capable of scoring some environmental successes while maintaining economic prosperity. We can undoubtedly push for reductions in other pollutants without destroying our economies.

Biodiversity

The methods employed to deal with pollution are less well suited to protecting biodiversity. We may in the not-too-distant future develop the technology to recreate extinct life-forms, but even this will require us having saved samples of that species' DNA. In the meantime there are limited technological fixes for maintaining biodiversity – though substitutes for some of the products produced from rare species might be imagined (and electronic tracking of endangered wildlife can make protection a bit easier). Taxes may also not be feasible for species where we must totally protect remaining populations. There is thus no alternative to prohibiting the killing of certain species or banning destruction of the habitats on which they depend. This will often require international cooperation. It almost certainly requires legal enforcement, which can be difficult and thus expensive. Most of all, it requires greater understanding of ecological systems and the effects that decreased biodiversity have on these.

Urban planning

We tend to think of rural areas when we think "environment," but our cities have huge and diverse impacts on our environment. And since most humans now live in cities, urban planning has a major impact on whether humans can regularly interact with nature. Urban planning at the same time affects a variety of other societal goals. Income inequality encourages and reflects the existence of rich and poor neighbourhoods. Our sense of community is shaped in important ways by how we design our cities. Human health is very much affected by urban design. Last but not least, the aesthetics of urban infrastructure and buildings exerts an important effect on human well-being: We are happier in attractive surroundings.

Property developers have a strong financial incentive to build homes that people want to live in and buildings that firms want to operate in. Yet developers often face limited incentives to pursue environmental, health, equality, or community

coherence goals – unless their customers indicate strong preferences around such things. Urban planners and city governments often exert limited influence on developer decisions.

Our first step must be to appreciate that there are strategies that serve multiple goals:

- Maintaining natural areas within city boundaries benefits nature (and especially certain plants, birds, and animals) but also reduces flooding (since natural areas can absorb water whereas concrete does not), enhances air and perhaps water quality (note that flooding can interfere with water supplies) and thus health, provides attractive places for people to both congregate and exercise, and makes it easier for urban residents to interact with and appreciate nature. Many studies show that people are happier if they regularly interact with nature. Natural areas can also be economically beneficial in attracting tourists. We must nevertheless be aware of a trade-off: If we protect natural areas within cities, we must either have bigger cities or pack the population more densely where construction is allowed. There is good reason to believe that most cities have too little nature, since city governments are often desperate for new sources of revenue. Note, though, that this trade-off becomes less severe if working from home becomes more common: The costs of commuting long distances are thus much smaller.
- Buildings that allow for natural ventilation are more energy efficient than those reliant on air conditioning. They are also healthier. They may be more expensive to build, but are much less expensive to operate.
- Urban gardens can increase supplies of fresh foods. They can be situated on rooftops or small strips of land with limited alternative uses. They decrease the need to transport food long distances. They provide another venue for community cooperation. They also can serve to mitigate flooding.
- We should be planning for urban resilience as the world experiences fire and flood more frequently. Yet we have seen that measures that increase resilience, such as natural areas and urban gardens, serve other valuable goals.

How can we best ensure that our various goals are reflected in urban design, and that we pursue design strategies that provide benefits in excess of costs? The diversity of goals calls for broad consultations to guide urban planning. These consultations should seek to identify first the goals, and how these interact, and then strategies for achieving diverse goals. In discussing goals, cities should engage in backcasting: forecasting future needs and deciding how to meet these. The complexity of interactions means that we must be ready to revise our plans as we see what works and what doesn't. Since all cities face a very similar set of challenges, there is much scope for learning from successful urban planning exercises in other cities (and there are a number of cities that have pursued broad consultations and instituted exciting projects as a result). There is also, it should be appreciated, much scope for learning about what did not work in other cities: We can avoid making

the same mistakes. Once we have strategies clarified, we can give developers both guidelines to follow and financial incentives/penalties to guide them.

Recycling and more

Some environmentalists worry that a global focus on climate change – though understandable and important – distracts attention from other environmental issues. They would urge us to see climate change as part of a broader problem: humans messing with complex ecosystems that we do not fully comprehend in ways that may lead to disaster. They urge humans to get back in contact with nature and appreciate its diversity. We have addressed some such concerns above.

There is also the problem of garbage, and especially toxic garbage, which fouls our lands and waters. One important proposal here is to place some sort of tax on goods to cover the cost of eventually recycling these. (On a related point, we should require mines and factories to put a fraction of revenues toward funds that will clean up their sites when they wind down production). Just like pollution, the cost of recycling is an externality that should be factored into the price of goods. As with pollution, manufacturers then gain a financial incentive to reduce the costs of recycling.

3.2.3 Economic prosperity

We must first address the question of whether we can have economic growth that is compatible with environmental sustainability. We have urged above the adoption of a carbon tax, and have appreciated that this will encourage firms to spend funds on reducing carbon emissions. This will increase costs of production for some goods and services. Some opponents of carbon taxes have argued that such taxes would have a huge negative impact on our standard of living. Yet the sort of carbon taxes that are generally proposed would increase the price of oil (the price most likely to be affected) by far less than that price has bounced around in recent decades. Carbon taxes will have an impact to be sure – they would have no point if they did not change the way both producers and consumers behaved – but they will not bring an end to economic prosperity as we know it.

Carbon taxes may encourage consumers to shift away from carbon-intensive goods and services toward goods and services that produce little in the way of carbon emissions. There are a host of services that have a very small carbon footprint. We mentioned in chapter 1 that we might wish to value some of the goods and services we produce more than others. It might be no bad thing if carbon taxes encouraged people to spend less of their income on conspicuous consumption (of, say, cars with off-road capabilities that are never employed) and more on services such as going to the theatre or exercise classes or playing/watching sports or biking through nature.

People also fear the effect of carbon taxes on employment. But if we change our consumption patterns, we will create new jobs to replace old jobs. We may, in

particular, need to build a whole new infrastructure of electric vehicle charging stations. And if we change how we produce goods and services, we will also create new jobs: installing emission-reducing equipment in industrial plants, building renewable energy facilities, and retrofitting our buildings to reduce energy consumption. We may worry about how fast we can retrain assembly line workers as yoga instructors. But the need for retraining may not always be severe: Geothermal energy production can use many of the skills employed in oil and gas production.

We discussed the possibility of resource constraints on growth earlier, and urged efforts to identify resource substitutes and pursue recycling. It is worth noting here that both recycling and the production of alternative materials will require workers. Efforts to limit the amount of materials used in the production of particular goods and services may also require more labour.

We should be guided away from thinking that our future must be one of economic sacrifice. We can still have jobs and consumption, though perhaps not quite the jobs and consumption that we are accustomed to. It is nevertheless no bad thing to encourage people to reflect on how much happiness they really gain from consumption of particular goods and services. If some people were to decide that they preferred more leisure to more consumption, this would be no bad thing – though there might be economic dislocation if everyone chose to do this at the same time.

BOX 3.2: MEASUREMENT ISSUES

We tend to evaluate economic prosperity in terms of a single measure: Gross Domestic Product (GDP). GDP measures the total value of all goods and services produced in the economy. Economists are well aware that it is an imperfect measure and occasionally suggest reforms. But GDP has the advantage that it is fairly easily calculated, and thus national statistical authorities are hesitant to make changes. The key assumption of GDP is that all goods and services produced in an economy should be valued at their market price. This allows us to easily add cars and socks and haircuts into one composite measure. But we as a society might reasonably decide that spending a certain sum of money feeding hungry children is somehow better than spending it on a fancy car. There is a more practical difficulty that only goods and services that are bought and sold get counted: If I cook and clean for myself, it does not show up in GDP, but if I hire someone else to do this for me, it does. GDP thus gets artificially inflated when we engage in market exchange for things we used to do for ourselves. The GDP of less-developed countries thus looks lower than it should, for people in those countries not only do their own cooking and cleaning but still often make their own clothes and even build their own homes. Another problem with GDP is that bad things can make GDP go up: If we consume extra fuel in traffic jams, then GDP rises even if we hate traffic jams; the money we spend cleaning an oil spill

likewise goes into GDP. Last but not least, we might note that GDP makes no attempt to include the costs of pollution or resource use (though it could do so in much the same way it includes estimates of the depreciation of buildings and machines): If we sell a barrel of oil for a dollar, GDP goes up by exactly a dollar, though we no longer have that oil for future use and generate pollution producing it.

Since government services are not sold in the marketplace, the decision has been made that these should go into GDP at precisely the cost of production. Polarized political debate around government spending suggests that some people think that government programmes are worth far more than their cost and others suspect that they are worth far less. For the purposes of this book it is important to appreciate that any improvement we might achieve in the quality of government programmes will not at all be reflected in GDP.

The Human Development Index (HDI) favoured by the United Nations combines equal weights for GDP and measures of literacy and life expectancy. It is thus an explicit recognition that we might want to value goods and services associated with education and health more than they appear within GDP. HDI statistics receive a lot of attention – countries brag when they do well in international HDI comparisons – but this rarely involves any close examination of the weights that go into HDI. The good news about HDI is that it is possible for an alternative to GDP to receive attention from both governments and citizens. The bad news is that the weights that guide HDI are both entirely arbitrary and little discussed.

Though the public attention span is limited, the best alternative may be to publish a set of statistics: GDP (with maybe some tweaks), literacy, life expectancy, (different types of) pollution, resource use, congestion, and so on. The public should then be encouraged to make nuanced judgements about how to value a combination of increases in GDP, pollution, congestion, and resource use.

One particularly useful statistic would be GDP per hour worked. We do not always bother to divide GDP by population, and especially not by the size of the labour force, and may thus get unduly excited about an increase in output that simply reflects a bigger population. Dividing GDP by hours worked can be particularly useful. GDP per person in Germany is lower than in the United States, but so is the average number of hours worked in a week (due largely to more generous vacation provisions). Surely we would want to know about the difference in hours worked in deciding on the relative prosperity of the two countries?

We should stress in closing that the present focus on GDP encourages bad decision-making. We can easily value bad policies that nevertheless increase GDP.

We want to encourage a type of economic growth that is environmentally sustainable. We would also prefer to see growth that reduces economic insecurity. There are a variety of strategies here:

We can encourage technological innovation. There is a sound economic argument for doing so. Innovators do not receive all of the benefits of their innovation, because others will eventually employ their ideas. The social benefits of innovation thus greatly exceed the private returns to innovation. Though the theoretical justification of public support for innovation is sound, there are practical problems. For one, we want to avoid paying firms to do things they would have done anyway. Second, we need to decide how and if to focus our subsidies. Since research is inherently unpredictable, governments should in general pursue a broad innovation policy rather than trying to predict winners. Yet we have seen above some reasons for favouring some kinds of research. We could encourage research on technologies that reduce carbon emissions or other sorts of pollution. We can encourage the development of new goods and services to stimulate employment. But note that in the long run we also want to see process innovations that will decrease the costs of producing goods and services. The clearest role for governments is in sponsoring basic scientific research: This is rarely profitable for private firms (though the boundary between science and technology is blurred in areas such as biotechnology), but often encourages technological innovation.

Before patents became common from the eighteenth century, governments often offered prizes for particular kinds of innovation. Some philanthropists have offered such prizes in recent years. Some scholars have suggested that prizes may be a better way of encouraging innovation than patents. Prizes have both the advantage and potential risk of governments setting innovation priorities. They have the advantage of not restricting competition as patents do, but the disadvantage of requiring a substantial government expenditure upfront.

We can encourage creativity more generally. We have employed a broad definition of technology in this book so that even a new recipe can be counted as a technological innovation. Still, there is scope for creativity even beyond a broad definition of technology: improvements in the appearance of a good, changes in business practices, new combinations of existing services. We could do more as a society, and especially within our schools, to encourage everyone to appreciate their creative potential, and know that there are strategies for enhancing creativity (see below).

We can foster institutional changes that enhance competition or contract enforcement. Note that any improvements we achieve in economic efficiency allow us to have more at lower cost. As with process innovation, such changes allow us to have higher incomes even while lowering our environmental impact. There are particular concerns at this moment in time about monopolies in online platforms and resulting concentrations in access to big data. Note that efforts to enhance competition simultaneously support growth and equality.

We can further liberalize international trade. In doing so, we should insist that all countries pursue similar environmental policies. Recall that we encouraged international agreement on a carbon tax above.

We can increase the ability of workers to work part-time if they wish. There are now artificial institutional barriers to this. Note that this may enhance growth in GDP per hour (if happy and rested workers are more productive, as many studies suggest), but may have a negative impact on growth in overall GDP. Note that giving part-time workers better access to the benefits plans available to full-time workers would have the added advantage of discouraging employers from forcing workers who would prefer full-time employment into multiple part-time jobs (a practice that was found to spread COVID across long-term care homes as workers moved between jobs in different homes).

We can avoid the temptation to achieve job security in unnecessarily costly ways. It may be tempting to enhance job security by placing limits on international trade or technological innovation. Yet since trade and technology are key drivers of economic growth, we should be hesitant to do so. We have suggested that we may be able to achieve a better balance between prosperity and security by creating a stronger social safety net to catch those who lose jobs due to trade or technology. We can note here again that we can then achieve greater public support for growth-enhancing policies with respect to trade or technology – and can also achieve greater support for environmental policies that may also dislocate jobs.

BOX 3.3: COVID AND TRADE

The COVID-19 pandemic exposed how dependent countries have become on international supply chains. This will and should cause reflection on whether efforts should be made to ensure local supplies of food and medical equipment. Such concerns were accentuated by the efforts of some countries to ban exports during the crisis. It will be no easy task to restore confidence in the international trading regime. Yet we should be careful of restricting trade too much in the interest of national self-sufficiency. The way to deal with medical supplies is to stockpile these – and obtain them from the lowest-cost supplier of dependable equipment. We might also wish to stockpile grain – a strategy pursued by governments around the world for thousands of years.

We can explore enhancing government spending in some areas. Governments have become an important share of GDP themselves. We can increase GDP growth if we can achieve public support for certain kinds of public expenditure. For example, we might as a society wish to spend a bit more both on public art and public parks and gardens. Taxpayers might be more supportive of such expenditures if they could have a direct say in how the money was spent (see above).

We can ensure that our educational systems are preparing our young for the jobs of tomorrow. This involves on one hand training for specific needs such as solar power technicians. Yet in an environment of change there is also a need to teach

broad skills so that people can move between occupations during their lives. How should we finance education? For primary and secondary education, there seems broad societal consensus around public funding. Parental choice can be facilitated within public systems, thus providing competitive pressure for schools to compete and innovate, without giving those with higher incomes greater access to quality schooling. At the post-secondary level, students can be provided with income-contingent loans that they pay back depending on their post-graduation income: Those who prosper because of their post-secondary education thus foot more of the bill for this. These policies strive to achieve educational success (which has good consequences politically as well as economically) while striking a balance between personal and social responsibility. By making loan repayment contingent on incomes, such programmes may also encourage social mobility (for poor students are not saddled with unpayable debt loads); sadly, social mobility has declined in the United States and elsewhere in recent decades. An alternative is to lower or eliminate tuition fees but this is a costly initiative that may encourage some students to pursue post-secondary education that does not serve the individual or society well. It is also a social benefit that benefits those with the greatest earning potential. (It may be a good idea to transfer some resources to young adults to help them get started in life, but we could help all young people rather than just those heading to college.)

We can improve the health of the population. The COVID-19 pandemic brought home powerfully one economic benefit of a healthy population: Healthy people may be infected by unhealthy people. Though the economic lockdown associated with COVID-19 was unusual (but may happen again; see chapter 5), the advantages of maintaining the health of the entire population are enduring. Healthy people are more productive than sick people, and thus certain investments in healthcare can encourage economic prosperity. Note that healthcare expenditures themselves are part of GDP. We should strive to ensure that all have access to healthcare, but that we provide decent healthcare at the lowest possible cost. Public provision of healthcare achieves the first goal but struggles with the second. Yet private provision is also often expensive for the simple reason that it is hard to measure the quality of healthcare. If we cannot readily observe what we are paying for, the beneficial effects of competition are blunted. Hospitals can easily have competitive bids for laundry services because it is easy to see if the sheets are clean, but competitive bidding on hip replacements is a much scarier enterprise. We need also to look far beyond the traditional healthcare system in thinking about encouraging health, for public health messaging around drugs and obesity may yield significant advances in health at low cost. Our educational systems also might better communicate advice on healthy practices.

We can encourage a change in values. If people have a greater appreciation for leisure time, and for services with a limited environmental impact, then prosperity can be quite compatible with environmental sustainability.

We can encourage economic activity among the disadvantaged. We can create programmes that are successful in moving disadvantaged groups – the homeless,

the disabled, certain visible minorities, indigenous peoples – into employment. Successful programmes would soon pay for themselves due to decreases in the costs of social programmes (and emergency room visits and prison time) devoted to such groups. Of course, if this were easy it would have been done already. But there are already proven strategies: Homeless people provided with a home and some counselling are often able to find work; indigenous people with property rights over land on a reserve are more prosperous. There are exciting new strategies: In the wake of Black Lives Matter protests both governments and banks have announced plans to increase loans to entrepreneurs from visible minority communities (who suffer both from discrimination and from possessing less collateral, and are thus severely under-represented in the ranks of entrepreneurs). We can be imaginative here: The economist Joseph Stiglitz has suggested that the government might be able to offer cheaper mortgages to the poor because it has access to lots of information on their income and expenditure history, and could use the tax system to collect payments. And we have advocated both a basic income and public works programmes elsewhere: These could be especially valuable to members of these groups, erasing the fear of extreme poverty and introducing them to steady jobs. More generally, there is statistical evidence that countries with more equal income distributions grow a little faster, and thus policies for reducing inequality (below) *may* encourage growth.

We can reduce the disruptiveness of business cycles. Basic incomes and public works projects can serve to limit the size of business cycles, for those who lose their jobs need not suddenly reduce their spending. This means that prosperity will not take as big a hit during recessions. But there may be longer-term benefits because investors are more willing to invest and workers more willing to train if they do not have to worry about sharp recessions.

We can encourage trust. This may seem horribly squishy, but there is a good deal of evidence that economies function better when people trust each other. Businesspeople can then complete deals more easily, and consumers have greater confidence in what they buy. While we should all remain vigilant, there are nevertheless significant economic advantages to encouraging a sense of community and particular values such as honesty and personal responsibility.

We need good transport infrastructure to support economic prosperity. Transport infrastructure also serves other goals, including personal freedom, happiness, and political conversations. There is much that can be done to improve transport flows while reducing the environmental impacts of transport. Strategies to reduce congestion serve both goals, for there is no more wasteful human activity than running our engines in a traffic jam. Self-driving cars and trucks will undoubtedly prove helpful here, as will better systems to guide drivers onto less crowded roads. Shared self-driving cars may reduce the need for urban parking lots – which are both ugly (usually) and costly to construct and maintain. Allowing workers to work from home or work non-standard hours can reduce rush-hour congestion. Electrification of vehicles may reduce urban pollution, and overall pollution depending on how the electricity is generated. Carbon taxes may shift some goods from trucks to rail,

and some people from cars to urban transit. Traffic interchanges and elevated rail crossings, though expensive, can in places generate large savings in both energy consumption and time in travel.

There are calls in many countries for massive investments in infrastructure. It is critically important that these funds be spent wisely. Often, the best bang for buck comes from repairing existing bridges or sewer systems, but politicians may be tempted by new projects that might bear their name. Governments should do cost/benefit analyses of all projects (taking all costs and benefits into account), and pursue the most beneficial first. (One advantage of a priority list is that governments might be able to more quickly activate spending in a recession.) Cost over-runs are almost taken for granted on construction projects, and this may be an area that can benefit the most from increased transparency.

We can keep interest rates low. It may be a distant memory now, but central banks may have been overly vigilant in fighting inflation in the not-too-distant past. By raising interest rates to fight inflation, they discouraged investment. This discouraged hiring, which may have slowed both wage increases and efforts to develop labour-saving technology. This policy also discouraged the development of new goods and services. We can avoid these dynamic losses by allowing a little more inflation – assuming that we again experience moderate rates of inflation in future.

A Summary Exercise. It would be useful at this point in the chapter for readers to produce a flowchart like Figure 3.1 summarizing the effects and interrelationships among the economic strategies outlined here – in part just to recognize that these flowcharts take a bit of thought to produce. The reader can then reflect on how this figure overlaps with Figure 3.1. The reader can then add new boxes and lines as we address inequality and economic security in the next two sections.

Or you can just trust me that there are lots of arrows, and most suggest that we can pursue multiple goals simultaneously.

3.2.4 Inequality

Recall that we ideally wish to reduce inequality in ways that have a limited impact on economic prosperity. We thus should be wary of proposals that might have a serious negative impact on investment or work effort. We should also be wary of false claims by those who benefit from existing institutions that any change risks economic disaster.

We can tackle inequality at both the top end – by reducing the incomes or wealth of the very rich – or at the bottom end – by raising the incomes or wealth of the very poor. A number of policies work simultaneously to achieve both goals. Note that all policies that operate at the top end also have social and political benefits in reducing political and social inequality. Policies that operate at the bottom end may benefit personal autonomy and health outcomes. Reductions in inequality at either end will likely enhance our sense of community. We should keep these various consequences in mind as we evaluate particular policy proposals.

At the top end of the income distribution, we could consider a few options:

We can encourage donations to charity by the wealthy. We can do so through both institutions (such as tax incentives) and values. This is the least invasive policy, for it leaves the wealthy with the freedom to do as they wish. The consequences may be quite beneficial for a range of societal goals if we imagine that we will get imaginative solutions to a range of societal challenges from lots of independent decisions by successful (or lucky) individuals: Some may develop programmes that train the unemployed; others may finance public art; still others may donate nature reserves to the public. Such a policy accords with values of both personal responsibility and caring for others. It accords with beliefs on the one hand that people have a right to their income and on the other that we should help the less fortunate. In most human societies there have been social expectations that the rich will share some of their wealth. Most humans that are able engage in some charitable giving. A society that appreciates that high incomes and wealth reflect a combination of personal and societal attributes is more likely to encourage charitable giving.

We can think of other imaginative voluntary policies. Perhaps some wealthy individuals would like to bequeath their wealth not just to immediate descendants but through many generations? We could allow a trust that paid every descendant some significant but not huge sum on their eighteenth birthday. The wealth still stays in the family but is spread across a large number of individuals. Such trusts, if popular, might eventually be rolled into a public scheme to provide all citizens with a payment on their eighteenth birthday (see below). This policy has the advantages associated with being voluntary but its benefits to society are likely less than with charitable donations. Still, there are societal advantages of large numbers of young people receiving a sum of money that they might devote to post-secondary education, starting a business, or making a down payment on a house. Throughout history, young adults have often had little independence until the death of parents. While many young people might make foolish decisions, most would likely benefit from greater independence.

We could insist on donations. We can require individuals and corporations with incomes above a certain threshold to donate some small proportion – say 1 per cent – to charity. Such a policy has most of the benefits of voluntary donations. It can lead to a dramatic increase in the total volume of donations. It may have a negative impact on voluntary giving: This may seem less noble or exceptional in a world of forced giving. It will offend values and beliefs that people should be able to spend their incomes as they see fit. Notably, though, it should offend these sensibilities far less than a similar increase in tax rates would, for people and corporations still get to decide how to allocate their donations. A society that accepted that the rich should give something back might be troubled little by such a policy. Forced donations may be institutionally rare in history, but strong social pressure to do so has been common. It is less clear whether such a policy is intuitively appealing. (There is an important question of how corporations – which are owned by large numbers of people – can identify shared societal goals of their shareholders. Yet it is often straightforward for companies to identify charitable activities that serve to

enhance their public visibility and reputation. Energy companies fined for polluting are in some jurisdictions forced to perform environmental clean-up; this serves to enhance the corporation's public image.)

We can strive to identify and eliminate sources of "undeserved income." Corporate executives achieve very high salaries that appear loosely tied to firm performance. Levels of executive compensation differ markedly across countries, with little if any effect on firm performance. We can change the institutions so that executive pay reflects firm performance. Stock options have a laudable goal of incentivizing managers to increase the value of the firm – but are structured unnecessarily at present so that executives get huge payouts when the entire stock market rises. Stock options could easily be structured to only reward executives that outperform competitors. Financial analysts are often rewarded for beating market indices, which they may do simply by talking on excessive risk. Financial regulations can eliminate the rewards for misleading clients or taking enormous risks with their money or pursuing obscure tax loopholes (and if governments need to bail out a financial institution judged "too big to fail," they can do it in a way that forces shareholders and senior executives to suffer financially for bad judgement). Even more insidiously, some businesspeople make money by bribing government officials or lying to suppliers or consumers. Note that our faith in politics is enhanced if we reduce income that comes from corruption or lobbying or abuse of power. (Recent legal cases in the United States in which drug firms were found guilty of encouraging opioid abuse provide a powerful example of attacking undeserved income.) Speaking of power, we need to have robust competition policies that prevent firms from dominating markets and earning excess profits at the expense of consumers.

We can close tax loopholes. There are in many countries tax loopholes that can be closed at little cost. Such loopholes generally aid the rich and powerful while providing little benefit to the wider economy. Removing them is thus a very low-cost way of reducing inequality. The challenge is identifying the tax breaks that serve little or no purpose, and then pressuring politicians into removing tax breaks from their donors. There may be little political gain from doing so. This is the sort of issue for which some sort of objective arms-length source of independent advice might be very useful. And then there is tax avoidance: There is good reason to believe that greater efforts to stop some very rich people from cheating on their taxes would more than pay for themselves (maybe we should encourage financial bounty hunters?) And there is at least one novel idea, the Unexplained Wealth Order, pioneered in just a couple of countries, whereby governments can ask people with expensive cars or boats or homes to explain how they could afford these: This may potentially help authorities identify not just undeclared income but many types of undeserved income. More prosaically, minimum tax rates for both individuals and corporations can limit their ability to escape taxes via loopholes, but only if they declare their income.

We can increase income taxes and inheritance taxes and consider wealth taxes. We have above already discussed the value clashes involved in any sort of involuntary transmission of income or wealth. There are also important practical considerations.

Individuals may move to low-tax jurisdictions unless international agreement on tax rates can be achieved. These agreements might prove invaluable but hard to achieve in the absence of concerted global pressure – but small tax havens could be forced to change by the concerted efforts to, say, limit their access to global financial systems. In the case of wealth taxes, it may prove impractical to measure wealth accurately enough to tax it (though a handful of countries in the world, including Norway, have had wealth taxes for years). Increased taxes on land (maybe progressive taxes) may be especially attractive since land is hard to hide and impossible to move to another tax jurisdiction. We must also worry about – and attempt to measure – the incentive effects of very high levels of taxation. We must then strive to achieve the best balance between fostering equality and fostering growth. This sort of decision, about where the best balance lies, might best be entrusted to a citizens' assembly (see above). I would note here, though, that top tax rates in most jurisdictions are far below what they were just a couple of decades ago, and there is little reason to believe that growth has been spurred much if at all by lowering tax rates.

BOX 3.4: THE HISTORY OF INEQUALITY

History tells us that it is hard to fight inequality outside of a crisis, partly because the rich are powerful and partly because of the natural tendency for the rich to get richer (since the rate of return on investment is generally much higher than the growth rate in wages). Inequality has thus risen most of the time, but fell during the World Wars and Depression. Yet inequality also fell in the decades immediately following World War II across many countries; this was in part due to rising real wages, but also due to widespread public support for redistributive policies in the aftermath of Depression and War.

Another lesson that can be drawn from history is that societies often collapse precisely because of increases in inequalities in wealth and power. In the long run, then, the efforts of the rich and powerful undercut the system on which the prosperity of their heirs would have depended. The message that inequality threatens societal stability is one that everybody needs to hear.

At the bottom end of the income distribution, there are also multiple options:

We can introduce a basic income (sometimes called a guaranteed annual income). This has benefits in eliminating the most extreme forms of poverty. It could then indirectly decrease homelessness, emergency room visits, petty crime, and begging (a basic income experiment in Finland found significant increases in reported levels of happiness). Some individuals who dislike the idea of giving money with no work requirement may be persuaded by these benefits. And a case can be made that all citizens deserve a "return" on the land that we all share. Or that all humans deserve basic human sustenance. The best balance here may – at least at first – involve a

very low basic income that barely meets basic human needs. [Note that a citizen's assembly may be the best way to set the level.] The introduction of a basic income should replace a welter of programmes offered by various levels of government aimed at the very poor. We need to carefully evaluate both these cost savings, the savings to health and justice systems, and the possible effects on work effort. Note that a basic income is entirely transparent: Citizens can know exactly what everyone gets from the programme. Note also that the benefits of a basic income depend a lot on societal attitudes: If taxpayers view it as a societal responsibility and recipients mostly view it as a means to get a better education or job, then the benefits may far outweigh the costs. The benefits will not just be economic but will include an enhanced sense of community.

We could supplement a basic income with various sorts of public works projects. These have the advantage that individuals are required to work for money; such a policy is less offensive to those who wish to reward work. And there are many low-skilled tasks that can usefully be performed: clearing garbage from urban lands, erasing graffiti, planting and weeding gardens. A flexible programme could tailor public works employment to the skill sets of the unemployed: Public arts projects could be pursued by those with artistic talents. Note, though, that these workers have to be supervised, and thus the programmes have significant administrative costs. (Nevertheless India has introduced a programme guaranteeing a hundred days of work annually to each household.) The key here may be that such programmes can produce results that are visible to taxpayers. Public works programmes were pursued in many countries during the Great Depression but became less popular postwar, partly because they seemed communistic to some during the Cold War, and partly because Keynesian economic theory suggested (too optimistically) that governments could successfully fight unemployment indirectly through government tax and spending policies or monetary policy. It could well be that the cost of public works programmes would be *less* than the cost of attempting to stimulate private employment.

We can employ an "earned income tax credit" that tops up the income of those with low incomes. Such a policy is popular on both right and left because it helps the poor while increasing the incentive to work. (We can also raise minimum wages but need to recognize that such increases will in some circumstances cause employers to reduce employment.)

We might develop special programmes for those who are artistically inclined to be paid to produce urban art. Note here that even those with limited experience can be trained in building mosaics.

We can improve access to government programmes. Programmes to aid the poor, including a basic income, will only aid the poorest if these apply for benefits. Some countries, including the United Kingdom, Germany, and Japan, already automatically fill out income tax forms for the poorest members of society, ensuring that they receive benefits for which they are eligible. This is straightforward, since their incomes are low and government agencies or employers provide income figures to tax authorities. An estimate in Canada suggests that only 3 per cent of the homeless

file tax returns; the rest miss out on benefits for which they are eligible. Sadly, companies that provide tax advice lobby against this free service.

We can improve education and health. Note that a host of programmes that aid the goal of personal autonomy, such as education and healthcare, also increase the ability of the poor to gain employment or start businesses. Many studies show that programmes of early childhood education pay for themselves in the long run by improving life outcomes of children; they have a more immediate impact in allowing parents (especially mothers) to work.

We can be more imaginative. Some have suggested rules limiting the degree of difference between the lowest and highest annual income in any large firm. This might motivate changes at both the top and bottom end of the income distribution.

What, though, of the inequality rooted in racial discrimination? The author should confess that in the first draft of this book he said relatively little about this. The author dreams of a future in which, as Martin Luther King famously said, people will be judged by their character rather than their skin colour. But we are not there yet, and have progressed toward such a future far less quickly than we should have. The Black Lives Matter protests of 2020 have established that it is past time to address this issue.

I would still note that many of the general strategies advocated in this book would serve to enhance racial harmony. Racism is often motivated by fear and jealousy, and any programme that reduces inequality and provides a better social safety net will reduce the impetus for racism. Changes in cultural values are also critical. I defended my emphasis on cultural values earlier in the book against those who might focus entirely on institutions. The most hopeful sign in the Black Lives Matter protests was their multiracial nature and the fact that many people in power reacted by removing symbols (team names or statues or flags) that were perceived as having racist connotations. Culture matters a lot in the battle against racism: Nothing may be more important than a cultural acceptance among all social groups that racism is wrong and needs to be combated. Perhaps most importantly, there was a broad – though far from unanimous – acceptance that members of visible minorities have good reason to be angry, and that their concerns need to be heard and addressed.

In many countries, neighbourhoods are still racially segregated. Happily, odious laws that once mandated segregation have largely disappeared, but the reality on the ground is still that many members of visible minorities grow up in ghettoes in which they rarely interact with people of other races. Likewise, Whites may have very limited interactions with members of visible minorities – and then perhaps mainly in service roles. It is far easier to harbour racist attitudes if you rarely interact with people of other races. There is good evidence that familiarity breeds respect and understanding. A society in which people from different social groups regularly interact is one in which racism and discrimination will be far less likely. There have been important successes (but also some failures) in integrating neighbourhoods, schools, and workplaces in recent decades, and it could be that there is a tipping point in the not-too-distant future where racist attitudes become

socially unacceptable in all sizeable social groups. Integrating neighbourhoods may be the single most important avenue for decreasing racial tensions.

It is critically important to face up to our history. Visible minorities faced decades of discrimination in many lands. This has often been buttressed by violence: Lynchings and other sorts of gang violence prevented Blacks in the United States from pursuing both political activity and economic prosperity for well over a century. We must ensure that such violence remains anathema. And we must appreciate that as a result of such violence – and racial segregation in housing, most Black children will inherit far less from their parents and grandparents than White children. The differences in wealth between races are even larger than differences in income. We should then as a society consider ways that we can help those from poor backgrounds succeed (I quite like the idea of giving all 18-year-olds a one-time grant, but am well aware that this is an expensive idea not to be engaged lightly).

3.2.5 Economic uncertainty

The idea of a basic income has gained popularity across the political spectrum in recent years. It is attractive to some because it guarantees a certain level of income to all, and thus erases the most extreme forms of poverty from society. We thus urged a basic income above as one strategy for addressing income inequality. A basic income is attractive to others because it potentially replaces a welter of social programmes operated by various levels of government (though some programmes for particular groups like the disabled might remain). It is thought by many to be especially important in the near future because of the disruptions to labour markets that might result from artificial intelligence (which notably may replace workers in diverse fields such as trucking, manufacturing and middle management). It is the role of a basic income in reducing economic uncertainty that interests us here. Workers who know that there is a minimum income below which they cannot fall can worry a bit less about losing their jobs. This is a direct benefit to society, for we do not want families to worry about how they are going to feed themselves. And increased economic security has further benefits: We have seen elsewhere in this chapter that a basic income might increase societal support for a variety of beneficial policies such as carbon taxes and trade treaties. It appeals to our senses of justice, social responsibility, and caring – we do not like to see hunger. It does, though, challenge our sense of personal responsibility, for we would generally prefer that families support themselves. We might also worry about the cost of such a programme, and thus the taxes needed to pay for it: This cost will of course depend on how many other programmes it can replace. It is hoped by many that there may be significant savings in administrative costs if several programmes can be replaced by one that can be run fairly readily through existing tax systems (though some people will need assistance in filling out the forms to qualify). We can also note here that some existing social support programmes discourage people from seeking work

because they lose their benefits if employed; a basic income should be structured to maintain the incentive to work.

As the COVID-19 pandemic caused a massive economic contraction in many countries in 2020, governments rushed to get money into people's hands to stave off economic disaster and ensure that families could feed themselves. If a basic income had been in place, there would already have been a mechanism that ensured these outcomes.

We have described above several potential impacts of a basic income, most good, some not. It is a challenging task to estimate each of these. It is likewise challenging to estimate the costs, for these will depend both on how people react (do they work more or less, get more education or not?) and how many existing programmes are eliminated. Experiments with basic incomes have often produced promising results, but small-scale experiments by their nature cannot capture the myriad effects of a full-scale programme. We need on the one hand careful and multifaceted evaluation (embracing a systems approach), and on the other, a recognition that at some point we will have to make a decision based on imperfect information. We need at that point to commit to evaluating the programme carefully down the road.

Concerns about both cost and personal responsibility will likely combine to keep the ideal basic income fairly low. It might be set at a level that provides for the most basic of human needs, and it may be best to entrust some citizen assembly with the task of setting the level. Note that it would be invaluable for assembly members to actually meet (randomly selected?) recipients of a basic income. We need to put a "face" on poverty and understand why people are in poverty and how they might escape it. Public policy by stereotype is unlikely to be constructive.

We might then want to supplement the basic income with some sort of public works programmes. Here we must incur some administrative costs, for public works projects need to be organized and supervised. Yet it seems that communities could easily compile a list of projects that require limited skill and supervision: picking up litter, erasing graffiti, weeding and planting gardens (which may be vegetable gardens in the event of food scarcity), and so on. Such projects have a direct and observable benefit for taxpayers, and provide workers with a sense of accomplishment. It is hard to measure the direct psychological effect of beautiful versus ugly landscapes, but humans respond to their surroundings and are more likely to be happy and supportive of their communities if strolling past flowers than piles of garbage. If we are able to commit that we will create such employment for the unemployed (perhaps only part-time, in order to facilitate job search), we can further reduce economic uncertainty.

There are, of course, also a range of existing programmes that might be enhanced: (un)employment insurance, and subsidies for retraining and relocation. These cushion and encourage the transition between jobs. They serve to enhance security for those with incomes well above a basic income. Note, though, that these programmes aid those who have had long-term employment, and thus they alone do not support a growing proportion of today's labour force. One key public

policy question going forward is how to enhance the security of workers in the gig economy.

3.2.6 Immigration

We have not stated a goal with respect to migration in chapter 2. Migration can be shown in most cases to be beneficial for both the country that migrants leave and the country they move to: They may lessen unemployment where they leave, and often send money back to relatives; and they often fill jobs in the receiving country that locals are unwilling or unable to perform. The global economy as a whole naturally benefits if labour moves to a place where it is more productive. Yet migration is controversial. Values such as respecting human freedom and caring for the less fortunate encourage flexible migration policies. However, values around a sense of community may urge limits on migration from quite different places (though recall that we also embrace a respect for diversity). Though the general economic case may be positive, there certainly can be situations in which local workers can have legitimate concerns about the effects of migration on their incomes. (The reader may be getting tired of me talking about economic security, but here again efforts to increase economic security may facilitate a change in attitude.)

Large waves of migration can be a shock to labour markets. Moreover, many migrants require time to learn local skills, languages, and customs, and then to find jobs or entrepreneurial opportunities. (The Canadian policy of having families and community groups sponsor migrants has been shown to accelerate processes of integration.) There is thus likely a limit to the number of migrants that any country can easily absorb at any point in time. This number will likely be far below the number that want to migrate.

One obvious solution is to charge migrants for entry. Since many are poor, this fee would likely have to be paid as an extra tax on income earned after migration. (Even a small upfront fee for entry may be an improvement over the fees paid at present to people smugglers.) Such a surtax is an affront to our sense of community and our desire to help the disadvantaged. (We would likely wish to exclude from the surtax migrants joining family members.) It has the advantage of rationing entry to those who most want it. Most importantly, such a surtax can reduce local resistance to migration and thus increase the number of migrants that a country can handle. Such a policy, then, can have the unlikely impact of appealing both to people who might want to limit migration and to others who might want to expand it. (Recall that systems thinking encourages strategies that reduce conflict and get diverse agents working in the same direction.) Intense distrust between those who support migration and those who oppose migration make it difficult to discuss a controversial strategy that might just bring some satisfaction to both.

What, though, of refugees? People of the future may well look back on inhabitants of earth in the early twenty-first century as barbarians for the simple fact that millions of refugees from horrific wars have been abandoned to their fate, welcomed nowhere, left to starve or die of disease or risk their lives crossing borders

illegally. The refugee situation is the most basic test of our common humanity and we have failed, and should be collectively ashamed. The number of refugees is, on the one hand, a humanitarian disaster, and, on the other hand, small relative to total global population. Rich countries unwilling to take more refugees might at least have paid poorer countries to take them (as Europe did to some extent with Syrian refugees in Turkey). Or we might have considered military options that would have provided a safe haven. We could, that is, have decided that abandoning them was simply not an option and set our collective minds to doing something. Charging refugees a surtax seems heartless but it beats the crap out of leaving them without a home. We might all usefully take a moment to place ourselves in their shoes.

There are legitimate concerns that some refugees might wish us harm. But imagine how much more likely they are to disdain our principles if we abandon them.

There; you didn't see that coming, did you? We can have a better world where we collectively act with courage and compassion, where we are the good people that we aspire to be. We should be willing to make small sacrifices to help those in the most desperate need, but can take solace from the fact that we need not make enormous sacrifices. It would in fact do the poor no good if we destroyed our economies in an orgy of self-sacrifice, so we can rest easy that we can achieve a healthy balance between doing what is right and living comfortably. We can, if we choose wisely, have nice homes and cars and yet also have self-respect. This balance is possible if we pursue a set of strategies like those outlined in this book, which achieve a variety of goals in a sensible manner. We cannot save everyone in trouble overnight but we can save those in the worst of situations. The collective needs of humanity are great but finite, and we can slowly address one social injustice after another. Decide now: What sort of person do you want to be and what sort of world do you want to live in?

3.2.7 Peace

We cannot stress too much that peace can only be ensured by democracy. To be sure, democratic leaders have at times whipped up a frenzy for war, but it seems increasingly unlikely that a democratic government could justify a war against another democratic government. However, a democracy might feel it necessary to attack an autocracy that was either a threat or was violating human rights internally. And autocrats will often find it useful to mask their shortcomings by engaging in foreign adventures. The pursuit of peace is thus intertwined with the pursuit of democracy.

Autocrats will try to paint efforts to support democracy in their lands as an attack on that country rather than the autocrat in power. Autocrats are limited in their ability to block knowledge of the outside world. And thus it is important that democratic countries be clear about the principles that guide them. We can have a foreign policy based on principle or a foreign policy guided by naked self-interest, but it is not possible to have both. It may have been easier to get away with duplicity in the past, but this is increasingly impossible in an age of rapid communication and NGO scrutiny: Self-serving abuses of principle will soon be known to the world. If

democracies speak clearly about their support for democracy, and are seen to pursue that goal globally, it would be harder for autocrats to vilify democracies.

Democratic governments should try when possible to interact with those fighting for democracy within autocracies, and listen to their advice on how to encourage democratization. Democratic governments can also usefully interact with their own citizens. The German foreign ministry has often gathered random groups of citizens to discuss challenges in foreign policy.

Peace will also depend on countries treating each other fairly. This means agreeing to international institutions and then abiding by their decisions. If one country deems itself too powerful to abide by the rules, other countries will feel aggrieved. This is dangerous.

Countries in the past often went to war to guarantee raw-material supplies or to open up new markets. Institutions that facilitate the movement of goods and services throughout the global economy not only encourage economic growth but take away one of the most powerful incentives for war. Efforts to facilitate migration would take away another potential international flashpoint.

If the world someday becomes almost entirely democratic, then countries may feel comfortable endowing an institution such as the United Nations with more power. Such an institution could achieve many valuable goals: facilitating trade, policing overfishing (while economists like the idea of enforcing global quotas on fishing, it may be easier in practice to simply prohibit fishing in important spawning grounds), and limiting climate change. It may have an important role to play in managing some of the technological changes we will engage later in the chapter. And it might serve as the final guarantor of international peace, if it could credibly commit to act forcefully against any act of aggression. (The UN's bureaucracy needs reform even more than the bureaucracies of most developed countries, we might note. It is even harder to police bureaucratic inefficiencies in such a body.)

In the interim it may be useful to create some sort of League of Democracies. This could provide a forum in which democracies could debate how best to encourage democratization and ideally achieve consensus on how to interact with authoritarian states. If the League performed useful functions, it would incentivize other states to democratize and seek membership (Spain and Portugal democratized in the 1970s in large part to gain membership in the European Union.) If the League insisted on a set of democratic principles, it could discourage backsliding among member states.

States within such a League will not always agree. But they can agree on how to disagree. Yuval Harari makes an important point that civilizations can be defined not just by what they agree about but by what they disagree about. Citizens of the European Union may disagree about the role of the European Parliament but are united in caring about it. A League of Democracies can identify a set of shared concerns and work collaboratively toward solving them.

We have argued throughout this book that institutions function best when supported by values. The institutions that support peace will work best if we can extend values around respect for diversity and sense of community to a global level. As with achieving these goals within countries, the greatest challenge here

lies in the arena of religion. We must then encourage a respect for diverse religious beliefs. This is easier said than done. But we should appreciate that world history has witnessed many lengthy periods in which major religions cohabited particular empires peacefully for centuries – including religious communities that do not get along at all well today in some parts of the world. We should be willing to embrace any religion that is in turn willing to live in harmony with other religions and with the non-religious.

We can appreciate that nationalism can have both positive and negative attributes. It can guide people to work together on shared goals. It can also guide hostility toward foreigners (and often minorities within the nation). We need to encourage a respectful nationalism that can foster a sense of community and shared purpose but stops short of blaming all imperfections in the world on others. Note here that the project of this book – to carefully grapple with the complexity of the world and plot a shared path forward – reduces both the attraction and feasibility of blaming some group of others for life's shortcomings.

BOX 3.5: FOREIGN AID

This book has focused for the most part on domestic policies. We can note here that both democratization and peace are more likely if poor countries become richer. It is no fluke that most of the world's democracies are fairly rich and peaceful: Democracy requires literacy, time to debate, and freedom from desperation. Rich countries thus have both selfish and altruistic motives for helping poor countries develop. The most useful policy here is openness to trade, for trade has stimulated economic development in many countries such as China in recent decades.

There has been quite an intense debate – both in public and in academic circles – about the effectiveness of foreign aid. There can be little doubt that a lot of aid has been wasted. One problem has been corruption, with local officials stealing much aid money. Another has been the deliberate use of aid by rich countries as a cover for foreign policy, so that much of it was spent on armies rather than schools. Still another has been donor arrogance, so that expensive irrigation schemes were built without consulting local farmers.

Yet how can we really doubt that there can be value in spending money in other countries on the things that governments pay for in rich countries, such as schools, roads, and hospitals? We need to do these things consultatively, to make sure there are teachers in the schools and doctors in the hospitals and maintenance of the roads. And we need transparency to ensure that most of the money reaches its end goal. And we need to ensure that our spending on schools does not just allow local governments to divert their own funds toward palaces and tanks. We need, that is, to be far more careful in future than we have been in the past.

It is tempting to listen to those who say that aid cannot work. We can then say to ourselves, "I recognize some ethical duty to help the less fortunate, but unfortunately I can do no good." We can in fact help the world's poorest. And we can do so at a very small cost to ourselves. And we benefit not just by enhancing the chances for democracy and peace, but by increasing the ability of poor countries to buy stuff from us.

3.2.8 Crime

We did not articulate the obvious arguments against crime in chapter 2. Crime creates injustice and is often encouraged by injustice. Crime reduces our freedom to act as we might wish. More concretely, crime imposes economic costs as individuals and firms pay for protection, and limits activities that might be dangerous or hard to protect. Societies have a right to protect themselves from crime: Criminals arguably sacrifice their rights when they commit crime. But care must be taken that our efforts to combat crime do not create their own injustices: that a majority defines crime in a way that offends a large minority; that some types of innocent people are more likely to be suspected or convicted of crime, or hassled or injured or killed by police; that some people are far better able to evade justice. It can be hard to find the right balance in criminal justice.Yet we can still point to some very useful strategies that can reduce crime at low cost.

First, we should note that our strategies for enhancing economic security and reducing income inequality will serve indirectly but significantly to reduce criminal activity driven by desperation and much that is encouraged by resentment and a feeling of disconnection from the wider community. There is also much evidence that tidying up vacant lots and buildings in underprivileged neighbourhoods serves to create hope and a sense of connection.

Second, efforts to enhance mental health in our communities can have a huge impact on crime rates. There are estimates that a majority of criminals in many developed countries have some recognizable mental health issue (and even that a majority have an identifiable brain injury). A sizeable proportion suffer from fetal alcohol spectrum disorder, and efforts to keep pregnant women off drugs can thus be hugely beneficial (but with a 20-year time lag that may not encourage most politicians to act). There is evidence that lead in the pipes used for drinking water in many cities contributes to mental dysfunction.

Third, many are imprisoned for possession of illegal drugs. Decades of efforts to decrease illegal drug use through the police and courts have signally failed. And there is an important ethical issue as to whether a majority has the right to criminalize an act that a large minority wishes to pursue. I personally think that drug abuse is an abrogation of personal responsibility. However, I also appreciate that much of the criminal activity associated with drug abuse reflects the fact that our policing

efforts drive up the price of drugs. In determining the best way to handle drugs we must grapple with a complex set of both ethical and empirical issues: What will happen to use if certain drugs are legalized? What are the effects on personal health, crime rates, and social interaction? What are the implications for both personal and social responsibility? A citizen's assembly may be able to weigh these various issues and reach a consensus that should attract broad public support. This consensus will almost certainly involve putting fewer people in prison on drug offences.

Vengeance is a powerful motive, and society can have an understandable desire to punish criminals. Yet decisions about the length of criminal sentences should be based on careful estimates of the deterrent effects. It is incredibly expensive to keep a criminal in prison for a year, and we should do so only if this will have the effect of deterring further crime. For certain criminals – serial murderers or rapists, say – the value of keeping them off the streets justifies long sentences. For most criminals, we need to estimate both the chances of them re-offending and of others being deterred by a fear of long sentences. Here, the advantage of extending sentences that are already long may be minimal: Is it at all likely that I might risk a 10-year sentence for killing my annoying neighbour but control myself if the sentence increases to 12 years? Note here that rates of incarceration differ markedly across countries – but there is no obvious indication that countries that imprison more people benefit from lower crime rates as a result.

There are a variety of other programmes that should also be carefully evaluated: after-school programmes for troubled youth; community policing; retraining programmes within prisons; counselling programmes within prisons; and so on. A minute proportion of the population commits most violent crimes, and programmes focused on them may thus prove very effective. As with any government programme, we cannot expect perfection, but if a programme to teach impulse control to inmates succeeds in preventing a couple of crimes upon their release it is probably worth a few dollars. We have vociferous debate about such policies on occasion because we distrust expert advice, and we need to try to rekindle our confidence in our ability to estimate the likely effect of such programmes. We may be able to achieve a costless reduction in crime by reallocating some of the funds we spend keeping too many prisoners in prison for long periods toward other crime-reducing programmes. Note that these other programmes act by increasing personal choice and opportunities rather than reducing these.

There are also strategies that can target particular types of crime. Increased funding for safe houses is an important first step in addressing domestic abuse. Prosecution is more likely if victims feel safe. And abuse will decline as fear of prosecution rises.

Attitudes around sexual assault are hardening. Fear of prosecution or the destruction of reputation will reduce assault. There is also a lot of scope for public outreach within our schools: to discuss issues of consent, to get people (both potential assaulters and potential witnesses) to reflect in advance on how they want to behave in certain situations, to encourage witnesses to intervene, and to encourage victims to seek counselling and perhaps legal action.

The Black Lives Matter protests of 2020 have highlighted the unfortunate fact that the security of the majority has been paid for with profound injustice toward visible minorities. How can we protect society in a manner that is fair to all? There is a danger as I write that cries to "defund the police" will scare many who are otherwise motivated to act against racial injustice. We may have a narrow window in time to enact real reforms that guide police to fight crime without terrorizing any parts of the population. Such reforms likely include:

- Bodycams. The evidence is admittedly mixed here, but I have urged transparency in government elsewhere in this book, and strongly suspect that brutality is less likely when people might see it. Victims of brutality would also gain a much better shot at redress.
- Ban chokeholds.
- Keep better data on incidents of police brutality.
- We need to appreciate that some people join our police forces (and armies) to exercise force rather than serve the people. It may be difficult to screen these out during recruitment, though we should try. We need to be more willing to fire police officers who exercise unnecessary violence. Yet we also need to appreciate that policing is a challenging job, and that police officers face many situations in which they have legitimate fears for their safety. We need to help good cops do their job while reining in bad cops.
- There appears to be a clear need for a greater role for social workers or psychologists in handling many police calls. Many of the worst outcomes occur when dealing with people who are mentally unstable or agitated. The use of force in such circumstances tends only to make matters worse. Trained professionals can often achieve a peaceful resolution. (We may also want to change the way we train police officers.)
- I have mentioned community policing above, and also noted that racism is less likely when we know each other. Police officers who actually know the community they are policing are less likely to treat community members abusively.
- Values are again of critical importance. Police officers need to be encouraged not just to shed racist attitudes but to report other officers with troubling behaviours or attitudes.

3.2.9 Values

Educational systems across most of the developed world have had great success in recent decades in encouraging respect for diversity (Educational systems were not the sole mover of this change, and might be seen as having reacted to changes already occurring in society.). The generational shift that we have observed in a host of attitudes around diversity issues should signal that it is possible for societal values to change dramatically in a matter of decades.

As noted in chapter 2, there is an important downside to this story. Young people, when surveyed on a range of ethical issues, dutifully respond that it is up to

particular groups of people to decide what is right for them: "Honesty"; "It's okay as long as people like the idea." A laudable belief in diversity has triggered a belief that there are no core ethical values, and that all ethical questions are a matter for discussion within small groups. Beyond its implications for ethical behaviour, such attitudes risk a backlash against diversity itself. If we must choose between honesty and diversity, which do we prefer? The ethical challenge of our times, then, is to manage to embrace both diversity and a general respect for certain core values.

We argued in chapter 2 that there is broad support for key values such as honesty and both personal and social responsibility. There is also a general if less apparent appreciation of self-knowledge. It should, then, be quite feasible to reinvigorate societal support for such values, and thus encourage more individuals to pursue them more keenly. But who will lead such a cultural renaissance? Politicians in general are too distrusted to be plausible advocates of ethical behaviour. Religious leaders seem to be far more interested in who is sleeping with whom than with honesty – and their advice in any case will only motivate some believers. If we have a fair bit of societal consensus, then our school systems can provide some ethical education. It is often wondered if we can "teach" ethics. The answer is that we can certainly teach students the arguments in favour of certain ethical precepts, and invite students to reflect on what sort of people they want to be. A reflective life is more likely to be an ethical life, and we can get our young in the habit of thinking about ethical issues. (Universities can reinforce these lessons. But social sciences often devote little attention to our ethical nature, and enrolments in philosophy have been in decline. I think all university students should be exposed to an inter-disciplinary appreciation of ethics.)

BOX 3.6: TWO PATHS TO SELF-KNOWLEDGE

Humans can usually grasp how to be honest or responsible, once they have decided that they wish to do these things. Self-knowledge is a bit more mysterious. How exactly do we come to know ourselves? It is thus the value that can benefit the most from some educational effort.

There are two paths to self-knowledge. One is introspective. It involves regularly asking questions: Why did I do that? Why do I feel bad about that? Why was I so angry there? Why are my friends annoyed with me? What are my values and am I living in accord with them? What do I want to do in life and am I taking steps to get there? As in most things in life, one gets better at answering such questions with practice. Your goal in introspection is to uncover motivations that you would not consciously condone: fear, jealousy, insecurity, and more. Through self-knowledge you can become less of an arrogant jerk, and achieve greater success and happiness in life.

The second path is outward-looking. We will each of us receive a lot of advice and criticism in our lives. Some of this will be misguided, reflecting the

stupidity or jealousy or arrogance of those we interact with. It is dangerous to take every criticism to heart, but equally dangerous to assume that everyone else is a malevolent moron. We must actually ask why we received a certain piece of advice or criticism. The fault will sometimes lie with ourselves and sometimes with others. The greatest danger here is that we use anger as a weapon that prevents even our closest friends and family from offering advice.

These attitudes will have to be reinforced in adulthood. In the absence of any elite that can encourage ethical principles – and we should appreciate that the vast majority of historical societies had a religious or state elite that did encourage ethical behaviour – this reinforcement must be diffuse. We must all, that is, encourage ethical behaviour and discourage unethical behaviour. We should be respectful in so doing, recalling that there may be occasional reasoned exceptions to any ethical principle. We should avoid arrogance and try to avoid unnecessarily humiliating others. But it should be okay to question whether someone else has acted honestly or responsibly – both in our personal lives and in the wider political sphere.

Global surveys find that levels of trust have declined in most countries in recent decades. We can reinvigorate trust by encouraging honesty and responsibility. And trust in turn facilitates both economic transactions and constructive political dialogue, not to mention strengthening our sense of community. It is, of course, far better to ground our sense of community in trust and shared values than in hostility toward others.

A cultural renaissance will not happen overnight – especially in the political sphere. If we were to start today pointing out every ethical lapse by political leaders, we would have little time for anything else. Yet if we make a start and – importantly – are willing to cross political lines in holding officials to some minimal ethical standards (and I personally have been appalled of late by politicians from across the political spectrum in my country) then we can slowly through time raise our expectations. One critical step is that we decide not to vote for people who do not live up to the standards we hold ourselves and our children to. Maybe at first we need to vote for the least offensive candidate. A collective message that ethics plays a powerful role in our voting decisions can change the way politicians behave.

We have often in this book argued that institutions work best when supported by values. The reverse argument also holds. Our efforts to create greater transparency in government will make it easier to monitor the behaviour of elected officials. Moreover, governmental transparency will do much to deflect the powerful but misguided idea that politics is inherently murky and thus only scumbags can get things done. Politicians often justify ethical lapses on this basis, at least to themselves. And voters often sigh and vote for rogues for the same reason. If debate happens in the open, and government contracts are awarded openly, and government programmes are evaluated objectively, then honesty can more readily triumph over deception and deceit.

Our efforts toward a cultural renaissance must move far beyond the political arena. We should also hold entertainers and athletes to ethical standards. These can in turn play a critical role in urging ethical behaviour in others. Indeed these might potentially do more good in the world by setting an example for their fans than by singing or scoring: There may be thousands who could sing or score almost as well, but there may be few who can effectively convince others to behave ethically. It might be a good start if professional sporting leagues imposed tougher penalties for cheating.

If we will collectively urge ethical behaviour, then we should consider moving some other ethical values into the ethical core (that is, the set of values that can be strongly justified according to each of the five types of evaluation). We might here stress open-mindedness, respect for others, and humility. These each receive limited support from societal traditions to date. In the political arena, these will encourage the sort of respectful discourse on which democracy depends, and which is most likely to generate the sort of strategies advocated in this book that can achieve wide public support. We could then engage in discussions rather than debates where we strive to understand why others disagree with us, and how we can work toward consensus. In our daily lives, such values can spare us from inflicting pain on others by treating their ideas with disdain or arrogance.

While the benefits of these values may be clear, we tend in both political and daily life to prefer people with strong opinions. Those who are flexible are accused of being weak or "sitting on the fence." This may be a fun attitude when friends gather to debate which is the best football team, but is harmful in more serious conversations. We need to make the obvious point that only a fool refuses to change their mind in the light of new information. A politician who changes their mind should be allowed to justify this change. Even if they are just reacting to new polling data, we can respect that they have shown some intellectual flexibility.

We may each take some pleasure in scoring a debating point (I am guilty, I confess). But we can also take pleasure from learning, and from identifying a solution that works for a lot of people. If we internalize values of respect, open-mindedness, and humility, then our intuition will guide us away from our baser instinct to crush our opponents.

As long as society's values tilt toward close-mindedness, the open-minded will have to tread carefully around the close-minded. The latter can employ a range of rhetorical strategies – appeals to emotion, vague definitions, obfuscation, outright falsehoods – that will make their arguments appear stronger than they are. The best strategy here may be to ask precise questions and patiently insist on very precise answers. Yet even then you may appear to lose in the eyes of others just because you do not score cheap debating points. If you cannot succeed in drawing the other into dialogue, you may then need to focus on outlining your own arguments. (We discuss approaches to advocacy in chapter 6.)

One of life's little lessons is that arrogance is almost always a mask for insecurity. I learned that lesson early in life when thrown into close contact with someone I had long disdained at a distance for their arrogance. It became abundantly clear

that he was a twisted mass of insecurities who knew no better way of navigating life than to project a false confidence and refusal to accept disagreement. It was sad. And it was unfortunate not only for those around him but for himself, because he was widely thought to be a jerk. A bit of humility would have served him well. This need not mean a lack of self-confidence: We can and should project a justifiable confidence in our abilities, while recognizing that we always have more to learn from others.

We should, more generally, be willing to carefully debate any societal value or belief. We may have inherited values and beliefs that are ill-suited to the modern world. We should not discard these casually, but should reflect deeply on the role they may play in human society. We function in society only because we have shared expectations of how others will behave – this is why human societies have cultures – and should thus have a healthy wariness of cultural innovation. Yet cultures evolve through time, and we should not shy away from trying to guide cultural evolution in beneficial directions.

3.2.10 Sense of community

We have urged above a balance between respect for diversity on the one hand and respect for a core set of values on the other. This balance may be absolutely critical for our sense of community. We need to respect our differences but feel that we have some shared values and purpose. Our sense of community will be stronger the greater the sense of shared values. Here even simple everyday norms can be important: If, for example, we agree on how to greet others (bow, shake hands, cheek kiss), we both prevent a lot of needless misunderstanding while forging a common bond.

Our sense of community depends critically on how parents raise their children. Our respect for diversity encourages parents to pass along cultural practices to their children. Yet if we are to be a community, then parents must accept that their children will have friends from other groups, and may even date and marry members of other groups. Diversity is, after all, advantageous only if we interact with each other, learning about other customs, enjoying different cuisines, and participating in diverse celebrations. Religion becomes the great challenge here for some religious traditions are very hostile to the idea of marrying out. We can still encourage parents to be as flexible as possible.

3.2.11 An interdisciplinary education

This may seem like a bit of self-flattery coming from a scholar of interdisciplinarity. Yet one key premise of this book is that we all need to be able to grapple with complexity. Interdisciplinarity encourages us to appreciate how the phenomena studied by one set of scholars interacts with the phenomena studied by different sets. We have taken great care to explore cross-disciplinary linkages when investigating goals and strategies in chapters 2 and 3, and will need to do so again when

examining trends in the next chapter and surprises in chapter 5. A public trained in interdisciplinary methods can see when experts are biased by their expertise and are failing to consider other phenomena. Interdisciplinarity teaches us to be wary of expert bias. Importantly, it does so in a way that does not cause us to either ignore or vilify expert advice. Rather, we are guided to carefully evaluate the reasons why experts might disagree, and seek to integrate the best elements of their insights into a more comprehensive understanding. Interdisciplinarity thus teaches both skills (systems thinking, evaluation, comparison, integration) and values (respect, constructive scepticism, confidence in our own capabilities) that are crucial if democratic citizens are to constructively engage the complex issues before us.

Decades ago, many philosophers of science argued that science advanced by proving or disproving hypotheses. Most philosophers of science now appreciate that proof and disproof is impossible. Some then engage nihilism, a belief that we have no good basis for choosing one hypothesis over another. Yet most at least implicitly recognize that science advances by amassing argument and evidence and striving for consensus around certain hypotheses. Interdisciplinarity builds on such a belief, arguing that we are best able to have confidence in a hypothesis if it can be justified by different methods, data, and disciplinary perspectives. The wider public is often frustrated when scientists disagree, and take this as a sign that they know nothing. Interdisciplinarians show that disagreement is a step on the way to better understanding, but that we each have techniques for understanding the bases of disagreement and seeking to transcend this. Citizens need to find a middle path between believing everything an expert says and disdaining everything an expert says. Interdisciplinarity provides a path for constructive engagement with expert advice.

One large strand of the Future Studies literature focuses on providing advice to organizations on how they can best navigate the future. That strand strongly emphasizes the need to gather a diverse group (usually from both within and beyond the organization) and having these engage in conversations about both the trends they see in the world and strategies for addressing these. In scaling up this idea to society as a whole, interdisciplinarity provides the diversity of viewpoints from which we will best be able to plot our way forward.

We mentioned confidence above. It is easy for citizens to feel overwhelmed by the complexity of the world. It is then tempting to adopt some ideology or follow some charismatic leader, rather than engage the challenging task of identifying desirable public policies. This book will hopefully help people to make sense of their world, and see how they might usefully participate in discussions with others. An interdisciplinary education should further discourage unthinking obedience but also nihilism, and encourage us to an open-minded and humble kind of self-confidence. Each of us has unique skills and experiences to contribute to public discourse, and we will make our best contribution if we are able to integrate the understandings of others with our own.

It deserves to be stressed that a good interdisciplinary education will expose students to the five types of ethical analysis introduced at the start of chapter 2. It

should then urge students to reflect on what sort of person they want to be. Less obviously, an interdisciplinary education should introduce students to the study of rhetoric. They should be able to identify different rhetorical strategies, and thus develop skills at analysing the true meaning of what others say.

Though most of the interdisciplinary literature focuses on college education, interdisciplinarity can usefully infuse elementary and especially secondary education. Interdisciplinarity encourages a problem focus rather than a subject focus. This can motivate students who otherwise under-appreciate the value of the distinct subjects they are taught. Why don't we teach high school students how to fill out income tax forms? This important activity requires a mixture of reading skills and algebra skills, and might thus motivate students to pay a bit more attention in both language and maths classes.

I have a pet peeve: that we do not relate probability theory (a staple of high school maths) to the real world as we could. Here is one example: The occasional instance of people achieving great success despite being born into humble circumstances encourages many in the belief that society need not provide greater opportunities to the disadvantaged. But we should look at the probabilities: If children from some neighbourhoods have only a 5 per cent chance of getting a good education or career, then there is clearly scope for public policy or philanthropy to improve their chances. We all employ probabilistic analysis in our daily lives (for example when choosing the route to work that is likely to be quickest) but need to practise consciously applying it to novel situations. A greater facility with probabilistic analysis would allow citizens to better appreciate a range of public policy issues (including how best to deal with a pandemic). As it is, our public policies sometimes simply ignore risks with low probabilities and at other time lavish great attention on events that occur rarely (such as terrorist attacks). Psychological experiments suggest that our intuitive (subconscious) thought processes grapple poorly with questions involving probabilities; it is thus particularly important that we substitute conscious applications of probabilistic analysis.

We noted in chapter 1 that there would be considerable scope for creativity in identifying strategies, persuading others of the value of these, and predicting the future. Scholars of interdisciplinarity appreciate that there is much scope for creativity in interdisciplinary analysis. Indeed there is a broad similarity between the process of interdisciplinary analysis and the creative process as outlined by experts in the two fields. In both cases, one must start with a question (that is, recognize a problem or opportunity). One then gathers relevant information. The greatest creativity (or interdisciplinary discovery) will generally come from connecting quite disparate ideas from quite distinct communities – but there is also a greater risk of failure the farther afield one wanders. The act of inspiration will usually occur subconsciously – leading to a mistaken sense that such things just happen to creative geniuses – but is only possible because the mind has been prepared by the previous explorations. Notably, the act of inspiration usually comes while the mind is at rest: while we are walking in a park or taking a bath. Some find that music or aromas or physical sensations stimulate inspiration. Looking at complex

diagrams like the flowcharts used in this book, but with all relevant ideas thrown on a page, can also stimulate inspiration. Inspiration, when it comes – and we all have moments in life when the solution to some challenge suddenly comes to us – is rarely perfect and so we need then to carefully improve it (which will be much more likely if we are honest with ourselves). Last but not least, we need to persuade others of the value of our creative insight. The histories of both art and science are littered with innovations that were not appreciated for decades due to a failure in persuasion. Many other great ideas likely disappeared without a trace for the same reason. The point of all this is that *we can teach people how to be more creative.* Beyond formally teaching people the steps outlined above, and strategies for each step, we can create opportunities within our schools to practise creativity. Like any skill, creativity improves with practice. And success in small creative activities increases our confidence and thus prepares us for creativity on a grander scale. Small children are almost always creative, and we need to stop beating creativity out of the bulk of the human population in our schools.

Many futurists understandably urge us to teach about the future in our schools. Ignorance about the future encourages fear and a focus on the short term, while developing an understanding of the future can encourage both personal planning and the advocacy of long-term strategies. This book is meant to encourage the goal of teaching about the future. Though written with universities in mind, there are certainly core ideas that could usefully be communicated in high school. Though Future Studies is inherently interdisciplinary, history teachers may find it easiest to include elements of the future in their classes, since they already address key trends and are accustomed to taking students away from a focus on the present. A course about the future could be an invaluable component of degrees in education.

3.3 Interactions among strategies

We have taken great care in selecting strategies that are supportive of multiple goals. Special note can be made of how *efforts both to enhance democracy and to encourage key values have a positive impact on the pursuit of all other goals*.

It would be nice at this point to extend Figure 3.1 to cover all of the relationships addressed in this chapter, and thus parallel the exhaustive treatment provided in Figure 2.1. Such a diagram, though, would be both large and messy. The reader can usefully imagine a diagram three or four times the size of Figure 3.1, with arrows running all over the place.

Most of the relationships on that diagram would be supportive. We can usefully summarize these here (we ignore those that have already been captured in Figure 3.1):

- Strategies to enhance economic security, or restore faith in government by increasing honesty and transparency, or achieve international collaboration, will make it easier to expand carbon taxes.

- Subsidies for environmentally friendly technological innovation can yield both environmental and economic benefits.
- Changes in the way we measure economic prosperity can facilitate the pursuit of environmental goals both directly by changing how we measure economic success and indirectly by facilitating the pursuit of leisure.
- Improvements in education, health, transport, and many kinds of technology have a direct positive impact on individual capabilities and freedoms, at the same time as they enhance economic prosperity. Educating about creativity, and facilitating part-time work, may be particularly important.
- Institutions that enhance competition pursue both justice and economic prosperity.
- Strategies to enhance economic security allow us to better pursue strategies of economic flexibility that encourage prosperity. Moreover, they reduce business cycles, which may encourage investment and training.
- Strategies that target disadvantaged groups can improve equity and justice (and thus sense of community) while enhancing economic prosperity.
- Voluntary strategies to reduce inequality avoid negative impacts on prosperity while increasing human happiness.
- Strategies to eliminate undeserved income, and close some tax loopholes, enhance justice and prosperity while reducing inequality.
- Public works programmes might enhance prosperity while reducing inequality and economic insecurity.
- Strategies to make legal immigration more attractive can enhance justice and equality internationally while also enhancing prosperity internationally.
- Strengthening democracy, and especially transparency, can support world peace.
- Strategies for increasing international trade support both peace and prosperity.
- Strategies to reduce inequality and economic insecurity reduce crime also. So also will strategies for addressing mental health issues.
- Strategies to collaboratively revisit drug laws may reduce crime rates while enhancing the sense of justice and community among those who use drugs (and their friends and families).
- We should stress the reciprocal relationship between strategies for encouraging ethical behaviour and institutions such as governmental transparency that encourage ethical behaviour.
- Education around interdisciplinarity and creativity enhances individual capabilities, and thus supports both democracy and economic prosperity.

In Figure 3.1 we stressed the importance of better decisions around spending. We have had cause on several occasions since then to talk about how certain strategies might be pursued in a way that minimized their impact on government budgets. Some strategies would serve to reduce government expenditures. Since other strategies require government spending, it is absolutely essential that we pursue each strategy as efficiently as possible. Though we have not been able to do a careful

cost accounting in this chapter, it would appear that the entire suite of strategies outlined is eminently affordable – but only if we are careful in implementing them. Care in doing so is in turn essential to restoring faith in democratic governance.

Nevertheless, some conflicts between our strategies and certain goals are unavoidable. Efforts to enhance the environment can have a moderately negative effect on certain measures of economic prosperity. In turn, certain types of increased economic activity will have negative impacts on the environment. Efforts to enhance economic security may decrease the work motive for some, and thus have a negative impact on economic prosperity – though increased security may have a much greater positive impact on the incentive to invest. Some strategies for reducing inequality likewise can have some negative impact on prosperity. Last but not least, the ethical challenge of our time pits respect for diversity against respect of core values.

Even where conflicts are unavoidable, we can identify strategies that minimize the conflict:

- Carbon taxes pose the smallest negative impact on economic prosperity of any programme to reduce carbon emissions. They may encourage beneficial changes in consumption choices.
- Requiring individuals and firms to donate may limit the negative incentive effects of "taxing the rich" while fostering innovations in social policy.
- Public works programmes may minimize the negative incentive effect associated with efforts to reduce inequality or enhance economic security, while enhancing prosperity by producing results that people value.
- Justifying a manageable set of core values in terms of each of the five types of evaluation limits the conflict with respect for diversity. Importantly, this reduces the likelihood of a backlash against respect for diversity. Achieving a balance between respect for diversity and respect for core values is critical for our sense of community.

Readers should not be too surprised that the positive relationships far outweigh the negative relationships – though they should certainly look carefully that this result does not reflect authorial bias or naïveté. After all, these strategies were chosen with the idea of pursuing a range of goals very much in mind. The conclusion I would draw is that we can indeed pursue *all* of our goals simultaneously.

BOX 3.7: DELPHI AND SIMULATIONS AND GAMES

We noted in chapter 1 that we would applaud but not apply some methods recommended in the Future Studies literature. We can usefully note a couple of these here. One approach is mathematical simulation. The challenge here is to

reduce the complexities of human interaction to a set of equations. Yet where possible, such simulations can give us some idea of the likely effects of certain policies, or even a mix of policies.

A quite different approach seeks to identify consensus among some group of experts. The most popular method here is the Delphi method (named after the ancient Greek Oracle of Delphi, but in fact a modern method). A group of experts are asked a series of questions, and their answers are shared anonymously among the group. The same questions are asked again, with participants adjusting their answers in response to what others have said. The result is generally some sort of consensus. This consensus is often nuanced as participants take on board ideas and critiques from others. The Delphi method is often used in forecasting. There are possible class exercises here. Students might be asked to predict the results of any of the strategies discussed in this chapter (or other strategies they might suggest). Alternatively, they might be asked to choose their favourite three or five strategies. In either case, students will learn how others can bring a different perspective to an issue. More broadly, students will gain practice in achieving consensus.

The Delphi method may prove particularly valuable if a diverse body of experts is surveyed. They can thus bring diverse understandings to bear. And the participants then have a greater chance of gaining new insights from each other.

The Future Studies literature often also recommends the construction of games that can test how some strategy might actually work out in the real world. We might, for example, imagine that the class has been randomly selected to serve as a citizens' assembly to address a particular issue. Particular students might undertake to provide "expert" advice to the assembly. Such a class exercise will serve to familiarize the class both with a particular issue and with the challenges and opportunities associated with a citizens' assembly. As with the Delphi method, the results may be particularly intriguing if the class is diverse in terms of disciplines or social groups.

Some futurists (see Bibliographic reflections) have recently proposed a "backcasting wheel" exercise. We start with a societal goal, and then identify the changes necessary to achieve that goal. We then identify the changes necessary to achieve those changes. They recommend that groups of between five and 12 pursue this exercise. The group can identify likely challenges, opportunities, and signposts of success. Such an exercise can flesh out the analyses in this chapter, while preparing students for the challenges and opportunities to be addressed in the next – and for identifying elements of a complex societal project beyond those discussed in this book.

The backcasting wheel is a twist on the "future wheel" exercise that we will address in the next chapter. This involves diagramming the effects of trends going forward. A similar exercise can be performed for any strategy. What are

the likely effects of any strategy? How do these interact? What are the effects of the effects? How do these interact? Some (groups of) students may perform this exercise for one strategy and then integrate their diagram with an analysis by other students of a different strategy.

4

PREDICTING PLAUSIBLE FUTURES

4.1 How to identify plausible futures

We should begin by recalling two important points that we made in the introductory chapter. First, we simply cannot predict the future with great accuracy. Attempts to do so in the past have been very hit-and-miss. Not surprisingly, most forecasters get some things right but others wrong. We can, though, predict plausible futures. That is, we can project some existing trends into the future and imagine what the world would look like in a few years if these continued. Since the world is complex, we should try to look for trends across diverse phenomena and imagine how these might interact. We should doubt that the future will unfold exactly along the lines of any plausible future we may outline – in part because each trend is unpredictable, and in part because there will also be surprises (see next chapter). Yet we can be confident that the future will bear some important resemblance to at least some of the plausible futures we might identify.

Second, we can then investigate how we might nudge plausible futures toward the desirable futures that we wish. The great advantage of identifying plausible futures is that we can then essay to accentuate the characteristics of those futures that we like while mitigating their negative features. We will be far better able to bend our actual future to our collective will if we have thought in advance about how to deal with plausible futures.

One problem here is that humans value certainty and thus are attracted to prognosticators who pretend to an unattainable degree of confidence regarding the shape of the future. The laws of probability suggest that, if there is a sufficiently large body of forecasters operating fairly independently, one or two of these will just by chance get most of their predictions right. They may then be hailed as visionaries, but are highly unlikely to be able to reproduce this success in the next time period. Beware of those who predict the future with extreme conviction – even if they

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have had some success in the past with predictions. It may be even more dangerous, though, to give up on trying to see into the future at all.

Our first task in this chapter is to identify trends that might reasonably be expected to extend into the future. As in the preceding chapter, we benefit from having a finite (but large) set of phenomena for which we can attempt to discern trends. We will proceed to identify a set of plausible trends.

Second, our interest in interactions leads us to ask whether the trends we have identified are likely to be supported or discouraged in future by interactions with other phenomena. Will existing trends in climate be exacerbated or attenuated by political and economic interactions? We will combine these first two stages of analysis as we discuss particular trends below.

We should appreciate that even in our world of change, some things do not change. We continue in most countries to drive on the same side of the road as our grandparents did. If we could be frozen in time for three decades, we would almost certainly awake in a world that was similar enough to our own that we could navigate it. We will not in this chapter enumerate the many ways in which society will likely change little (though note that changing little is still a trend of sorts), but readers should keep in mind that the trends we discuss must also interact with phenomena that do not change (much).

We should note here that systems thinking lies at the heart of the field of Future Studies. There is a shared assumption in the field that all phenomena are related, at least indirectly, to other phenomena. There is much talk of systems within systems (or systems-of-systems): that some subsets of phenomena interact powerfully with each other but more weakly with other phenomena. It makes sense, then, when investigating any one phenomenon, to ask which other phenomena it interacts most with, but not to lose sight of others which may occasionally exert an important influence (this will generally require a very interdisciplinary approach). We may not always have to worry about the effects of epidemics on economic output, but we should be prepared for instances where the effect looms large. There is a common recognition within Future Studies that the analysis of systems often generates surprising and counter-intuitive results. We should be aware, then, that trends may unfold quite differently in future than in the past due to interactions with other phenomena. Of course, this simple fact makes predicting the future even more challenging. It is therefore even more important to do it right.

BOX 4.1: EMERGENCE

Properties may emerge from a system of interactions that are difficult to understand in terms of the phenomena that interact within the system. For example, we do not fully understand how "life" emerges from the set of biological interactions among organs in any lifeform. Systems theorists often speak, then, of "emergence." It could be that "sense of community" emerges from a complex

set of interactions in a way that is hard to attribute to particular phenomena. If so, it will be almost impossible to predict such emergence in advance. We will therefore recognize our limitations here and stick to the more prosaic task of discussing particular relationships among phenomena in what follows.

Third, we can close the chapter by investigating plausible futures. This will involve contemplating combinations of the trends we have investigated in turn. We will have a particular interest in trends in different phenomena that seem to be mutually reinforcing.

There are a few points emphasized in the literature that we should keep in mind as we proceed:

- We are limited in our ability to do reliable quantitative forecasts. These are generally only possible for some phenomena and short time periods.
- We should seek to identify both good and bad trends: That is, we need to examine trends that lead us toward desirable futures and trends that lead us away. We can then seek to foster the first kind and disrupt the second.
- We should not limit our attention to trends narrowly defined. It is equally valuable to identify phenomena for which cyclical behaviour is likely in future (such as business cycles).
- We should be alert to the likelihood that trends may be incompatible: If two trends cannot coexist, which is likelier to dominate and what are the plausible outcomes?
- We should always ask if/when a trend is likely to end. This is especially important for trends that are occurring at an increasing rate, for exponential trends cannot proceed forever. People are, but should not be, surprised when an exponential trend ends. Nevertheless, we should worry about exponential trends for, while they continue, they can have disruptive effects on society.
- If we are incorporating commitments made by leaders in our projections, we should ask if these are plausible. It would be foolhardy to simply assume that governments will hit their carbon emissions targets, for example.

GUIDING QUESTIONS

How confident can we be that a particular trend will continue? How confidently can we predict how fast the trend will develop over time? Will there be cycles within the trend? What phenomena will the trend interact with? How will these interactions affect the trend? Will the trend end at some point? Is the trend good or bad or mixed in its effects? How might we act to enhance the good and limit the bad?

4.2 Particular trends

4.2.1 Climate

It will get warmer. And then warmer still. Maybe not every year or every place, but the trend is upward for the foreseeable future. This is perhaps the safest prediction in this whole book. It is now abundantly clear – even to millions who were nay-sayers just a decade ago – that the world's climate is warming at a historically unprecedented rate. There are no obvious natural causes of such a trend – the sun is burning about as hot as ever and the earth is orbiting much as it always has – and good theoretical reasons to believe that carbon dioxide and methane emitted by human activity is preventing heat from escaping the atmosphere. It's possible that 99 per cent of climate scientists might be wrong, but it is extremely unlikely.

We can also safely assume that at some point before we make the planet unliveable, governments will get serious about limiting carbon emissions. While we can despair of the sluggishness with which governments around the world have addressed climate change to date, we can take some solace in the fact that there have at least been international agreements, targets, some carbon pricing, many incentives for renewable energy innovation, and more. Some groundwork has been laid on which more determined efforts can build. There is some chance that we will wait too long to act decisively and will find the damage irreversible. It is probably more likely that we will wait long enough that action is feasible but far more expensive than if we had acted earlier. At some point, then, climate change will become so oppressive that governments are forced to act, and after some period of time temperatures will stop rising. It may even prove possible to pull temperatures back downward by reducing carbon in the atmosphere.

The rise in temperature is a trend that will end. It will end either because humans act to stop it, or because climate change acts to erase humans. Our efforts in this book will be more useful in the first scenario.

When will governments get their act together? How bad do things have to get before they act? One challenge here is a risk that the rate of climate change might increase dramatically due to positive feedback loops: Melting glaciers means that less sunlight is reflected back into space; melting permafrost releases methane into the atmosphere, which enhances global warming; climate changes may destroy forests in some regions that serve as a store of carbon. Another challenge is that climate change may proceed at different rates and with different effects in different countries. As luck would have it, Africa has seen more rapid increases in temperature of late than other continents. This is unfortunate in many ways. Climate change has its most dramatic effect on agriculture, and African economies rely more on agriculture than is the case on other continents. Most African countries are poor, and thus limited in their ability to help farmers impoverished by climate change. If African governments are the ones with the greatest motive to fight climate change, they are also the ones that can have the least effect, for Africa contributes a whopping 2 per cent of global carbon emissions. There is, of course, a global injustice that the continent that contributes the least to climate change would suffer the most from it.

Canada might find slightly warmer temperatures not such a bad thing. Other countries might also find that they are spared the worst ravages of climate change for some time. Still other countries – like those in Africa – who suffer from climate change might appeal to the sense of duty and justice of those that are spared. I do not like their chances. International cooperation in fighting climate change may be hard to achieve.

It is hard to predict the precise regional impacts of climate change. Changing temperatures cause changes in wind patterns and probably ocean currents. Some regions will become hotter and wetter. Some will likely become hotter and drier. Some may become cooler. Climate change has weakened the jet stream and sometimes allowed polar air to slip farther south in both North America and Eurasia than it usually does, into regions ill-prepared for snow and ice. [This paragraph was first drafted before winter storms devastated much of Texas in March of 2021.] Beyond its effect on averages, climate change appears to increase climate variability: sharper seasons, and more nasty storms.

It should be appreciated that rainfall patterns may change – due to deforestation and urbanization, among other things – even if temperature stabilizes. The lesson here is that carbon is not the only threat to complex ecosystems.

Hotter and drier may turn farms into deserts, a process that has been proceeding for decades south of the Sahara. In many other regions, farmers will have to change their crops to reflect climatic change. This is quite feasible, for humanity has bred crops to grow in a wide range of climatic conditions, but will require that farmers learn a new set of crop-specific skills. We can expect agricultural productivity to decline temporarily during such transitions. And we may need to develop new strains of crops that are better accustomed to heat. Last but not least, we should appreciate that humans cannot work as hard in hot and humid temperatures: This means that not just farmers but construction workers and a host of others that spend much of the workday outside will be less productive as temperatures rise.

Climate change will have a less dramatic effect outside of agriculture, but will force factories, stores, and offices to spend more on air conditioning. The usage of air conditioning has been expanding for decades in developed countries and is becoming increasingly common in developing countries. Air conditioning presents two environmental challenges of its own: It requires a lot of energy, and the coolants used contribute to the weakening of the ozone layer (which may be responsible for increased rates of skin cancer in southern Chile). (Recall from above that we can design buildings to reduce the need for air conditioning.)

Climate change appears to increase the frequency of hurricanes, and perhaps tornadoes and even blizzards. Hurricanes already cause billions and billions of dollars in damages with some regularity, and this toll can be expected to increase with climate change. Climate change will also cause a slow but steady rise in sea levels as polar icecaps melt (This trend is mitigated a bit by increased evaporation.) This will cause costly evacuations or efforts to build sea walls in many parts of the world. We will return to the question of climate "surprises" in the next chapter.

We have noted in chapter 3 that efforts to prevent climate change may impose moderate costs in terms of economic prosperity. We cannot stress too much here that failure to stop climate change will impose huge costs on future economic prosperity. It is hard to quantify these costs. It seems clear, nevertheless, that the disease is indeed far worse than the cure: Failure to address climate change will cost far more than efforts to address it will.

We can again recognize that there will be transition costs as both consumers and producers shift from oil and coal to other sources of energy. These can be mitigated if we develop better alternatives. Some futurists predict that the costs of renewable energy will fall below the costs of non-renewable energy over the next decades. If so, this would render the transition away from carbon emissions relatively painless for most of society (we should recognize that carbon is an ingredient in some industrial processes such as steelmaking, not just a source of energy; also methane and nitrous oxide emissions are important sources of climate change). One potential challenge here is that one country, China, has come to dominate both the mining of "rare earths" essential to modern battery technology (and many electronic devices) and the production of solar panels and wind turbines. It may be prudent to encourage greater diversity in sources of both raw materials ("rare earths" are not all that rare, though they are expensive to mine) and finished products – though this may occur naturally as demand increases.

We might also worry about political disruption in countries that rely heavily on exports of oil or coal or natural gas. The political turmoil that has gripped Venezuela in recent years owes much to the decline in the price of the oil that it sells on world markets. That turmoil may be a harbinger of things to come in countries such as Saudi Arabia or Russia that also depend heavily on energy exports.

There are also non-economic costs of climate change. Humans are generally less healthy in hot and humid climates. Humans have less energy for a wide range of entertainments when hot. Our collective faith in democratic governance will suffer grievously if governments continue to fumble their response to climate change. There is now a large majority in favour of doing something in most countries, but that shared purpose has not translated into successful action.

We should not be too disheartened. As we have said earlier, governments have succeeded in limiting certain types of local air and water pollution. Globally, the world has succeeded in arresting the process of ozone layer depletion. We are not necessarily incapable of action. And we have outlined in the preceding chapter a set of strategies that can be followed if governments have the motivation to do so.

4.2.2 Population, disease, and nutrition

Just a few decades ago there were widespread concerns about a population explosion that would soon outstrip the planet's ability to feed people. Those concerns have receded as population has stabilized or even declined across much of the world. Population in the vast majority of countries is now expected to stop growing during this century. Concern is now localized and focused on several countries

in the Middle East and Africa where population growth rates remain very high (though even there these rates have declined significantly).

A handful of factors have contributed to declining birth rates in most of the world:

- Urbanization (so that children can no longer perform productive tasks on farms for their parents).
- Public education, and laws requiring children to go to school (which again reduce the ability of children to work and contribute to family income. Moreover, parents who want their children to excel at school may have fewer children so that they can focus their efforts on these).
- Pension plans and other social programmes that reduce the reliance of the elderly on children for support.
- Maybe the range of alternative goods and services for parents to spend income on.
- Perhaps most of all increased female decision-making power within families, which in turn reflects female education and employment.
- Industrial chemicals that are shown to reduce fertility, especially in men, have been released into our air and water. The effect these have had on birth rates is hard to estimate, but there is a possibility that fertility rates could fall dramatically in future if we do not reduce chemical emissions.

It seems likely that all of these trends will continue. Population decline is inducing some countries to use public policies to encourage childbearing, but subsidies for childbearing must generally be very high to counteract these other forces. One big question is whether female power will grow rapidly in those countries that still have rapid population growth. People who remain concerned about global population growth are advised to support educational programmes for women in certain countries in the Middle East and Africa.

How might we evaluate population growth? In terms of consequences, we can still worry about pressure on the earth's limited resources. Though prices of both food and natural resources have generally fallen even while population has risen – we have grown more or mined faster than demand has risen – this happy outcome need not last forever. There have indeed been sharp spikes in the price of food in recent years that have suggested to some that we are getting closer to resource constraints – though output per person and per acre is still far lower in developing countries than in developed countries. Within countries it appears that moderate rates of population growth – below about 2 per cent – have no impact on the rate of growth in per capita incomes, but population growth higher than that does have a negative impact.

What about population decline? We have had little human experience of slow rates of population decline: These have bad effects such as decreasing markets for local firms but may have advantages in terms of spreading capital and natural resources and infrastructure over fewer people. Though childrearing brings pleasure

(but surely not every minute of childrearing!), parents and societies are both happiest when children are healthy and happy and face promising futures. Declining rates of childbirth may be associated with increased levels of happiness, especially among women, who bear the costs of childbirth. Values and beliefs around both personal and social responsibility can encourage parents to limit the number of children to those that can be cared for. Perhaps most importantly, though, a decision to have a child is one of the most important that most humans ever make. Governments may strive to encourage or discourage the choice but should be incredibly wary of explicitly limiting it.

Disease

At the same time that population has been rising, human health and life expectancies have been improving almost everywhere in the world. These results have reflected both an increase in average nutritional levels and a decrease in disease incidence. Both of these trends are likely to continue. Medical science continues to develop new ways of treating disease. And as poor countries grow rich, they can spend more on healthcare. Yet there are risks. New diseases may emerge, such as COVID-19, that healthcare systems struggle to cope with (see chapter 5). And healthcare systems in most of the developed world are under financial strain.

One major source of this financial strain is population ageing. Birth rates were unusually high in the decades right after the Second World War in most developed countries. Most developed countries as a result have a very high and growing proportion of elderly citizens. And healthcare costs are much higher for the elderly. Population ageing is no surprise: Every year, without exception, people get a year older. Governments have nevertheless uniformly failed to plan well for it – since politicians and bureaucrats are incentivized to deal with today's problems more than tomorrow's. We can reasonably anticipate that healthcare costs must rise as the postwar "baby boom" generation ages. Healthcare costs may then fall after this unusually large generation passes away, though we can anticipate that life expectancies will continue to rise and thus there will always be a greater proportion of the aged than in the past.

Public health systems could save some money by only performing procedures that have been shown to be effective. At present, in many countries, operations are performed that on average do no good: They may extend the patient's life by a couple of months, but alternatively the patient may die from complications due to the operation itself. Some have estimated that a third of procedures do no good on average. Procedures that are not known to be beneficial should only be pursued as part of a recognized research programme. We might also make tougher decisions about whether it makes sense to spend hundreds of thousands of dollars on a treatment that can only be expected on average to extend a life by a couple of months, especially if the quality of life is poor. Politicians and bureaucrats naturally shy away from such decisions – at least from making them transparently and openly – but society as a whole should be willing to make such decisions. It may

seem heartless, but we should reflect on what else could be done with that kind of money: Feeding hungry children with the same amount of money may accomplish far more good, for example.

We have elsewhere proposed citizens' assemblies to address issues that politicians avoid, and that mingle practical and ethical concerns. Can a citizens' assembly establish rules on which procedures to pay for from public funds, which will in many cases involve putting a price on the value of any extension in life to be expected? Or will even a citizens' assembly prove squeamish? Is this a place to rely heavily on expert advice? Doctors are accustomed to making life-and-death decisions, but may be biased against defunding medical procedures.

BOX 4.2: PRICING LIFE

Many people cringe at the very idea of putting a price on life. Yet governments already need to do so in making a host of decisions. Should we turn a busy intersection into a traffic interchange? One of the key benefits will be the lives saved in traffic accidents, and we can only decide whether the benefits exceed the costs by putting a price on the lives saved. Decisions about drug regulation, environmental protection, sporting rules, and a wide range of other endeavours also involve placing some value on human life. This is often not done explicitly, and thus the actual values attached to human life differ markedly across different government activities. This leads to large inefficiencies in government expenditure (spending hundreds of millions to save a life in one area but only a million in another). We would thus be much better off if we faced up to reality and had one official governmental price on life – which would vary by age, and would likely increase over time as we become more prosperous – that would guide all government decisions. This can be seen as a particular kind of governmental transparency, and a reminder of why governments often avoid transparency.

Economists estimate that people in the United States place an average value on life of about $10 million, based on how much they are willing to spend on things like smoke detectors. Yet such an estimate was only rarely mentioned in debates about whether it was worthwhile shutting businesses to cope with the COVID-19 outbreak. When estimates were that 2 million people might die from an unchecked outbreak, it clearly did make sense to shutter much of the economy if this could dramatically decrease mortality within a reasonable time frame, whereas it does not make sense for the much lower fatality associated with the seasonal flu. (We will address the important question of whether alternative approaches might have lowered fatalities at a lower cost in the next chapter.)

While we must put a price on life for practical reasons, we need not and should not abandon a broader philosophical appreciation that each life is

precious. We would not, for example, allow a rich person to pay $10 million for the right to kill another. There is a broader lesson here, pursued throughout this book: We should pursue economic policies that can provide us with the best balance among prosperity, equality, security, and environment. However, we should not allow the values that guide economic decision-making, where competitiveness and selfishness serve economic goals well, to infuse our entire society. Adam Smith reminded us centuries ago that our sustenance depends on the self-interest rather than the kindness of our butcher and baker (sorry, vegetarians; it was a different time). Yet in our families and communities, we need our butcher and baker to be collaborative and compassionate. We are all economic agents, but we are all much more than that, and we each need to reflect on our full range of goals in order to behave appropriately in each aspect of our lives.

Healthcare costs also rise due to technology. Many of the drugs and treatments developed by modern medical research are expensive to administer. Governments might tweak their research funding supports to encourage the search for less expensive interventions. Some technologies may in future reduce healthcare costs: Information technology in particular may reduce the cost of diagnosis and the likelihood of misdiagnosis.

There is a final reason why healthcare costs rise as a proportion of total economic output. Healthcare – and education – is a service that relies on face-to-face contact. We have come up with less expensive ways to produce most of the goods we consume but have not yet replaced the face-to-face delivery of medical services. We should thus not be too shocked that healthcare absorbs an increasing share of society's resources. There is some chance that technology will change this. People already feed their symptoms into online medical tools that can diagnose some ailments. (Online tools can also be very useful in some spheres of education.) The practice of family physicians may therefore be transformed so that they can concentrate on the most complicated cases, or at least those where symptoms can only be observed in person. Robots may one day replace emergency room doctors, but that is likely a far more distant prospect.

The danger to be avoided is that we make unwise cuts to healthcare expenditure. We should, as noted above, take steps to make sure that healthcare dollars are allocated wisely. However, we should not insist on doggedly keeping healthcare expenditures constant when there are understandable forces driving them upward.

Finally but importantly, we should as societies focus more on disease prevention. If we are successful in improving the environment, especially in cities, we will improve health outcomes. Likewise, if we can change attitudes that encourage obesity and drug abuse, we will achieve much better health outcomes. We tend to see health as a problem for healthcare systems rather than seeing it as subject to diverse influences within a broader system.

Ageing

We recognized above that populations are ageing in most developed countries, and discussed some strategies for addressing the healthcare needs of the elderly. It is useful to briefly consider some interactions between ageing and other phenomena:

- Most obviously, both governments and private pension plans should prepare for a future in which more people claim pension benefits. We have actuaries who estimate the contributions that are necessary now in order to fund future pensions. One problem is that both governments and private plans fail to meet actuarial targets. This should not be allowed. (It should be a crime, by the way, for a firm to raid its pension plan, but this happens all too often.) Public pension liabilities as determined by actuaries should be considered to be part of the government's debt. A second challenge is that actuaries need to predict the rate of return that the pension plan will earn on its investments. If the actuaries are too optimistic, pension plan operators are tempted to gamble on riskier investments in order to avoid having to raise contributions. There should be transparency about the amount of risk that pension plans take on. A third challenge is that governments may be tempted to "invest" pension plan assets in pet projects. This should be recognized as an effort both to avoid transparency and scrutiny and to risk money that is not the government's to allocate.
- While technological innovation has tended to raise the cost of healthcare, there are a set of innovations that may lower the cost of caring for the elderly. Smart homes may make it easier for the elderly to stay in their own homes. The internet makes it easier to hire the help they need when they need it. Robots may someday soon be able to socialize with the elderly.
- Still, ageing may have a beneficial impact on employment precisely because the elderly need assistance for many tasks. This employment effect will depend, of course, on pension plans or government subsidies being robust enough to allow the elderly to purchase the services they need.
- In most human societies in history, a small number of elderly have played an esteemed role in society, being sought out for their wisdom. They have often played an important role in the education of the young. We will be better able to (afford to) care for the elderly if these can play productive roles in society. Innovative programmes that place old and young in contact show much promise. And the elderly are more likely to remain happy and alert if they have useful roles to play.

Nutrition

Though there are still roughly a billion humans who do not get enough food to eat, that number reflects a dramatic improvement over the last decades (the dislocations associated with COVID-19 have pushed that number upward, hopefully temporarily). Food output has increased much faster globally than population. Transport

costs have fallen so that it is easier to get food to hungry people. And incomes have increased in most poor countries so that the poor can better afford food. This latter trend can be expected to continue in the absence of a major economic downturn (see below). The major danger on the nutrition front is thus that food output does not continue to rise faster than population. It must seem, though, that there is still much scope for increased production, especially in poorer countries. Both mechanization and chemical fertilizers could lead to increased output. Farmers should respond to higher demand by increasing production. Research on tropical crops may yield far better seeds – as research on rice and wheat and other temperate crops has done in preceding decades. There is also much that could be done to reduce food waste: As much as a third of the food that is produced in the world is thrown out rather than eaten (solutions include better storage, and giving slightly damaged foods to the poor or animals). But such transitions are not easy. And it could be that the easiest advances in agricultural technology have already been achieved. While a severe global food shortage seems highly unlikely, prudence calls for efforts to improve our agricultural technology. Prudence also suggests that we should pay more attention to potential dangers: that our use of chemical fertilizers may slowly deplete soil fertility, that pesticides and intensive farming may eradicate insects essential for pollination, or that increased homogeneity of the seeds used by farmers may expose us to the greater risk of a major crop disease. Governments are, it should be noted, insuring against the latter calamity by storing seeds that have been used in the past. Note, though, that it would still be costly to reintroduce old seeds on a large scale.

Climate change may have dramatic impacts on food output. These are hard to predict precisely. Climate change leads to changes in weather patterns. These have included, it seems, decreases in the power of the jet stream that normally separates arctic air from temperate air, with the result that arctic air has occasionally plunged much farther south than usual (an occurrence that gives climate change sceptics much to tweet about). So we cannot know precisely which areas will be afflicted by drought and which by flooding. Many areas may benefit from increased heat and humidity while others will suffer from those changes. Sadly, the tropics, home of most of the world's poorest, may suffer the most from rising temperatures. The prudent policy, of course, is to arrest climate change early. If not, the world may need to be prepared to see mass movements in crops and peoples.

There may be localized nutrition crises if food is not transported to people in need. Ironically, though, the best strategy in such a case may be to give those people money rather than food, for this will encourage local food production.

Looking ahead, the greater global calamity may be a shortage of water rather than food. It is harder to expand the world's supply of drinking water. And climate change will likely yield dramatic changes in how rainfall is distributed across the world – though overall rainfall is likely to increase with increased humidity levels. Salt water is abundant, and desalinization plants are a proven technology in some dry countries. But desalinization is not cheap, and some dry areas may be a long way from salt water. Drilling for water may be possible but subterranean aquifers have limited capacity. We may need to either move people or pipe water long distances.

4.2.3 War

Past trends in war-making are diverse. The two World Wars of the twentieth century were the deadliest in human history (in terms of total deaths, though the Mongol invasions of the Middle Ages may have killed a greater proportion of the world's population). Yet there has been a downward trend since the Second World War in wartime fatalities. There has also been a downward trend in the total number of inter-state wars over the last few centuries. And some parts of the world – most of the Americas and Europe – have not seen war on their soil in decades. Yet there have still been horrific conflicts in many parts of the world in recent years, where civilian death tolls have often been in the millions: Syria, South Sudan, Yemen, Congo, and more.

One likely reason for the downward trend in fatalities in recent years has been the nuclear deterrent. Countries are naturally wary of attacking another that might respond with nuclear weapons. Yet this benefit comes with the risk that some future war might involve nuclear weapons, and this could be devastating and even apocalyptic. This risk has risen in recent years with the fear that non-state terror groups might gain access to nuclear weapons. They might calculate that it is harder to retaliate against them with nuclear weaponry. States, that is, refrain from employing nuclear weapons out of fear of retaliation, but terror groups are dispersed among other populations. There is always also the chance that one country will gain a technological advantage that either accentuates their first-strike capability or limits retaliation; they might then seize the opportunity to attack. The possibility of some much deadlier future conflict can thus hardly be ignored.

Steps have been taken and could continue to reduce the size of nuclear arsenals. This can reduce the risk of an accidental war where some missile is fired by error and triggers retaliation. However, countries will not eliminate nuclear arsenals as long as fear of retaliation remains an important deterrent. We can only eliminate the risk of nuclear war, then, by achieving a stable world peace. As we saw in chapter 3, this will require acceptance of – and adherence to – a set of international institutions, as well as a high degree of cultural toleration.

Travel is enjoyable in large part because of cultural differences (and more travel by more people might serve to make us see cultural diversity as a good thing). Yet it is useful to recognize that the modern traveller can also see much that is similar in most parts of the world: similar markets, similar goods and services, similar transport infrastructure, similar TV shows, similar medicines, and so on. It remains to be seen whether the many similarities in daily life encourage a greater sense of our common humanity. We might even appreciate that all countries celebrate their histories, anthems, and flags in very similar ways.

We also mentioned democratization in chapter 3, and noted that democratic countries are far less likely to go to war with each other than authoritarian countries. Democratization has likely been another reason that wars have become less common and smaller in scale in recent decades. In Europe, focal point of the deadliest wars of the twentieth century (though we should not forget that tens of

millions died in Asia too), democratic governments forged a lasting peace. But the dramatic expansion of democracy stalled in the earliest twenty-first century. Not only did fewer countries move toward democracy but authoritarian tendencies emerged across many democracies.

The various reforms urged in the preceding chapter to reinvigorate democracy are the best single way to encourage the further spread of democracy. Democracies that set a good example inspire imitation. Democracies that seem unable to grapple with the world's challenges make it too easy for authoritarians to claim that they can do a better job.

There is also much scope for greater honesty in foreign policy. During the Cold War, it was common for countries on both sides, including democracies, to prop up dictators that they liked. Such strategies naturally struck residents of the dictatorships in question as hypocritical, and caused them to doubt the value of democracy. Though the Cold War has ended (but global tensions remain), dictators may still be supported by democracies in order to keep terrorists at bay. We should appreciate that such a strategy makes democratization much harder to achieve. Democracies should stand ready to support democratic movements in authoritarian states. They should make it clear that they wish to see democracy everywhere. They should seek peaceful relationships with authoritarian states, but urge these to democratize. If there are rare cases in which it is thought desirable to aid an authoritarian, the pragmatic reasons for doing so should be made explicit, with apologies to the citizens of the country in question.

BOX 4.3: THE COMPLEXITY OF SUPPORTING DEMOCRACY

There may have been an opportunity to support democracy in the earliest days of the Syrian civil war, but hesitation to do so allowed authoritarians and religious extremists to seize the day. People risked their lives in the name of democracy, and were largely ignored by the outside world. Nobody can deny that this was a complex situation, but it is hard to argue that if a different strategy had been pursued things could have turned out worse than they did. And note that the failure to act in Syria will discourage others from risking their lives for democracy elsewhere.

It must be appreciated, nevertheless, that efforts to install democracy militarily have proved challenging in places like Afghanistan and Iraq. Part of the problem may have been a distrust of the motives of occupying forces. Much of it, though, reflected the reality on the ground of a lack of sense of community, or experience of democracy, or toleration of other groups in the same country. These cannot be created overnight. The difference in Syria is that a group of democrats had gained credibility by standing up to an autocrat. We will never know if they could have gained support across ethnic and religious lines.

It is getting ever harder to do foreign policy in secret. News speeds around the world. And NGOs operate globally that put pressure on governments to behave themselves. It is a good thing that it is harder for governments to act in a way that does not accord with their stated principles. Governments have been slow to respond to this new environment. Democracies are still willing to ignore authoritarian atrocities if they can benefit by selling military weapons to the authoritarian in question. We need to recognize that our foreign policy should reflect our principles. And democracies should be willing to shame other democracies that deviate.

Prudence demands that we try to encourage democracy and respect for international institutions. Sadly, it also demands that we prepare for war. International tensions might be exacerbated by climate change (imagine millions fleeing drought or rising sea levels), another pandemic, economic contraction, or a host of other phenomena. We should not be surprised by war, and will return to the question of war in chapter 5.

4.2.4 Decreased faith in democracy

We mentioned democracy in the preceding section. We spent much time in chapter 3 discussing strategies to restore faith in democracy. It should be stressed here that without some such efforts, confidence in democracy is quite likely to further erode. Distrust feeds on itself for a variety of reasons. For one, all humans tend to incorporate new information into pre-existing conceptions of reality. If we have decided that governments are not acting in our best interests, then any news of imperfections in government services serves to reinforce our opinion, while we ignore examples of government competence. Major crises – like the COVID-19 pandemic – may serve to temporarily restore some faith in government, for it will be hard to ignore any competent acts in such a situation. Yet even there the inevitable misjudgements along the way may stick in memory more.

We have stressed previously that faith in democracy depends in large part on confidence in government programmes. Once voters become convinced that governments are wasteful, they will take every example of waste as further proof of their conviction. They will disdain attempts to create new programmes – or even to reform existing programmes – even if these might in the long run restore some confidence in government. A lack of confidence in government may lead to underfunding (think here of crumbling public infrastructure in many parts of the world), which serves to further decrease confidence in government. Such positive feedback loops can lead to a steady deterioration in confidence in (and quality of) government programmes through time.

Distrust in democratic discourse encourages extreme partisanship and disrespect for the views of others (which not surprisingly often pits those who have lost confidence in government against those who seem to embrace every possible government programme). This too is self-reinforcing, for humans naturally respond

to disrespect with disrespect. The more that people do not attempt to understand others, the more they will vilify them. Democracy simply ceases to function if voters disrespect other voters. There has to be some shared sense of purpose to guide a democracy. If you come to think that a vast chunk of the electorate are moronic or evil, then an authoritarian who shares your enlightened perspective may seem like a good idea.

Extreme partisanship encourages politicians to attack the institutions on which democracy depends. If your opponents are evil then you (and your supporters) can justify filling the courts with biased judges, limiting freedom of the press, and filling the bureaucracy with loyalists. You can even justify efforts to make it hard for your opponents' supporters to vote, draw constituency boundaries that limit their electoral success, and perhaps encourage electoral fraud. Such strategies will of course encourage your opponents to vilify you in turn and believe that they cannot achieve success through democratic means. Democracy has been eviscerated in several countries in recent decades through such strategies.

A downward trend in our shared belief in democracy can easily be reinforced by other trends. Economic downturns can directly encourage doubts about the capabilities of governments. Unemployment can encourage contempt for others who might compete for our jobs or seem to have access to better jobs. Technological innovations that benefit some more than others can also exacerbate tensions. Ditto changes in trade flows. As noted above, failure to address climate change in a timely manner will call democratic governance into question. Indeed, almost any change in the wider world has the potential to inflame partisan tensions once a shared sense of purpose has evaporated. And we live in a world of change.

We might worry particularly about further increases in inequality. At the bottom end, those who see their incomes declining – even just relatively to others – are far more likely to feel that the system is unfair and lash out at others. At the top end, increased incomes to the already rich make the system appear unfair. Moreover, since the rich find it much easier to get their wishes met politically, increased inequality may well in fact serve to make the system less fair. It could well be that democracy is only sustainable if inequality is maintained within bounds that most in society see as fair. Note that perceptions of fairness will depend both on the actual levels of inequality in society and on the ability of the rich to translate economic success into political influence. It may thus be in the collective financial interests of the economically successful to acquiesce in measures that reduce their political influence, for this will reduce the pressure to reduce inequality – but this happy result only holds if in fact the higher incomes are not dependent on the political influence. However, to the extent that the rich are rich because of their political influence, society has a collective opportunity to reduce inequality while enhancing both prosperity and justice – but only if reforms can be achieved that lessen the influence of the rich.

Inequality is particularly challenging when associated with racism. Disadvantaged groups will feel disenfranchised, and others will be tempted to vilify them. Political partisanship can become associated with ethnic divisions. Efforts to tackle

inequality are hampered while the deleterious effects of inequality on democracy are accelerated.

Democracies that have only been around for a couple of decades are most at risk. Citizens may recoil at partisan bickering and glorify an earlier era of authoritarian peace. Democracies that have been around for centuries have built up institutions that will not disappear overnight: courts that can protect the rights of citizens, bureaucracies accustomed to democratic oversight, and most importantly armies trained to respect orders from elected officials that respect the constitution. Yet such institutions are not immutable. For one thing, elected officials can appoint judges, bureaucrats, and generals who are not quite so dedicated to democratic principles. For another, we have argued at many places in this book that institutions only function well when supported by values, and if a society loses faith in democracy, then democratic institutions are imperilled.

One great risk is violence. When citizens disrespect each other, it is all too easy to move from yelling to hitting. Violence is particularly likely in times of stress – and again we live in an age of often stressful change – and especially if we come to think that others are acting unfairly. Yet violence is possible even for the mere sin of disagreeing with things that seem obvious. If I come to identify myself with a set of beliefs, anyone that disagrees with those can easily offend me.

Democracies celebrate their freedoms. Nevertheless, they must maintain peace. Terrorism has proven a great challenge to democracies precisely because it is hard to police terror while respecting freedom (see chapter 5). Civil strife will likewise invite limitations on personal freedom. Yet governmental limitations on freedom may further reduce people's support for democracy. Authoritarianism may prove self-reinforcing, with each step making the next step seem harder to resist. We may find ourselves facing a choice between caving in to increasing degrees of authoritarianism or desperately trying to reinvigorate democracy. We will wish in such a situation that we had set about fixing democracy earlier.

BOX 4.4: THE UNRAVELLING OF THE WEST

Donald Wood's *The Unraveling of the West* (Praeger, 2003) must seem prescient. He worried that rising anti-intellectualism and disrespect for democratic mores was threatening democracy and limiting our collective capacity to grapple with issues such as environmental degradation and inequality.

Wood identified four causes of this malaise. One of these we have devoted much attention to: a decreased belief that reason can govern human affairs, reflecting in turn disrespect of experts and polarized discourse. He also worries that occupational specialization has meant that each of us only understands a small part of how the world works. Third, we feel ourselves ignorant because we face information overload and know that we cannot master all relevant information (we have suggested elsewhere some strategies for improving the

access of citizens to reliable information). Lastly, we have become deferential to authority, and thus willing to accept unquestioningly advice from some leaders.

Wood urges us to reform both our educational system – to teach people how to participate in democratic discourse – and our political system.

Speaking of prescience, I should note that I first drafted the concerns above regarding violence *before* the Black Lives Matter protests of 2020: before a minority used those protests as an excuse for looting, and before armed militias appeared with some regularity on city streets in the United States. Governments faced the tough choice I spoke of, between maintaining order and respecting the right to protest. There are clearly many people willing to employ violence in the pursuit of political ends, and politicians willing to encourage them for their own purposes. I, like many, worried that the United States election of 2020 might be accompanied by mass acts of violence. I am deeply troubled that armed groups showed up at the homes of election officials after that election. I hope that the storming of the US Capitol on January 6, 2021, will serve as a warning that acts of political violence must not be allowed to escalate. Will we look back at 2020 as the beginning of a slide into political violence, or was this just a temporary glitch in democratic proceedings?

4.2.5 Freedom

Freedom House (https://freedomhouse.org/) has reported declines in freedom for over a dozen years, after decades of steady improvement. In many countries that have become democratic only in the last few decades, governments have interfered with elections, hobbled media, and harassed opposition politicians. Freedom House suspects that democracy has often disappointed citizens in those countries, and thus a slide back toward authoritarianism is not opposed as strenuously as it might be. In countries that Freedom House had never considered free, dictators have often dispensed with the pretence of holding elections, since there has been less international pressure to do so. In many countries that have long been democratic, there have been efforts to limit constitutional freedoms, especially of the press, and to limit the independence of the judiciary. Freedom House blames rising inequality, which has fuelled the rise of nationalist parties that show disdain for democratic traditions. Immigrants have been widely blamed for society's problems.

Freedom House stresses that these declines in freedom are small relative to the advances recorded in the last decades of the twentieth century. The world is far more democratic and free than it was in 1970. The question going forward, then, is whether recent trends will continue, or will they turn out to be a blip on the road to freedom. We can recall with some sadness the triumphalism of the 1990s when it seemed that the path to a democratic future was secure.

The saddest backsliding has occurred in those countries that only became democratic in the latter decades of the last century. These countries often had little tradition of legislatures or open debate. Their courts and armies were not accustomed to supporting democracy and freedom. Corruption was often rife, as there were no institutions to prevent it. These countries serve as a reminder that democracy is not easy to institutionalize. The world's most solid democracies often emerged slowly with a gradual expansion of legislative authority.

Those of us with the good fortune to live in established democracies might usefully reflect on the fragility of democracy. Freedoms are hard-won over long periods. It may well be that they are far easier to lose than to gain. Freedom House appreciates that freedom depends critically on public support – both within a country and from other democracies. If people lose faith in democratic institutions, authoritarians will be all too happy to whittle these away. Those of us who have never had the misfortune to live under authoritarian regimes may underestimate the cost of sliding into authoritarianism: Immigrants who have fled such regimes might usefully tell us to smarten up. And for those who are confident that they are totally in sync with some authority figure, and thus need not fear authority, they might usefully learn an important lesson of history: that all authoritarian leaders in consolidating power cast away (imprison or kill) supporters who they either accuse of disloyalty or find to be inconvenient.

Freedom House blames recent trends on declining international advocacy of democracy, rising inequality, and the scapegoating of refugees. We have proposed strategies to deal with each of these in earlier chapters. We have also suggested strategies for engaging with autocrats. Much of the course of freedom over the next decades will depend on how successfully democracies engage with autocrats: We want peace but also democratization.

4.2.6 Economic trends

Economic forecasters generally project recent trends into the future. Given the heaps of data available, this is one area in which quantitative predictions are feasible, and considerable effort is devoted to refining these techniques. Firms and governments rely on such predictions in making medium-term decisions. Yet it remains a challenge to predict turning points. If economic growth is continuing, we can do a decent job of predicting whether it will be a little higher or lower next year. But is there a recession coming? That is often much harder to predict.

Economic forecasts become less reliable the farther into the future we attempt to peer. We can thus spare the reader of this book – in which we are in general trying to look decades at least into the future – from having to cope with estimating equations and numerical estimates. Rather we can speculate in words on how the next decades are likely to pan out.

Economic growth has been the typical experience in developed countries for decades or centuries, and has become almost as common in developing countries. Yet economic growth is irregular everywhere, interrupted by recessions in

which economic output declines for many months or perhaps years. In recessions, unemployment rates rise, sometimes dramatically. Some economists have detected in the past the alternation of decades-long periods in which recessions are very mild (the 1920s and 1950–60s and 2010s) with periods in which recessions are severe and overall growth stagnant or negative (the 1930s and 1970s and …). We have not seen enough of these periods to be sure, and the theoretical reasons for them are unclear (though technology may be the main culprit; see below). Nevertheless, a reasonable prediction for the next decades would be growth in most years, recessions in some, and perhaps some lengthy period of sluggish growth with serious recessions. (We discount the likelihood of another Great Depression in the next chapter.)

How fast will growth be? One reasonable prediction is that growth will occur a bit higher in poor countries than in rich countries. This has perhaps been observed in the recent past (depending on what group of countries you look at and whether you give extra weight to populous countries; the dramatic growth of populous China alone in recent decades proves the hypothesis if China is heavily weighted in the calculations). And there are at least two good theoretical reasons for it: Poor countries can borrow advanced technology from rich countries, and capital should usually flow from countries with lots of it to countries with less. This prediction must come with important caveats. In particular, it depends on trade flows: Many poor countries have suffered grievously in recent years as the prices of raw-material exports have plummeted. Also, poor countries need a basic infrastructure and set of institutions in order to successfully absorb either capital or technology.

Average global growth rates will depend a lot on technological innovation. Will new goods and services be developed that will spur investment and consumption? Will new technologies allow us to produce goods and services at a lower cost, facilitating increases in per capita incomes? The answer is surely positive on both counts. Yet some pundits worry that the rate of technological innovation may be about to tail off, because most of the good ideas have already been discovered. They note that the dramatic increase in expenditure on research and development in the last half-century or so (by a factor of ten in the United States) has not been matched by a similarly dramatic increase in the rate of innovation (though this is hard to measure) or economic growth. Yet we should appreciate that such predictions have been common in the last centuries: We occasionally marvel so much at the latest innovations that we wonder how these could be topped. Looking forward, there seem to be many areas with innovative potential: biotechnology (which has been the next big thing for decades but may finally flourish with advances in genetic sequencing), artificial intelligence, the internet of things, and more.

Will the two types of innovation mentioned in the preceding paragraph – new goods and services on the one hand, and new processes on the other – occur at the same rate? If developments in labour-saving technology outstrip developments in new goods and services, we may see spikes in unemployment as workers are laid off and have nowhere to go. This was arguably the case in the 1930s: The interwar period was the scene of rapid adoption of three of the greatest labour-saving innovations of all time, the assembly line, electrification, and continuous

processing (for making homogeneous products continuously rather than one batch at a time). But there were very few new goods or services developed in the decade after 1925. In the 1970s too, advances in automation occurred while there was little new product innovation. Looking ahead, then, governments might be advised to stimulate innovation in general, and the development of new goods and services in particular (though recall that the outcome of research is often unpredictable).

We discussed various policies for enhancing economic prosperity in chapter 3. Our predictions for future growth rates must depend on how likely we think it is that governments will pursue enlightened policies. We might in particular worry here about the future path of international trade. Most economists think that the Great Depression was worsened significantly by trade restrictions. And trade expansion seems to have been a motor of economic growth in recent decades, especially in poor countries. Both nationalism and fear of pandemics may lead to contractions in trade flows in the future.

International trade has been liberalized dramatically in the postwar decades. Several rounds of negotiations managed by what is now called the World Trade Organization led to sharp drops in tariffs. These political moves coincided with the development of the humble container, which dramatically lowered the costs of moving goods internationally, and advances in telecommunications and air travel that lowered the costs of negotiating business deals. Further advances in trade negotiations will be difficult. In part, this is because of public suspicion of complex deals negotiated in private, and fears that international trade enhances the power of corporations over workers as these can now move production globally. This is yet another case where greater governmental transparency could enhance societal outcomes – as could labour and consumer representation on trade negotiating teams. There are also concerns about the environmental impact of trade, due both to the costs of moving goods and the possibility that goods production might become concentrated in countries with lax environmental standards. The first might be addressed technologically, or through policies that charge both producers and transporters appropriately for their environmental side effects. The second can best be addressed by international agreement on environmental policy. Public suspicion of trade negotiations also reflects that these increasingly engage with trade in services rather than goods, and this requires efforts to harmonize national regulations of services (many countries, for example, try to encourage national production of music and theatre and television). This is yet another case where public policy needs to strive for a balance: in this case between the advantages of trade and the value attached to local culture. As always, we should seek a balance that reflects the public will, a balance that is particularly hard to achieve in secretive negotiations.

Our growth predictions might prove horribly wrong. The COVID-19 pandemic provides an obvious example of how economies can be disrupted. Climate change will undoubtedly have economic impacts. Some of these will be direct as droughts or floods interfere with economic activity. Poor countries, with a heavier reliance on agriculture, have most to fear here. Some of the effects of climate change will be indirect as governments belatedly introduce policies to combat climate change. We

have argued in preceding chapters that the trade-off between economic and environmental goals need not be severe. But the trade-off becomes harder the longer that the world waits to act. Countries seeking rapid decreases in emissions may act in ways that cause economic dislocation.

Resource shortages may also disrupt economies. There have been predictions for decades that the globe would soon run out of key resources: metals or oil or rare earths. These predictions have so far not come to pass. Indeed the real price (that is, subtracting the effects of inflation) of most resources has fallen most of the time (though there have been occasional price spikes). For the most part, we have discovered new deposits faster than we have used up old. On the one hand, it is true that there is a finite amount of any particular resource on our planet. On the other, it is likewise true that we have barely scratched the surface in our efforts to discover resource deposits (though it becomes more expensive as we dig deeper). At some point we will run out of resources that we can find at a reasonable cost on our planet, but it is hard to know whether we are decades or centuries away from running out of particular resources. It is also very hard to predict whether mining for resources beyond our planet will ever prove cost-effective. If and when we do run out of resources, we will curse ourselves if we are not prepared. It thus seems prudent to encourage both recycling and a search for substitutes. We should appreciate that people may reasonably differ in both their predictions and their tolerance for risk, and thus seek societal consensus on how strongly to encourage these things.

Particular localities may have economic experiences quite different from the global average. One characteristic of modern economic growth is change: It is not that the output of every firm and industry rises inexorably by a couple of per cent a year, but that some firms and sectors grow rapidly while others decline or disappear. Entrepreneurs and workers can both suffer from being in the wrong place at the wrong time. It is tempting, then, to interfere with processes of economic growth in order to maintain economic security. We have suggested in chapter 3 that it is generally better to enjoy the benefits of economic prosperity while creating a social safety net to address uncertainty. This should include some sort of support for retraining and/or relocating workers in a declining firm or industry.

We should make note of one recent trend in labour markets: the rise of the "gig" economy, where workers are hired temporarily to perform one particular task. Its future depends a lot on how government regulators respond. One big question here is whether "gig" workers should receive benefits like regular employees. This is tied to a larger question about the incomes that "gig" workers earn. We should appreciate that both employers and workers can potentially benefit from gig work, for they both gain flexibility: Employers gain the flexibility to hire just for necessary tasks, and workers gain the flexibility to only perform tasks they like or are good at and at times they prefer. These advantages should not be sacrificed lightly. The entire economy benefits to the extent that workers otherwise would be paid for long periods in which there was little for them to do. Our arguments elsewhere in favour of a basic income might allow society to have the benefits of a gig economy

without forcing workers into penury. It may be that gig-specific protections are also called for.

BOX 4.5: MEASUREMENT AGAIN

We have worried earlier about the way we measure economic prosperity. We can note here that there are also challenges in the way we measure unemployment rates. Governments regularly perform surveys, asking people if they are working or looking for work. Note that respondents only count as "unemployed" if they are not working but are looking for work. Economists have long worried that some people just give up looking – they are called "discouraged workers" – and thus that we routinely underestimate the true unemployment rate. Another problem, which is becoming more important, is that part-time workers are counted as employed *even if they would prefer full-time work.* We have lauded people above who might pursue part-time employment on purpose, and argued that such a quest should be facilitated. Yet we can also worry about people pushed into part-time employment involuntarily. We need, yet again, a more subtle type of measurement, which would capture those who are involuntarily *underemployed*.

It is harder to predict whether another recent "trend" will last: low interest rates. Interest rates were at historically low levels before the COVID-19 pandemic and were cut further in all countries that still had room to cut. Positive interest rates make some economic sense: People would generally prefer to have something today rather than a year from now, and thus must be paid interest to save for the future. Negative interest rates discourage saving. They thus disrupt the entire financial system on which economic prosperity depends. I have heard one economist compare the effect on the economy of a move from one per cent to minus one per cent in interest rates to the effect on water of moving from one degree above freezing to one degree below freezing. And near-zero or negative interest rates weaken the key weapon that central banks have for decades used to reduce unemployment: lowering interest rates to stimulate investment. Central banks have turned to a less familiar tactic of buying government bonds ("quantitative easing"), which may encourage some spending from those who now have cash rather than a bond, but we are much less familiar with the effectiveness of this strategy. Nor is it entirely clear why interest rates have remained so low for so long without encouraging inflation: Some suggest that technology may have been fortuitously lowering costs of production in recent years. We should recognize a risk that central banks and financial systems may both be less robust in future because of historically low interest rates. This makes policies around government spending that much more important. If a central bank cannot move to limit a spike in unemployment, we will

benefit even more from programmes such as a basic income that can act to limit the decline in consumption expenditure.

Though we have predicted that growth will likely continue, we should nevertheless prepare for the alternative. Many futurists indeed predict a no-growth future. What do we do if resource constraints or climate change or the drying up of technological innovation force incomes to stagnate? There is already considerable angst that the next generation may not have a life that is as good as or better than its predecessors. We have come to expect that economic prosperity *should* expand with each generation. Governments are judged by whether they produce economic growth. Investors seek companies with particularly auspicious growth prospects. So we would have to change our entire set of expectations to cope with economic stagnation. We can take some solace from the fact that through most of human history humans did not expect economic growth, for this occurred irregularly and slowly. Yet it will nevertheless not be easy for us to change our mindset. Economic stagnation will likely increase tensions around economic inequality: If growth will not meet our dreams, then we can only have more by taking from others. We might then see reductions in inequality, for much of the justification for inequality is that those with high incomes are driving growth. We might also see improvements in job security if economies cease to change so much. Yet possibilities for social strife remain. If we cannot all see increases in our incomes, social peace may require us to collectively downplay income as a source of human happiness. This may be no bad thing to pursue, even in times of economic growth. Efforts to decrease inequality now, and to encourage alternative sources of meaning in life, are the best possible preparation.

With respect to inequality we should appreciate that there is some natural tendency for "the rich to get richer." They have money to invest, and earnings from investment can be passed down (and grow) through generations. Income inequality may then increase because the rich become richer while others continue to rely primarily on income from work rather than investment. Systems theorists worry about this sort of positive feedback loop in which a particular process seems to naturally grow through time. We discussed in chapter 3.2.4 some strategies for reducing inequality, and can note here that we may have to struggle just to prevent worsening inequality. We have seen that inequality is a threat to both economic prosperity and political stability.

4.2.7 Advances in science and technology

It is in general foolhardy to predict the course of technological innovation. Decades ago, it was common to think that we would be flying around with jetpacks by now. Nobody imagined that we would be constantly sharing pictures on our cell phones. (Note that the jetpack prediction may have simply been an extrapolation of trends in increasing the ease and speed of transport, while the cell phone selfie required the combination of multiple technologies: We find it hardest to predict novel interactions.) The safest bet is that the future will be as full of surprises as the past.

It is a little bit safer to extrapolate a couple of changes that are already underway. The first of these is artificial intelligence. We can first wish that a different title had been chosen for this technology. Computers are not intelligent in the same way humans are, but they can do a better job of recognizing patterns in huge amounts of data. If you feed a computer observations of millions of games of chess or Go, it can identify the move most likely to lead to victory in any situation. It follows a fairly stupid decision-making process, but wins because it scans more data than a human ever could.

One fear these days is that a host of middle-management jobs are similar to playing chess in the sense that they involve making decisions based on large amounts of data. If an organization has an ongoing goal such as increasing sales, a computer may be able to give good advice on what strategies worked in similar situations in the past to achieve that goal. Computers will struggle, at least for the foreseeable future, to give good advice on achieving novel goals – though they may spot hidden patterns in data that a human can then make novel use of. It could then be that there will be substantial job losses in the service sector over the next decades. (Will computers do a better job than loan officers in identifying deceit, or will they develop biases that are hard to identify?) Many of these are well-paid jobs at present. Technology has mostly replaced manual labour in the past. There may even be effects on the professions: Computers may be able to make medical diagnoses too if fed data on a person's symptoms. Some symptoms, such as dermatological complaints, may prove to be recognizable by a computer from a good photograph. AI might perform much of the work of pharmacists and auditors, and might replace baseball umpires. At the moment, we should be cautiously aware of these possibilities: AI is still new enough that it is hard to predict how successfully it can overcome particular challenges.

It should be appreciated that computers have to be carefully programmed to perform particular tasks. Computers did not one day decide that they wanted to play chess, and figure out how to get good at it. There are already, then, many jobs for computer scientists and engineers in the field of AI. These jobs will almost certainly expand in number over the next decades. We might worry, nevertheless, that one computer scientist can program a computer to replace numerous employees. We can note again that artificial intelligence may often identify patterns that humans then have to interpret and act upon, and thus it can have employment-creating as well as employment-reducing effects. Moreover, it will almost certainly be the case that artificial intelligence will not just perform existing tasks but will be designed to do things that are impossible now. If we feed a computer a host of healthcare, child welfare, and justice system data, can we predict which children are at risk and remove them from dangerous situations before some disaster happens? There are, to be sure, important privacy issues to be navigated, but artificial intelligence may allow us to do many useful things that we have not yet begun to imagine. If we are truly worried about the employment effect of artificial intelligence, we might wish to encourage the development of new services.

Most of the analysis of the effects of artificial intelligence focuses on the private sector. It could well be, though, that artificial intelligence streamlines many

government services. The government has many managers whose task is to analyse large masses of data. Moreover, governments struggle to deliver the right services to the right people and places: This is largely a data management problem. We might, then, improve the quality while lowering the cost of some existing programmes. We will also, as noted in the preceding paragraph, likely identify new tasks for governments to perform.

Linked to appropriate sensors, artificial intelligence can also replace manual workers. There will almost certainly be a dramatic reduction in the number of long-distance truck drivers as a result, for computers can exceed the safety record of human drivers. Computers can also drive longer hours and even achieve modest savings in fuel. If we can solve the environmental issues around trucking, we may see an expansion in the range of goods transported. Simultaneously, driverless cars and buses might expand human freedom dramatically. Job losses in truck driving might be more than compensated by increased opportunities in trade and vacation services. Or not: We should not too casually dismiss the possibility that it may be hard to generate new jobs for those replaced by technology.

In the very long run we can hope that computers and robots take on a range of fairly repetitive tasks. For the foreseeable future, we need not worry that humans will not be left with tasks that require leadership, people skills, and creativity. There may be transition problems in getting to this bright future. To avoid these, we can try to guide the technology toward job creation, and pursue strategies that provide for both employment flexibility and economic security.

Some futurists worry about a more distant future where computers are able to do *everything* better than humans. It should be stressed that present AI technologies do not mimic human intelligence and thus do not run the risk of making humans obsolete. We may indeed have a collective future in which humans are freed from mundane tasks in order to focus on various types of creativity. But it is worth reflecting on what makes humans special if machines come to encroach on many activities that we value.

Others worry that computers given broad instructions may pursue strategies that threaten human survival. Few worry about the sort of chaos unleashed in the *Terminator* movies (though the popularity of such movies may reflect a human fear of creating machines that are more powerful than us). But a computer programmed with some environmental goals might decide to erase certain human activities. The answer here seems to involve giving careful instructions and requiring computers to check with humans before acting.

In our daily lives, AI algorithms will likely come to play a bigger role: guiding our career choices, suggesting what movies we might like, and so on. (Will we become better able to ignore advertising, or will advertisers become better able to appeal to our subconscious yearnings?) This advice can be very beneficial, but again we may lose some sense of self-efficacy if we let machines make our decisions for us.

A second technology worth looking at is genetic engineering. We now have the capability to insert genes into organisms. Humans have bred plants and animals for thousands of years through a time-consuming process of physically combining

different plants or animals. It is now feasible to take a gene from one organism and implant it in another. Debates rage about the use of this technology on plants or animals. These will seem mild in comparison to the coming debate over genetically engineering humans. The good news here is that scientists are slowly identifying the genes responsible for a large number of genetic diseases that each affect small numbers of people. There are promising therapies emerging for some of these diseases. It may one day soon be possible to edit the offending gene and cure the disease. Few will likely object to "playing god" in a way that allows afflicted people to live a normal life.

What, though, about deliberately inserting genes that would make humans smarter or stronger or more honest? (Or inserting electronic sensors into our brains that enhance our abilities to detect sounds or emotions or that connect our brains to computers?) Such initiatives might have good consequences: We could more readily create a better world if we were smarter, stronger, and more honest. But such initiatives go against our very sense of what it means to be human, and perhaps our respect for human life. There is also the risk that we might unwittingly err and create beings that are not really "human" in some important way. The history of human efforts to breed better humans – the eugenics movement of the early twentieth century, and its abusive application by Nazi Germany in the 1930s – is horrific.

This is an ethical issue that deserves lengthy and broad-based debate. One problem with eugenics was that it invited a massive abuse of power. We should be on guard in particular against only an elite being able to create super-babies. Yet we may not have time for lengthy debate. As the technology develops, autocrats may be tempted to employ it even while democrats debate it. Reflect on this: A future where autocrats breed super-people is worth avoiding, but there may be no easy way to do so.

What if we are able to make humans immortal? What if we can only afford for a while to make some humans immortal?

Some futurists are excited by the prospect of "democratizing" technological innovation (including some kinds of AI though not perhaps genetic engineering). Open-source software has surprised many: Many innovators have proved willing to donate their efforts to the world, and software developers have built on each other's work to produce a range of freely available programs. 3D printers allow innovators to produce complex pieces from plans uploaded to the internet – and then modify those plans to serve particular needs. We still live in a world where much innovation occurs in corporate or government research labs. But there is a large and perhaps growing scope for individuals or small groups to produce socially valuable technologies. We might encourage such efforts with our educational policies and perhaps with some financial support.

4.2.8 Decreased sense of community; backlash against diversity

We have suggested before that social strife can be self-reinforcing. Once we demonize others, then every move they make serves to reinforce our negative stereotype. It is all too easy to ignore any good things they might do and focus on the bad. If we are

decided that they are hopelessly misguided, we stop listening, and lose our capacity to understand and seek common ground. If, as we have feared above, we move from yelling to hitting, our capacity for understanding can be erased.

Increasing inequality is less likely to unite the masses against the rich than to turn the poorer members of society against each other – unless they can be convinced of strategies (such as those outlined in chapter 3) for addressing inequality that do not imperil prosperity. Alternatively, any social movement that gathers people from across political or cultural divide in pursuit of any of the goals outlined in chapter 2 can potentially do much to restore a sense of community.

A war against a reviled foe can restore some sense of community. The COVID-19 pandemic did some good in this respect, at least in countries where political leaders roughly agreed and clearly followed the advice of health experts. This is, of course, a costly way to achieve community.

A declining sense of community will likely unleash a backlash against respect for diversity. If life seems a battle between "us" and "them," then it is only natural to urge everyone to behave more like "us." A decreased respect for diversity can in turn encourage discrimination of various kinds, an attractive strategy if life seems to be a battle for scarce jobs. Discrimination will naturally offend those who are discriminated against, and further detract from a shared sense of community.

There is good reason, then, to fear that sense of community will decline in many countries. Concerted efforts at collaboration can reverse this trend, especially if focused on decreasing inequality or transcending negative stereotypes.

4.2.9 Attitudes toward discourse and evaluation of evidence

Will the COVID-19 pandemic restore some confidence in expert advice? Or will many soon forget the risks we faced and doubt that the advice to self-isolate and socially distance was really necessary after all? It is too early to know for sure.

It is unlikely that COVID-19 alone will halt a worrying trend away from believing in the value of careful evaluation of argument and evidence. It is already all too common for political leaders to vilify those with the temerity to disagree with them, and for political pundits to ignore clear evidence. Many citizens absorb information from highly biased sources and seem not to question what they are told. Jointly believing in untruths can be a powerful marker – and perhaps source – of group identity. There have been biased sources of information for centuries, but social media and the fragmentation of broadcast media make it much easier for people to find only congenial opinions. These trends in turn reflect and reinforce trends discussed elsewhere of decreased respect and decreased sense of community. They are encouraged by increases in inequality, and decreased faith in government policy and democratic decision-making.

The French philosopher Michel Foucault spent much of his career warning of biases in both scholarly analysis and political discourse. Yet he warned us that if we lose faith in our ability to engage in constructive discourse that seeks to carefully evaluate argument and evidence, then we have no answer to authoritarianism. If

one argument is as good as another, then we might as well have a ruler who gets things done: The ruler's views are as good as anybody's.

We have a choice to make. Present trends pose an existential threat to democracy. It is not clear how long democracy's death throes might last. It is hard to predict when we might reach a point of no return. But it is clear that democracy will not survive if we give up on careful dialogue and evaluation of policy proposals. It should also be clear that it will be easier to reverse this trend if we act early rather than late. We have suggested in chapter 3 strategies both for enhancing the institutions of democracy and for reinvigorating the values on which democracy depends. These strategies are mutually reinforcing and thus best pursued in concert.

4.2.10 Happiness and sense of purpose

We have noted above that surveys show little if any sign of increased happiness in rich countries in recent decades. Rising incomes and a wave of new gadgets have not made people much happier. It appears that the pleasure we get from most purchases is transitory. It is thus reasonable to posit that humans will not become appreciably happier in future decades either. We should confess that we have no direct way of measuring happiness by scanning people's brains and so must rely on the imperfect method of asking people how happy they are. Since there is no objective measure of happiness, people likely compare themselves to others. It is possible, then, that everyone is getting happier but we do not realize it because we compare ourselves to the ever-happier people around us. Yet it seems likely that overall levels of happiness are indeed rising sluggishly if at all.

If individuals take earning money and buying stuff as their main goal in life, and compare their success to those around them, then we may be doomed to a future of stagnant happiness. Average incomes may increase, but nobody really feels better off. The answer is for humans to recognize that there are multiple sources of meaning in life, as we outlined in chapter 2. While competition and individualism serve us well in the economic realm, other sources of meaning depend instead on collaboration. If we can enhance our sense of community, we can make everyone a bit happier as a result. Surveys do indeed suggest that a sense of community (and especially volunteering in our community) does make people happier.

The trick, then, is for people to see economic prosperity as not entirely a goal in itself but as a means to other goals. We have greater leisure time and greater spending power than our great-grandparents could have dreamed of. We can devote these to raising children, building community, helping others, communing with nature, innovating, and engaging in artistic practices. We will be best able to find the right balance for ourselves among diverse goals in a society that values freedom and respects diversity. We will be happier if we evaluate our happiness in terms of these diverse and attainable goals.

We need to change the way we interact. It is no surprise that one of the first questions we ask a stranger is "what do you do?" which always means what is your

job, or what are you studying. The world would be a better place if we more readily engaged questions about their interactions with nature, or art, or which groups they were attached to. We need to appreciate the multifaceted uniqueness of each individual. We will all be happier as a result.

Some researchers have tried to track people's happiness through time. They get the not-surprising result that people are happier during some activities than others. People tend to dislike commuting, and so reducing commuting time might make people happier. Ditto housework. Interactions with friends and family often produce the greatest happiness. Childcare is ambiguous, producing moments of drudgery and moments of wonder. Is it possible to have the latter without (so much of) the former? Worktime is also mixed: Can we increase the rewarding parts of jobs while decreasing routine, office politics, and unnecessary meetings?

Reflection on the meaning of life – both by individuals and in public discourse – becomes increasingly important in a world of great change. In a fairly static world, as most human generations have faced, individuals can absorb lessons about meaning subconsciously as they grow up. Over time, communities develop a set of practices that bring satisfaction to community members. In a world of rapid change, we no longer have the luxury of developing and learning about meaning so gradually. The one thing that we can be most confident of is that our children will inhabit a world that is different in many ways from our own. They cannot just absorb our sense of meaning even if we have developed this clearly. Change can be exciting, and can provide us with wonderful opportunities, but change is necessarily disorienting. We must adapt to rapid change, and this requires conscious reflection. Happily, self-awareness is also identified in surveys as an important source of happiness.

Happiness levels will likely fall due to the pandemic – though many of those who have kept their jobs have found that they quite like working from home. Happiness can fall dramatically in future in the event of war or civil strife (or many of the negative surprises such as natural disasters to be addressed in the next chapter). Those who are unsatisfied with the present state of democracy will look back on the contemporary state of affairs sentimentally should it give way to violence and authoritarianism.

In sum, happiness is mostly likely to stagnate going forward, but could drop sharply in response to other negative trends or shocks. Yet happiness can potentially rise if we are able to work together toward shared goals. Happiness can also increase if we spend less time in unpleasurable activities. And individual happiness can increase if people engage in more reflection about their goals in life.

BOX 4.6: ANOTHER OPPORTUNITY FOR REFLECTION

I have attempted in this chapter to identify key trends across each of the categories of phenomena identified in chapter 1, and identify how these trends will interact with other phenomena. I have not, of necessity, surveyed every

single change going on in the world. The reader is invited to reflect at this point on what I may have missed, both in terms of trends and interactions. They might in particular reflect on some technologies that I have only touched on in this book: robots, the internet of things, social media, autonomous vehicles, new manufacturing materials, and 3D printing among them. Or they might stress trends in education itself: Will COVID-19 lead to a permanent change in the way education is provided? They are then invited to reflect on how important such omissions might be, and how they might interact with the trends surveyed above. Instructors may well detect an opportunity for an assignment or group project here.

We suggested a "backcasting wheel" exercise in chapter 3. This exercise reverses a long-standing practice in Future Studies of developing "future wheels." In a future wheel, one first identifies an important trend. Then one identifies (in a surrounding circle) the key effects of that trend. Then one examines (in the next circle) the implications of those effects. Students can usefully perform a future wheel exercise for any of the trends discussed in this chapter, or any other trend they wish to examine. This can be done individually or in groups.

Future wheels can be combined. One key lesson of this book, after all, is that we need to stress the interactions among trends (or strategies or goals). Though the diagram gets a fair bit messier, it is possible to combine two or three future wheels, exploring the interactions among their effects. One possibility here is that students first individually (or maybe in a group of two) develop a future wheel, and then collaborate with another student (or small group) that has developed a future wheel around a different trend to identify interactions.

4.3 Plausible futures

What do you get if you mix climate change, increased inequality, and decreased faith in democracy? Each of these can reinforce the others. Dysfunctional democracies will fail to address either climate change or inequality, and this will further discredit democratic governance. The rich may prove better able to withstand climate change (or not; recall that income inequality has sometimes fallen dramatically during crises); some of the poorest may be pushed into extreme poverty or worse. Social strife, widespread hunger, and a lurch toward authoritarianism are all plausible outcomes. The progress in recent decades in achieving respect for diversity will surely collapse in such an environment. And, yes, war may seem tempting to authoritarian leaders.

We might devote particular attention to the possibility of decreased food production as a result of climate change. When food security is threatened, people tend

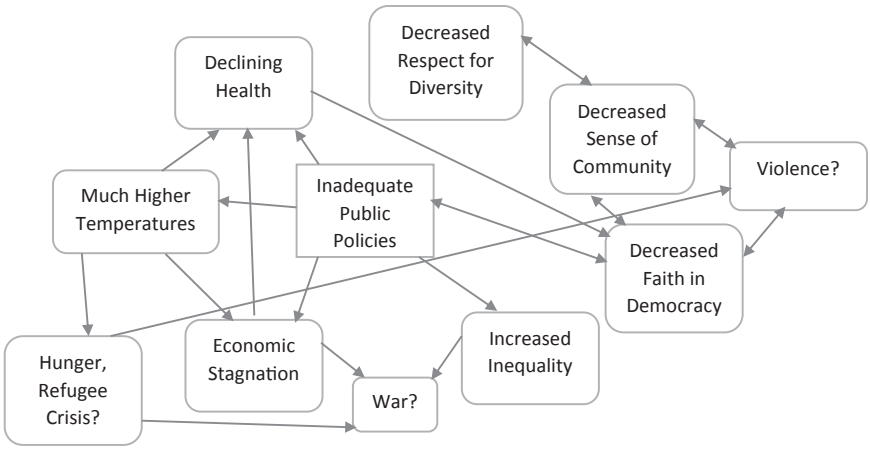

FIGURE 4.1 A dystopian future.

to riot. The ability of governments to maintain order depends on whether people trust (or fear) them. Given a choice between security and freedom, most people will opt for security. Those with food will take steps to protect it, in the absence of trustworthy mechanisms for sharing. In the early days of the COVID-19 pandemic, store shelves were stripped clean of toilet paper by worried citizens. What sort of actions might be anticipated in a time of real shortage?

We should be careful of focusing entirely on the worst case scenario, where all trends are bad and reinforce each other. It is unlikely that everything will turn out as badly as in Figure 4.1. There are many other plausible scenarios: Climate change might force us finally to work together and in so doing restore some faith in collective decision-making. Any success we have in improving decision-making processes may help us to collectively address negative trends such as climate change and increased inequality.

Figure 4.1 highlights the role that public policy may play in determining our future. This is an important lesson: We have the capability of changing ugly plausible futures toward desirable futures. Still, there are other possible sources of more benign futures. Most obviously, there may be technological innovations that solve or at least alleviate the climate challenge. Other innovations may enhance prosperity (some may do both). There may be changes in values or attitudes driven by social activists. We have in this (and the preceding) chapter suggested a variety of strategies for mitigating undesirable negative trends and enhancing desirable trends. The point to stress here is that undesirable trends can be mutually reinforcing *and thus any societal effort to reverse one undesirable trend will have a further indirect benefit in not reinforcing other undesirable trends.*

From the perspective of world history, all human civilizations have eventually disappeared (at least if we define "civilization" and "disappear" in particular ways). It was probably hard to imagine any of these collapses far in advance: At

the height of the Roman Empire who could have thought that it would eventually fall apart? It could well be that liberal democracy will prove to have greater staying power than all previous forms of economic or political organization. Or not. But historians often observe that complacency is a characteristic of societies in decline. Those in positions of power or influence do not imagine that their situation is endangered and do not take steps to stabilize the situation. This is not, we should stress, just a case of individual myopia, but of systemic myopia. Societal decline in history has often been encouraged by economic elites managing to extract ever-higher proportions of societal incomes, and using their influence to limit governmental authority. No single person can arrest such a process once it is well underway.

BOX 4.7: HISTORICAL ERAS

Both historians and futurists speak a lot about "historical eras." They feel that humanity transitions from era to era, and that each era has its own internal logic and emergent properties. They thus imagine that there are key turning points in history where one era gives way to another.

There is some logic to this line of reasoning. We have mentioned before that systems of interaction can have emergent properties. It is thus quite possible that the interaction of one set of economic, political, cultural, technological, and other phenomena produces some overall *zeitgeist* – an overall mood of the times – that is eventually replaced by changes in economic, political, and other phenomena. We should thus be cognizant of the very real possibility that the various trends surveyed above may interact in ways that we cannot foresee, instantiating a new *zeitgeist*.

Yet we must beware of the dangers of oversimplification in this idea of historical eras. In writing *Making Sense of World History*, I often cringed at the efforts of other historians to define the essence of particular eras and demarcate precise turning points between eras. Historical eras (think "classical period") are better viewed as a shorthand that captures at best some key features of a particular time and place. Yet a world historian must always appreciate that there is much change within eras, and also much diversity in experience across places during any era. If the idea of eras risks oversimplifying the past, then the risk is even greater as we turn toward a future that will undoubtedly witness a more dramatic rate of change than the distant past.

5

COPING WITH SURPRISES

We can be sure that the world will *not* unfold entirely as predicted in the preceding chapter. Rather, we can expect that there will be "surprises" (often called "wild cards" in the Future Studies literature). Many futurists argue that such surprises are collectively more important than the trends that we engaged in the preceding chapter: They see a world of frequent shocks in which those trends reflect merely our limited capabilities at responding to shocks. Some suggest that humans have a psychological bias toward thinking that we understand our world, and thus we collectively devote great effort to explaining occurrences after the fact that we in no way saw coming. Having just written a world history text, I naturally think that both history and future are more comprehensible than they do, but join them in appreciating the importance of grappling with surprises. The task of predicting surprises may seem impossible – they would hardly be surprises if we saw them coming. Yet in practice, we will often find ourselves after a surprise musing that "We should have seen that coming." I do not think that this is entirely because we are guided psychologically to impose a false order on a random universe.

The COVID-19 pandemic that began in 2019 provides a perfect example of a "surprise" that could have been foreseen to some extent, and where the world would have benefited if steps had been taken in advance to deal with it. While the precise virus was unpredictable (though it bears a family resemblance to some earlier epidemic viruses), the world had experienced several epidemics in recent years: Ebola, SARS, MERS, and others. Some of these were deadlier than COVID-19 and others were more contagious; COVID-19 was distinguished by a more unfortunate combination of contagion and mortality, and thus killed more people than these earlier epidemics. It had long been recognized that such a combination of contagion and lethality was possible, though it was of course difficult to attach a precise probability to such an outcome. Why, then, did health providers around the world suffer from a shortage of protective masks and ventilators in the early months

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of the pandemic? Surely, a minimal degree of prudence would have stockpiled masks for such an eventuality? It is of course always easy to criticize policy in hindsight, but this seems a dangerous lack of foresight. We had long ago recognized the possibility of large pandemics. Stockpiling masks is a very inexpensive precaution to have taken. Even having more ventilators than is needed on a daily basis would seem a relatively inexpensive precaution.

It is not hard to identify deeper reasons for unpreparedness. Healthcare systems face budget constraints, and will always be tempted to devote their limited resources to taking care of today's pressing problems rather than preparing for tomorrow. Politicians (and authoritarian leaders) face few rewards for prudence and will have a natural bias toward spending money in ways that are visible today. There seems scope here for some sort of governmental body that would warn of possible surprises and advocate for precautions to be taken in advance. This body needs to be more influential than the many government agencies that may already warn of future dangers. Such a body need not be hugely expensive: Indeed, it might largely collect and evaluate concerns forwarded from other government departments and non-governmental agencies. It will soon pay for itself if it can encourage governments (and others) to prepare successfully for a surprise.

Behind the institutional reasons for unpreparedness, we should recognize a psychological predilection. We have evolved as humans to respond emotionally to immediate threats, but have a limited desire to prepare for distant threats. This predilection is displayed by the many individuals with healthy incomes who nevertheless fail to save for a rainy day and find themselves unprepared for illness or job loss. It is displayed socially by collectively ignoring long-standing warnings by scientists about both pandemics and climate change. We must try to structure our institutions to overcome a natural human tendency to not plan for the distant future.

Preparing for the future will be particularly difficult in an environment in which both governments and experts are widely distrusted. Again, the COVID-19 pandemic is instructive: While politicians received mixed scores from their citizens, public health officials were widely (though far from universally) lauded for their efforts. Governments might be encouraged to devote some small share of their budgets to preparing for surprises, and then the debate could focus on which surprises to devote the most resources to.

There is an oft-heard saying: "Never let a good crisis go to waste." For the project of this book – guiding the world toward desirable futures – there is a crucial further advantage to being prepared for surprises. We can then potentially introduce policies to address a surprise that also serve longer-term goals. As the COVID-19 pandemic led to job losses across many sectors, there were calls in many countries for the introduction of a basic income. These calls were only possible because the idea of a basic income had been percolating in many societies for many decades. Yet these calls gained limited traction in most countries because there have been few detailed experiments that could inform estimates of the costs and benefits of a basic income.

The chances of introducing many of our strategies may be much higher during and right after a surprise than at any other time. We are well aware that innocent people suffered from a surprise such as COVID-19 – and perhaps even appreciate that it might have been us – and are thus more willing to address inequality, injustice, and insecurity. Yet we should also appreciate that surprises present an opportunity for backsliding. As we have noted previously, people who are afraid are more tempted to wink at injustice and support authoritarianism, and surprises like COVID-19 can scare people. Moreover, powerful people may seize upon surprises to increase inequality: While much of the relief funds provided during COVID-19 lockdowns went to the poorest (and temporarily reduced poverty rates in many countries), some also went to aid wealthy individuals and corporations who were well accustomed to lobbying for government support. Surprises shake up the world, and can knock us backward at least as easily as they might push us forward.

The punditry exploded in 2020 with predictions about how COVID-19 might change the world forever. Would the increased sense of community survive the crisis? Would new-found respect for experts survive? Or would both subside in the inevitable post-pandemic finger-pointing? To what extent will people continue to work from home and shop online after the pandemic ends? Would we recognize what we have known for decades: That the quality of care in some elderly care residences is appallingly low? Would we spend money to do something about it? Would we, in particular, provide full-time jobs with benefits to healthcare workers so they need not spread disease across facilities in trying to stitch together a living from part-time work? Would we, more generally, appreciate that a lot of low-wage workers such as cashiers and warehouse workers play an essential role in our society, and maybe be a bit more open to enhancing incomes at the bottom end of the income distribution?

We can draw a few lessons from this explosion in predictions. First, humans expect a crisis like a pandemic to change things. Second, it is possible to imagine a quite diverse range of effects from any one surprise. We need, then, to treat surprises with the same broad interdisciplinary examination that we have applied to goals and strategies and trends in preceding chapters. We need, that is, to attempt to predict surprises *and* the effects they may have. Only then can we be prepared to build desirable futures while reacting to surprises.

5.1 How to identify surprises

How can we identify surprises? It may seem that surprises can come from anywhere, and that there may thus be an infinite number of possible surprises out there. While we must accept the possibility that we will not identify all surprises in advance, we can be heartened by the fact that there are mere hundreds of key phenomena studied across the scholarly enterprise. Surprises when they happen are generally unexpected realizations of the phenomena we study – particular diseases or technological innovations or business cycles and so on – rather than

new phenomena that we were completely unaware of. We then have a finite (albeit large) set of phenomena to query: "what possible surprises are possible with respect to this phenomenon?"

Throughout this book, we have stressed that phenomena operate within systems. This guides us to a second key question: "How might a change in this one phenomenon affect other phenomena?" COVID-19 was ugly just for its effects on human health, but it had further repercussions across many spheres: economic, political, social, cultural, and more. Surprises are more likely to be important if they involve multiple phenomena. History bears this out: In my *Making Sense of World History*, almost all of the major transformations or key events in world history (which would generally have been surprises at the time: "Whoa, agriculture; who saw that coming?") involve interactions among phenomena studied by multiple disciplines. However, given that most scholarly research – and thus understanding – is organized around disciplines, we are most likely to be surprised by the effects of a phenomenon studied in one discipline on the phenomena studied in others. We should stress this unfortunate combination: Surprises are most likely to be important but least likely to be foreseen if they involve interactions among phenomena studied by different disciplines.

We can proceed in what follows to investigate each major category of phenomena in turn. We can ask what kind of surprises are possible, and how these might be generated by interactions with other phenomena. When we identify possible surprises, we will ask which other phenomena they are likely to affect. We can then ask what sort of precautions societies might take to mitigate the surprise and its effects. We can also ask how reacting to the surprise might actually move us toward desirable futures.

We need not imagine that the list provided below is exhaustive. It is a start, and we can reasonably hope that if the right questions are widely asked, we can be prepared for most of the surprises to come. There is, yet again, a role for creativity here: We are, after all, imagining futures quite different from the present in important ways. As with all instances of creativity, we can prepare ourselves by thinking about how the world works, how our trends might be interrupted, how phenomena interact, how minor surprises today might presage bigger surprises in future, and so on. The more we reflect on such questions, the more likely we are to have a "What if?" moment. We can then pursue the hard work of analysing whether our inspiration is worth worrying about and planning for.

GUIDING QUESTIONS

Is the surprise likely? What effects might it have? How might we prepare ourselves for the surprise? Can we act to prevent the surprise? Can we be prepared to respond to the surprise in a way that takes us toward desired futures?

5.2 Particular surprises

5.2.1 Disease

There will be other pandemics. The precise disease may be a surprise, but there can be no doubt that there will be others. Some of these may have a more deadly combination of contagion and lethality than COVID-19. While this pandemic is fresh in our minds, there are a host of steps we can take:

- **Stockpile masks and other protective equipment.** The problem with pandemics is contagion, and we need to protect at the very least our healthcare workers. Hopefully we have learned that these must remain healthy both so that they can treat the sick and so that they do not themselves spread the disease. Since pandemics quickly become global, it is in the interest of rich countries to help poor countries stockpile.
- **Stockpile ventilators.** Many though not all pandemics affect respiration.
- **Act against deforestation.** Did you see that argument coming? Most pandemics occur when a disease endemic in some animal species mutates so that it affects humans. There is some speculation that some pandemics may have resulted when animals were forced into human environments by the destruction of their normal habitat. This is just a scientific hypothesis at the moment, but it provides yet another rationale for maintaining natural habitats.
- **Stop living so close to disease-bearing animals.** That is, we need to discourage at a global level humans from living in extremely close contact with animals that are most likely to carry such diseases. Bats and ducks may be particularly important here. Note that we need much more research into how pandemics have originated.
- **Reinvigorate principles and institutions of international collaboration.** In the depths of the COVID-19 pandemic, some countries interfered with international trade of masks and ventilators. We want to prepare ourselves for pandemics as cheaply as possible, and it would be quite expensive for every country to have to develop domestic manufacturing capacity for all healthcare equipment. A combination of stockpiling and international collaboration is far preferable – if achievable.
- **Provide greater economic security.** It will be far easier in future pandemics to encourage isolation if programmes such as a basic income are in place. We may even be able to imagine public works programmes that do not offend social distancing requirements.
- **Support research.** Advances in genetic engineering may allow us to develop vaccines and antidotes much more quickly. This will be particularly important if some future pandemic has much greater contagion and lethality than COVID-19. It may be possible to identify diseases in animals that are particularly likely to leap to humans, and work on vaccines before this happens. It is worth noting that the amounts spent on vaccine research have ballooned

during the pandemic but are still small relative to what governments have spent supporting individual and business incomes. The benefits of more research could far outweigh the costs.

- **Reinvigorate public faith in and understanding of expert advice.** Contagion can only be stopped by the actions of the entire community.
- **Make sure that the entire population has access to healthcare.** We all potentially suffer if a minority of the population gets sick among us.
- **Address disadvantaged populations**. Groups such as the homeless are at greatest risk of getting and spreading disease. We have suggested above that providing homes for the homeless may be a cost-effective strategy even outside of pandemics.
- **Inspect our elderly care facilities more often**. We should also require them to hire most workers full-time, since part-time workers spread disease between facilities. We can also improve home care so that more elderly people can remain independent longer (technology may be helpful here in making it easier for the elderly to look after themselves).

If we cannot institute all such policies before the next pandemic, we should be prepared to lay the groundwork for them *during* the next pandemic, when both the public and politicians will be motivated to act.

The question of lockdowns was an inherently interdisciplinary question that blended public health estimates of benefits in lives saved and economic and psychological estimates of the costs imposed on society. These understandings evolved as the lockdown proceeded. It made sense to shut down much of the economy if this could eradicate or nearly eradicate the disease. Yet lockdowns on such a scale become increasingly costly as time passes. Governments struggled to provide aid to those thrown out of work (and to businesses shuttered) and incurred huge debts in doing so (taxes might have been increased to those like myself who kept their jobs, but politicians shied away from that option). Lockdowns were thus eased before the disease was eradicated. What to do when infection rates rise again? More selective measures seem in order where we worry a lot about high-risk venues like residences for the elderly and meatpacking plants and bars, and encourage social distancing more broadly, but allow most of the economy to proceed as usual. The exact policy balance will depend on whether infection rates are at a level with which our health systems can cope. This balance is hard to strike because the virus tends to expand exponentially as each infected person infects multiple others: Unless it is completely eradicated, it bounces back in a big way over time. (Japan and Taiwan appear to have been able to have less severe lockdowns because of greater social commitment to social distancing; the role of values in fighting a pandemic should not be ignored.) We have learned a big lesson – to target our measures strategically where the benefits exceed the costs – and a number of smaller lessons about where the greatest risks lie. It took far too long to appreciate that some workers faced far higher risks – meatpacking plants, delivery services, taxis – and that these

should have been prioritized for health measures, contact tracing, and vaccination. (Discreditably, the fact that such workers were often poor and from ethnic minorities likely contributed to their neglect by authorities.) We have not, but should have, learned another lesson: that subsidies to businesses need to be transparent lest politicians seize on a pandemic as a glorious opportunity to reward their donors and friends. We might usefully plan in advance for transparent disbursements during the next pandemic. We also should have learned that we need to structure our support for individuals in a way that maintains their incentive to seek the jobs that are available.

As stressful as the COVID-19 pandemic has been, it may have some beneficial long-term effects on society. More people have biked to work in order to avoid public transport. Many have worked from home. Many cities have expanded areas of outside bars and restaurants. These changes have beneficial environmental impacts. These can be encouraged by a variety of government policies after the pandemic ends (and future pandemics will likely encourage similar activities in future): bike lanes, tax deductions for home office expenses, perhaps better treatment in our benefits plans of part-time workers, creating more pedestrian-only and patio space in our cities. The challenges that governments faced in supporting individual incomes have likely advanced conversations around basic income by decades. Yet these changes create challenges too, especially for urban planners: What happens to city centres if firms and government agencies decide that they really don't need all that office space? What happens to restaurants if workers stay home? Can office space be repurposed for residential or public use? There are opportunities here for reimagining our cities.

5.2.2 Refugees

In the early decades of this century, the world has not known what to do with millions of refugees from civil wars in places like Syria or South Sudan. Yet future refugee flows may be much larger. Climate change may submerge some islands and coastal areas. Other areas may experience shortages of food or drinking water. Wars may be fought over access to water. Refugees may flee authoritarian regimes, perhaps especially when democracies backslide into authoritarian rule.

Will the world turn away if an idyllic Pacific island disappears under the waves? Will refugees be stuck in some hellish refugee camp for decades on some slightly higher island? Such an act would violate principles of caring and justice and social responsibility: It is not at all their fault that their island disappeared. If refugees are allowed to settle elsewhere, will they spark concerns about employment and welfare spending, and intensify critiques of diversity and social spending? Will refugees spark border conflicts?

Or will we develop strategies for integrating refugees into a new life? Will we explain the new cultural environment to them, help them find jobs and homes? Will we encourage them to contribute their own cultural ideas and cuisines, while

forging bonds in their new homes? Will we act in a way that is both ethical and prudent, so that refugees become neighbours rather than a threat to world peace?

It is quite possible that we will see future refugee flows that will dwarf those we already fail to cope with. Yet these likely will still be small relative to total global population. If refugees are shared across countries, the burden on any one country is reduced. Rich countries can pay poor countries to take refugees. Families and community groups can sponsor individual refugee families, providing them with a ready source of advice on the diverse challenges associated with moving to a new land. (Some of the most touching videos on Canadian television during the COVID-19 pandemic were of refugees leaving food on the doorsteps of former sponsors forced to self-isolate.) A world of several billion people can absorb millions of refugees if it has the will to do so.

We will of course need to be careful that our actions do not encourage even more refugees. Yet it is fairly easy to identify situations where people have little choice but to flee. These people deserve to be helped. A prudent strategy is to address these situations before they flare up: to arrest climate change before islands are flooded, to support democracy throughout the world, and to use aid and diplomacy to lessen social strife in poor countries. Both those who fear refugees and those who are ready to embrace them should be able to combine in support of policies that address the root causes of refugee flows.

5.2.3 Climate change

We have discussed gradual changes in climate in earlier chapters. Yet climate scientists worry that there may be tipping points at which the speed of change accelerates. We might see fairly dramatic but sustained changes in weather patterns, so that some regions become much hotter or drier (or, yes, colder, or wetter) fairly suddenly, and this becomes the new normal. Gradual climate change allows gradual adjustments, which may involve phasing out agriculture in some regions of the world. Sudden climate change may suddenly impoverish entire agricultural regions. Rich countries can be prepared to offer income support and relocation grants – as we have suggested elsewhere for sudden changes in the location of industrial production. Poor countries may have limited capacity to prevent sudden mass migration or starvation. The world should be prepared to provide massive income support.

A more readily imagined disaster involves a sudden rise in sea level as ice sheets slide off Greenland or Antarctica into the ocean. Incredible as it may seem, it is quite possible that sea levels could rise by several inches. This may not seem a lot, but many low-lying areas would then become subject to flooding. Since we can be sure that sea levels will rise slowly over the next decades, it would be prudent to encourage people to move away from such areas now. It is the height of imprudence to casually allow further construction in such areas, when such construction might easily be located on higher ground. A more complicated challenge emerges on low-lying islands where there may be no alternative to relocating entire

communities (or Pacific nations). In some cases, it may be possible to save low-lying areas by building a sea wall around them. Much of the Netherlands has survived below sea level behind such walls for decades. Where it is possible, it will be better to build such walls before the land behind is flooded.

We have seen in recent decades an increase in the frequency of devastating storms in many parts of the world. It very much appears that this is the new normal. The financial costs associated with storms (and other disasters) have skyrocketed, because of both increased storm frequency and increased density of structures in storm-prone areas. We should thus be careful of building on the floodplains of any river or along coastlines. Since weather patterns may shift, we must worry about the floodplains of rivers that have not flooded in decades. We should certainly expect that rivers that have flooded recently may flood again fairly soon. Yet flood-relief programmes often assist flood victims to rebuild on the spot. We will collectively reap the cost of such policies. However, individuals should be warned not to expect public relief if they build on a floodplain against the advice of the government. The balance we have often sought in this book between social and personal responsibility would indicate that the public should help those guided by stupid government policies but not those guided by their own stupidity.

We have also seen an increased incidence in recent years of devastating forest fires. This reflects both climate change and the steady encroachment of humans onto forest land. Humans can be lauded for liking to see trees out their windows. But houses are much less likely to burn if separated from forests by farms or parks or golf courses. And we can build houses out of materials that are less likely to burn for not much more than it costs to build with flammable materials. We can (at somewhat greater expense) also bury electric wiring, which often sparks fires.

5.2.4 Natural disasters

Along with those disasters resulting from climate change, humanity may face a wide array of natural disasters that are not our fault. The most obvious are earthquakes (and resulting tsunamis) and volcanoes. Humanity is powerless to stop such events (at least for the near future). We are, however, increasingly good at predicting them, at least hours or days in advance. Rich countries could usefully help poor countries establish the necessary sensors. Even a few hours' warning can result in many lives saved.

We also know how to construct buildings so that they can withstand an earthquake. Rich countries have improved building codes in areas that are most likely to experience an earthquake. It is worth devoting a little extra expense in construction to save structures and lives during an earthquake – if we have good reason to suspect that there may be one in the next decades. Still, it appears that we under-invest in initiatives to protect our buildings and infrastructure, for we fail to take into account the full costs of destruction. Poorer countries naturally find it harder to insist on extra expense up front. Yet if political leaders there were less present-focused they might also toughen – and enforce – building codes. Poor

neighbourhoods in rich countries often also struggle to abide by building standards set centrally. Yet the poor often suffer disproportionally from disasters, because they are often located in places that are more dangerous and live in flimsier buildings. Our disaster mitigation policies should take into account the challenges faced by the poorest communities both before and after disaster.

The efforts of some locales to prepare for earthquakes is a laudable instance of human prudence. We are less prudent with respect to other scenarios. Some scientists worry that a solar flare might wipe out the electrical and communications grid across a huge swathe of earth facing the sun at the time. It would take weeks or months to repair these systems, and in the meantime water supply and food supply might both be threatened. We should strive to insulate our systems from such a calamity. We have developed satellites that should give us a half-hour warning of a massive flare; this might allow us to protect some systems. But we have no real backup plan. We should ensure that essential services have backup generators. Last but not least, it is probably a good idea to have local food and water stockpiles.

The earth is visited regularly by space debris. Every century or so a meteorite strikes that is large enough to do damage if it hits a populated area. With far less frequency the earth is struck by an asteroid that wreaks devastation on the entire planet. It may be too simple to say that one single asteroid killed all the dinosaurs, but it is clear that the asteroid in question (we think it struck the Yucatan Peninsula) annihilated many species. The geological record provides evidence of several other asteroids with a global impact. We should have little doubt that it will happen again, though it is hard to predict whether this will happen years or millennia from now. How much effort should we put into worrying about this? The probability of an asteroid strike in the next decades is close to zero. Yet such a strike could destroy the human race. We at present monitor the cosmos unevenly and so will see asteroids coming from some directions much earlier than others. Still we can take solace that astronomers have not identified any large body headed in our direction. Could we do anything about it if we saw an asteroid coming toward us? We have the capability of launching craft far into space, but these could not easily carry a payload that might deflect the course of an asteroid. (NASA is experimenting with a rocket that might deflect a smallish asteroid.) The beauty of asteroids is that – unlike volcanoes or earthquakes – we could potentially have years of warning that one was headed our way. It might be worth a few bucks to scan the near universe a bit more carefully. An approaching asteroid would focus minds wonderfully on how we might deal with it. (And yes, it might enhance our shared appreciation that we all depend on the survival of our planet, and indirectly of our shared humanity.)

5.2.5 Nuclear disaster

We know that disasters are possible at nuclear power plants. We know that these can have dire consequences for local populations. We know that they can generate clouds of radioactive particles that can endanger distant populations.

We also know that climate change threatens our way of life. Nuclear power provides one alternative to generating power with oil and gas and coal. We need to carefully evaluate the risks associated with these alternatives, and compare the overall costs (including these risks) of different ways of generating energy. There is much scope for expert advice on these questions. Yet the broader citizenry needs to be involved in these discussions, for they need to decide which risks they are willing to take.

We do already demand stringent safety standards in nuclear power plants. We still have no good idea of what to do with nuclear waste produced by such plants. We have evacuation plans but these are likely to prove inadequate in an emergency. We have treatments for radiation poisoning but are not capable of treating large numbers of victims simultaneously. We know that even the most stringent engineering standards cannot reduce the risk of disaster to zero. We must also attach some risk to a terrorist attack on a nuclear facility. We should likely be better prepared for disaster.

5.2.6 Terrorism

I argued in *Making Sense of World History* that terrorism rarely if ever works. Indeed terrorism has in many cases made it more difficult to achieve the goals that terrorists were pursuing. Some might be tempted to justify some terrorist acts if these achieve certain social goals. But if terrorism does not work, then this dangerous argument falls apart. Terrorism is then something we should all oppose.

Modern technology facilitates terrorism. It is all too easy to kill large numbers with modern weaponry. It is not possible to protect every possible terrorist target. Moreover, there is a significant risk that terrorist groups might get their hands on even worse weapons in future, whether nuclear or biological in nature. We depend a lot, then, on police and intelligence services to identify terrorists before they strike. We must take care that these services have the necessary resources. We must be careful, though, that we spy and interrogate in ways that respect human rights. We can easily incite terrorism with our efforts to eliminate it.

Democracy thrives on freedom and respect for human rights. Democracy works best when the vast majority act with a basic respect for the state and its laws. Democracies must always struggle to police those who disdain these rights. Terrorism is an existential challenge to democracy, for it is hard to strike the best balance between respecting rights and achieving security. A concerted terrorist threat will force the most dedicated democrats to abandon cherished principles.

It is critical, then, that we not exaggerate the dangers of terrorism. The numbers killed in terror attacks are dwarfed by the numbers killed in car accidents every year. We manage to live our daily lives despite the knowledge that some reckless driver may crash into us at any moment, and should not allow fears of much-rarer terrorist attacks to paralyse us. Of course, the possibility that terrorists might gain access to weapons of mass destruction is worth worrying about. We should focus

our intelligence efforts on preventing large-scale attacks (and we could likely do a better job of policing supplies of plutonium or biological agents).

Many of the strategies and goals pursued in this book should act to limit the causes of terrorism. We cannot stop every loser who somehow thinks they have a right to kill others, but we can achieve much by enhancing faith in democracy, encouraging respect for diversity, encouraging international peace and collaboration, encouraging self-knowledge, and reducing inequality and uncertainty. These can work against both domestic and global terrorism.

We have found out the hard way that global terrorist movements are a threat to everyone. It should then be a no-brainer that rich countries should help governments everywhere in the world to battle terrorist threats. Yet it seems quite possible that in the next decades swathes of West Africa will come to play the role in fostering international terrorism that parts of the Middle East have played in recent decades. African governments are receiving some aid in fighting terrorist insurgents, but not enough to achieve victory. We should care about the terror being unleashed against innocent Africans – as when schoolgirls are kidnapped and forced to marry fighters. We may well find that we have more personal reasons for regret in the decades to come.

BOX 5.1: IMMIGRATION AND TERRORISM

I have skirted a thorny issue of whether we should reduce the immigration of people from religious or ethnic or ideological groups that have a higher propensity to commit acts of terrorism. The first point to stress here is that terrorists are an exceedingly small minority of any group. We would probably have no qualms about restricting migration if half a group were terrorists. However, if the propensity to terror is minuscule then we face a conflict between our desire to achieve security and our belief in rights and respect for diversity. We have, for good reason, laws that prevent discrimination, including by our police forces. We do not (officially) allow police to target particular groups. Should we give different instructions to our immigration authorities?

This is the sort of question that modern societies should be able to talk about. We should be able to appreciate that people may disagree, and feel very strongly about their reasons for disagreement. Human rights are not negotiable for some. Security is not negotiable for others. This may be yet another place where a citizens' assembly might be useful, though we should not imagine that everyone will be satisfied with its findings.

While this particular issue may be contentious, there are related issues that most people might agree on: that we should help immigrants integrate into the wider society, that we should pursue a transparent foreign policy, and that we should actively pursue respect for diversity.

5.2.7 Civil strife

We have in this book stressed a set of strategies and policies that can benefit most members of society. Yet democratic decision-making can easily descend into a battle over resources where policies are advocated that benefit some at the expense of others. In such an environment resentment can simmer for a while, but may explode into civil strife over even fairly trifling disagreements. That outcome may still be distant, but there have already been some frightening events where ideological zealots have assassinated politicians, conspiracy theories have led to attacks on innocent people, and demonstrators have clashed on the streets of democracies. Social media is rife with hateful commentary and threats, mostly inspired by cowardice but occasionally motivating readers to action.

One does not want to engage in fearmongering. Nevertheless, can we rule out large-scale riots? Can we rule out violence targeted at political opponents? We discussed a slow slide into violence in chapter 4, but a sudden uptick in violence is perhaps even likelier. We can imagine a variety of triggers:

- A very close election result, especially if there are concerns about electoral wrongdoing, or doubts about the fairness of electoral procedures. (Any electoral system that does not ensure that the person or the party or coalition with majority support wins an election is a ticking time bomb.)
- An economic downturn in which aid appears to be lavished on some groups more than others.
- A foreign conflict that is supported by some but opposed by others
- Any government policy which appears to reward one minority or punish another.
- Any of the surprises we have addressed above that are handled badly or in a biased manner.

In a hyper-partisan environment, the exercise of violence by one side can easily trigger a violent response. Each side will feel aggrieved. Compromise will become ever harder to achieve as attacks continue. Note that it only takes a small minority on each side to begin a process of violent retribution that becomes hard to stop.

As noted previously, governments must strike a balance between protecting freedom and maintaining public order. They will necessarily adjust that balance in response to violence. Some limits must be placed on violent acts, even if that means limiting rights to demonstrate and even to speak. Yet these actions will in turn weaken support for democratic governance. [Again, these words were first drafted before the Black Lives Matters protests of 2020, and the intense debates these sparked about how to limit a violent minority while respecting the peaceful majority of protestors.]

The simple fact is that we may not have a lot of time in which to correct democratic deficiencies. Democracy is like a balloon: Once it is popped, it will prove hard to put back together. Sadly, we may have to teeter on the edge of disaster before

recognizing the danger. Hopefully, we will be so lucky as to be able to back away from the edge.

5.2.8 Another depression?

Decades ago, I wrote a book about the Great Depression of the 1930s. I argued that that catastrophe owed much to an abundance of labour-saving process innovation at the time, and a very limited amount of new goods or services being developed. I noted then that such a severe mismatch between the two types of innovation was unlikely to occur again. Industrial activity and innovation was then focused on a small number of sectors (with automobiles alone accounting for one-eighth of industrial employment in the United States). Both economies and the research enterprise have become much more diversified since. Nevertheless, the downturn of the 1970s arguably reflected similar forces, and I have thus urged governments to encourage the development of new goods and services in chapter 3.

I worried in my book that economic theory had become sceptical of the government's ability to fight unemployment, and that governments might therefore react sluggishly to a sharp downturn in economic activity in the future as they had in the 1930s. Yet in both the financial crisis of 2008 and the COVID-19 pandemic of 2020, governments have proven quite willing to spend vast sums to maintain economic activity. The perceptive reader may take this as evidence that my own ability to predict the future has limits. I worried too much about what economists were thinking, whereas the broader public still expected governments to try to fight recessions. Governments regardless of ideological stripe responded to these public expectations – a sign that political bickering can be set aside when a societal goal is brought into sharp focus.

I would thus have confidence that we will not see another period of economic contraction as severe as the Great Depression – unless triggered by a pandemic or sunburst or some other calamity from far outside the economic system. Nevertheless, prudence suggests that we have policies in place – like a basic income – that support incomes quickly in the event of a sharp economic contraction. Otherwise, contractions are self-reinforcing for a while as those who lose their jobs decrease their expenditures and cause further job losses.

The reader may be tired of how often a basic income gets mentioned in this book. Yet this one policy supports goals of reducing both inequality and insecurity while preparing society to cope with a wide range of surprises. We set out in this book to identify strategies that support multiple goals and have identified a strong possibility. We still need to estimate its cost – and thus the degree to which it detracts from our goal of economic prosperity. Yet if it turns out that a basic income replaces other government programmes that are costlier to administer (and may have even worse incentive effects than a basic income if they discourage people from working), and serves to limit the size of recessions, it may be that the effect on economic prosperity is either limited or positive.

5.2.9 Dramatic increases or decreases in the price of food or water

We noted in chapter 4 that food output has risen faster than population over the last several decades, and can be expected to do so into the future. Yet there have been sharp spikes in the global price of foods in the twenty-first century. Harvest failures in just a couple of key growing regions can lead to dramatic increases in price. There is a simple reason for this: People need to eat and will devote most or all of their income to eating if they have to. Yet demand and supply in global food markets is roughly balanced, and so a shock to supply causes prices to surge.

Climate change may increase the frequency of harvest failures from both drought and flood. Natural disasters can also disrupt agricultural production: A major volcano, in particular, can block sunlight for months or years (as Krakatoa did in the nineteenth century). We started this chapter with a discussion of pandemics; we should appreciate that diseases can and do strike our crops and farm animals with devastating consequences. Civil strife can also interfere with agricultural production.

Human societies have dealt with the challenge of volatility in food prices for millennia. Sometimes, states did little and the poorest people suffered extreme hunger and even starvation. Often, states held stockpiles of non-perishable foods and released these if prices rose high enough to cause distress. The states that did so often found that the strategy was not too expensive. They bought grains when prices were low and might then sell these at a higher price – but still one that people could afford.

We need not stockpile huge amounts of food to insulate ourselves against most price spikes. A decrease of just a per cent or two in world food production can send prices very high. Since governments often try to support farmer incomes when prices are low, it may not be costly at all to buy enough food during abundant harvests to see us through one year of bad harvests.

Note that we do not want to totally erase price volatility. We need to encourage farmers to grow, and so must allow them to benefit to some extent when prices rise. A moderate policy of stockpiling, that serves to raise prices a bit when food is cheap but lower prices a lot when food is expensive, can strike a balance between rewarding farmers while preventing hunger.

Climate change may disrupt agriculture production for years. Population may grow faster than food output (though this has not happened yet). Humanity has never in the modern era dealt well with several years in a row of insufficient harvests. It may be prudent to stockpile more than enough for a year or two. Yet it would be even better to reduce the likelihood of multiple years of bad harvests. The best strategies here are those we have discussed previously for arresting climate change and limiting population growth. We need also to be careful that we are not slowly destroying the fertility of our soils with chemical fertilizers and insecticides.

Water is not traded globally in the same way that food is. Spikes in the price of water will thus be more localized than spikes in the price of food. They will reflect changes in rainfall patterns, or perhaps wars that interfere with access to fresh water. Humans need water even more desperately than they need food. At

present, humans consume more water than global rainfall, and thus aquifers are being drained in many parts of the world. There is, again, scope for stockpiling during good times. The costs of transporting water indicate that there need to be stockpiles in all regions of the world, and some regions already have limited scope for this. The world might still find itself needing to transport large amounts of water to a region suddenly afflicted by drought or war. Prudent strategies include decreasing water consumption (which will in some cases involve charging big users more for it, while recognizing that people need water), water retention (including fixing our pipes: it is estimated that 10 per cent of the globe's clean water is lost through leakage), limiting deforestation, managing aquifers (which in many cases will involve international agreement), and researching technologies such as desalination and recycling.

5.2.10 War

We have in earlier chapters proposed strategies for encouraging peace. Yet we should nevertheless be prepared for some future war. Authoritarians can whip up public support for a war by arguing that this will gain resources or people with whom locals either have an affinity or a desire to punish. Many of the world's borders are arbitrary – especially those drawn by colonial governments in Africa. Lacking any sensible international protocol for revising borders – which might involve some combination of international arbitration and referenda among people in contested regions, and maybe international funding of some land swaps where peoples are interspersed – governments may feel justified in taking matters into their own hands.

In the past, leaders have often miscalculated the costs and benefits of war, and some future war may also result from some leader underestimating the horrors of war while exaggerating the benefits. Wars can also be fomented by misunderstandings: If one side comes to feel threatened or insulted, a war may result that nobody wanted. International collaboration and adherence to rules of international conduct can reduce the risks of misunderstanding and miscalculation.

As noted above, modern warfare can be brutal, with great suffering inflicted on civilian populations. What should the rest of the world do when war erupts in some part of the globe? This is not a question easily answered in the abstract, for it depends in turn on the answers to a set of ethical and practical questions. It is nevertheless valuable to know those questions in advance. Is there one side in the war that has broad public support? Is there one side that seems dedicated to democracy and human rights? Can a peacekeeping force limit hostilities? Will locals welcome a peacekeeping force? Is there a feasible and obvious end goal? If the answer to all of these questions is positive, then a case can be made for stepping in. If the answer to some questions is negative, then the ideal policy is much harder to determine.

Will nuclear deterrents continue to prevent nuclear war? Probably. Yet there is always a danger that some country gains a technological advantage and then thinks that they can either take out an opponent's entire arsenal or completely defend

against reprisal. The temptation to attack may then be great. The side with the new-found technological advantage may decide that there is a narrow window of opportunity before the technological gap is closed. This risk will not go away until all countries with nuclear capability are democratic, but can be attenuated by efforts at international collaboration politically, economically, and culturally.

5.2.11 Contact with extraterrestrials

It is increasingly likely that humans will discover clear evidence of intelligent life on other planets. We have already identified numerous planets circling distant stars that appear to have the potential of supporting life. Since we have only the vaguest ideas of how we might ever travel beyond our solar system, the probability of contact with extraterrestrials is much lower. Yet we cannot dismiss the possibility that some extraterrestrial species has developed far superior technology to our own. While visitation by extraterrestrials is still unlikely, the effects would be so huge that it is worth speculating on how humanity should prepare for such an eventuality. (I have for decades had exam questions in which students were asked to speculate on the impacts on various phenomena of visitation by emissaries from the planet Zorbon.)

The most obvious precaution, perhaps, is that earth should negotiate with extraterrestrials in unison. We do not want extraterrestrials negotiating landing rights or military bases with one rogue earthly state. We can be reminded how human empires of the past sowed discord among subject peoples in order to maintain their power. Though the United Nations has limited legitimacy – because so many members are undemocratic, and decision-making in the bureaucracy is opaque – there is no present alternative to endowing that body with the sole right to negotiate with extraterrestrials. We should, at the same time, strive both to enhance democracy globally and to increase the transparency of UN decision-making.

Some may be tempted to hide from extraterrestrials, at least until we can develop technologies to defend ourselves against a fleet of starships. If we stop beaming radio signals into space, maybe they will not know that we are here. Yet this seems a foolhardy strategy: If there is a species out there with the ability to travel between stars, it will find us. We had best hope that they are friendly. If they are not entirely friendly, our best hope is unified defiance.

Whether they are friendly or not, contact with extraterrestrials will likely cause humans to reflect on our common humanity. We tend these days to be more conscious of the differences between groups than of our basic human commonalities, but our differences may seem trivial if we come to converse with other life-forms. We may be far less likely to war with each other if we need to focus on how to deal with others. Even the task of reflecting on how we would deal with extraterrestrials may have salutary effects on international relations and cultural toleration.

It is harder to predict the cultural implications. When Europeans (and by extension Asians and Africans) encountered the then unknown Americas in the late fifteenth century, this sparked a great deal of soul-searching. Many questioned the wisdom of both religious prophets and secular philosophers who had been unaware

of half the globe. In the Americas, cultural change was even more dramatic as both epidemics and military conquest drove many locals to abandon local deities that seemed to have forsaken them. What sort of cultural changes might unfold as a result of extraterrestrial contact? Europeans and Native Americans each marvelled at the strange customs of the other. How would we react to the undoubtedly strange customs of extraterrestrials? Would cultural attitudes change so dramatically as to cause cultural dislocation, as happened with many indigenous groups in the Americas? Or can we develop enough shared sense of what it means to be human that we can survive any surprise?

Even if there are not extraterrestrials out there waiting to meet us, it may be useful for humanity to reflect on what it would mean if there were. It might prove wonderful to gain better evidence of life on other planets. We might then gain a better understanding of ourselves and a greater appreciation of our global community.

Indeed there is an important puzzle at our present stage of seeking intelligent life on other planets. As noted above, we have in the last decades identified a vast number of planets that seem capable of supporting life. Yet we have found absolutely no sign of intelligent life anywhere else in the universe. Are our techniques for identifying the signs of intelligent life that bad? Is the emergence of life, and then intelligent life, really so unlikely that it has only happened once? Or do civilizations that achieve the sorts of technological capabilities that we seek to identify characteristically destroy themselves very quickly? There may then have been many emergences of intelligent life, but it is unlikely that there will be multiple intelligent life-forms at any point in time (recall that all of human history is but a moment compared to the billions of years that the universe has existed). We had best hope that it is not the last of these.

BOX 5.2: THE PRIME DIRECTIVE

The television and movie franchise *Star Trek* imagined a future in which humans were among the most technologically advanced species in the universe. The popularity of this and other science fiction indicates that humans have a curiosity about a future of extraterrestrial contact.

Star Trek producers early on invented the "Prime Directive," by which starships were absolutely prohibited from interfering with the independent cultural development of less technologically advanced species they might encounter. This directive was likely developed in response to some familiarity with the cultural dislocation suffered by indigenous groups on earth after encountering outsiders with modern technology for the first time. On at least one episode, it was wondered if the Prime Directive prevented the rescue of a species from an impending natural disaster. I never liked the Prime Directive. It struck me as both arrogant and stupid to decide what is best for others,

especially in situations where we could clearly help them. I think we need to approach such groups carefully – whether in the Amazon or in space – but should let them decide which of our technologies and customs they might want to borrow.

5.2.12 A plea for interdisciplinarity

There will surely be other surprises in our future. Indeed, we might reasonably be accused of having in this chapter identified the least surprising surprises. What can we do to take a stab at identifying more surprising surprises (what some would call "unknown unknowns," the things we do not even know that we should worry about)? One key strategy here is to encourage interdisciplinary research. I found in *Making Sense of World History* that the major transformations in world history – which would have been big surprises at the time – involved interactions among phenomena generally studied by different disciplines (and there are dozens of flowcharts in that book that establish this point). The development of agriculture arguably reflected (at least) changes in population, environment, and technology (and in turn had dramatic effects on environment, population, economy, politics, and social structure). The expansion in the size of state bureaucracies over the last century reflects political, economic, and technological developments, and has impacts on phenomena studied across the human sciences.

Despite the historical importance of cross-disciplinary linkages, the vast majority of research in the contemporary academy occurs within disciplines. Moreover, disciplinary theories often posit some sort of stability in the system of phenomena that they study (economic stability, chemical stability, social stability). They recognize theoretically that this stability can be shocked by influences from phenomena outside the system, but devote the bulk of their attention to the systems of stability. We thus know far more about the forces driving stability than the cross-disciplinary interactions that tend to drive instability. If we can encourage a greater emphasis on interdisciplinary research within the academy, we will surely identify other plausible surprises.

BOX 5.3: NARRATIVE

We have in box 4.6 and elsewhere urged student exercises that focus on drawing diagrams. Yet futurists understandably often stress the importance of "narrative" in imagining both plausible and desirable futures. Narrative is often defined broadly, so that it could mean careful causal argumentation in words, or the crafting of metaphors that capture some key element of the future. But

it is often used in the more narrow sense of "telling a story." Such narratives can take several forms. They can describe life in some imagined future – in short story form or perhaps in the format of a newspaper or magazine article. They can tell a tale of how humans make good or bad decisions, and the effects these have: That is, they can tell us something about how we might get to certain futures. This is a good point in the book to suggest a narrative exercise: Students should draft a short story (or produce a short film that tells a story) or newspaper or magazine article from the future. Note that a compelling narrative will likely address more than one of the trends of chapter 4 and surprises of chapter 5 (or policies advocated in chapter 3). One point of this book is that humans live in a complex world, and thus life in the future will be different in many ways (but also recognizable in many ways).

Futurists, it should be noted, do not just draft narratives but carefully examine the narratives of others. How do people speak about the future: Are they optimistic or fearful? Do they have confidence in other people, governments, businesses, or NGOs to make good decisions? Do they blame certain groups or individuals for life's injustices? We have stressed at many points in this book that values and beliefs are important, and must then appreciate that the way humans imagine the future will influence if and how they try to shape that future. For example, a belief that "economic growth is good" likely underpins a host of human decisions. It has been argued that countries that tell stories of working together have dealt with the COVID-19 pandemic better than countries that are either fatalistic or focused on blaming others.

It is important, then, that we reflect on the advantages and disadvantages of narrative. On the plus side, humans love stories and these can have a powerful effect on them. It is indeed an intriguing psychological observation that most humans prefer reading works of fiction to works of non-fiction: Why do we devote so much effort to reading made-up accounts rather than efforts at history or biography? One hypothesis is that works of fiction allow us to inhabit lives other than our own, learn other perspectives, and learn how humans make complex decisions. A well-crafted narrative has the potential to inspire humans to action. Stories can give meaning to people's lives if we see a role for ourselves in a story that is bigger than us. And a narrative approach forces us to confront questions of detail – what do people eat and wear, where do they live, how do they work and travel – that we might otherwise omit in a study of the future. As noted above, a good narrative will be complex, capturing how different trends and policies and surprises interact. It can help us appreciate key steps on the path to both better and worse futures. Last but not least, narratives are a format in which our subconscious thought processes speak to the world: We have stressed the importance of creatively grappling with our future in this book, and should appreciate that we may find ideas we were not consciously aware of in both our narratives and the narratives of

others. A narrative may also expose biases that we or others would consciously disdain.

On the down side, narrative may guide humans to negative acts. A narrative that blames other groups for life's problems can inspire discrimination and violence. Note that humans have a tendency to personalize stories: We can tell students a complex historical process where various impersonal forces were at work, and they in retelling it will stress the role of human actors making deliberate decisions. Conspiracy theories are popular in part because they blame bad things on purposeful evil acts rather than a complex world that humans struggle to influence in desired directions. Humans also like stories that come to a clear end, but human history is a set of overlapping stories which may never come to resolution. Humans are thus tempted to simplify our views of both past and future, limiting our ability to grapple with complexity and surprises. Literary theorists are fond of noting that narratives are full of ambiguity: This may guide us to grapple with complexity, but means that it is easy to draw quite different lessons from the same narrative. We should be willing to carefully interrogate the lessons we draw from stories.

There is, we might note, a debate among futurists about the role that science fiction should play in the field. Do authors of science fiction have special insights? Do works of science fiction give us useful glimpses of plausible or desirable futures? Some futurists worry that we may reify works of science fiction, treating them much as if they were histories of the future. There is (of course!) a possible student assignment here where students can analyse the plausibility of a science fiction story of their choice, and ask what if anything we might learn from the story that we can apply to shaping our collective future.

BOX 5.4: THE WORLD ECONOMIC FORUM GLOBAL RISKS REPORT

I had drafted most of this chapter before I came across the World Economic Forum's (WEF) survey of risks facing the global economy. It is not surprising that our lists overlap a great deal. Many of what they call risks and I call surprises are easy to identify. Sadly, this need not mean that we are not both unaware of some risks/surprises on our collective horizon. The WEF talks more about cyberattacks and data breaches than I do; this is a worthy subject for concern about which I know vanishingly little. The WEF has produced really complex diagrams that show how the various risks they have identified might interact. See www3.weforum.org/docs/WEF_Global_Risks_Report_2019.pdf, pp. 6–7.

5.3 Interactions among surprises

Some of our surprises come from outside of human society: natural disasters, contact with extraterrestrials. Yet in other cases, one surprise can result from other surprises: Wars and natural disasters can unleash floods of refugees, terrorism can lead to nuclear disasters, volcanoes and earthquakes can lead to local spikes in the price of food and water. Almost any surprise can cause civil strife if people are desperate or if governments seem unprepared or uncaring. Wars and refugee crises could likewise be triggered by several other surprises (see Figure 5.1).

Almost all surprises have economic and political repercussions. We will be more resilient in our response to any surprise, then, if we have managed in advance to create institutions that provide economic security and that provide confidence in our collective decision-making capabilities. While we cannot know which precise surprises will happen, we can be supremely confident that we will be surprised. We should prepare ourselves for these surprises by putting in place what are effectively insurance policies against both economic and political disruption.

Surprises are nevertheless unique. Even a well-prepared society will want to respond to particular surprises in particular ways. The challenge here is that societies must usually make decisions regarding responses very quickly. As the COVID-19 pandemic unfolded in 2020, governments spent unheard-of sums of money on programmes that were cobbled together in a matter of weeks. Such programmes necessarily received limited public scrutiny: The overriding concern was that money

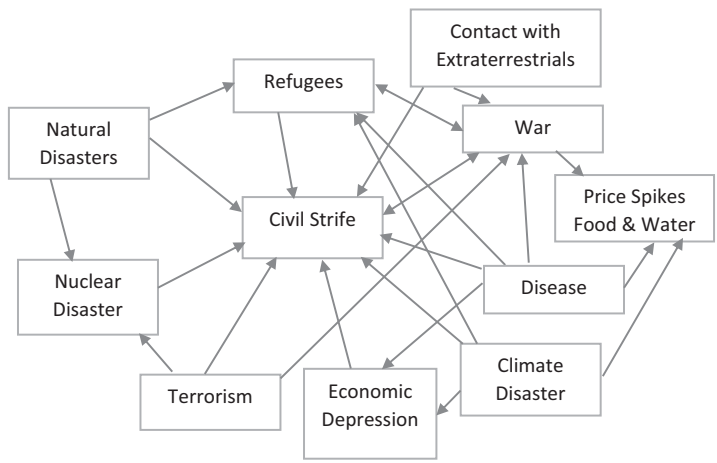

FIGURE 5.1 Interactions among surprises.

Note that we are only capturing links here between surprises, not all of the negative impacts that surprises may have. It is still useful to appreciate that surprises might cluster, magnifying the effects of the original surprise. Not all of these arrows were discussed in the text, but readers should not have difficulty understanding how, say, a natural disaster might trigger a nuclear disaster.

get out the door fast. There was, in fact, a big implicit argument regarding waste at work: Millions of families had lost employment overnight and it was judged worthwhile to aim money at them even if much of it might miss its target. There was huge scope for malfeasance, for special interests to lobby that some of these vast sums should flow through them.

The COVID-19 pandemic was a special kind of surprise in which public works programmes would have been infeasible because they usually involve people working in groups. For other surprises, it would be useful to have a set of initiatives "on the shelf" that might be put into play in an emergency situation. More generally, it is useful to develop strategies that may seem unlikely to garner public support soon, for these may suddenly seem worth a try in the aftermath of a surprise. Societies will almost inevitably try something new to cope with a surprise, and should have ready recourse to good ideas when they do.

There is an old saying: "Never let a good crisis go to waste." Crises are opportunities for change. We can be sure that the self-interested will mobilize quickly to turn a crisis to their advantage. People of goodwill can, by developing strategies for a better world, hope to see crises as opportunities for societal change in beneficial directions. If we need to stimulate economic activity, then let's stimulate green energy or clean up our parks. Let's also appreciate that the poorest people are most likely to spend their income rather than save it, and thus putting them to work ensures that their incomes benefit others. Stimulus programmes that target the poor are therefore more likely to achieve their goal.

BOX 5.5: SWOT ANALYSIS

Organizations are often encouraged to do a SWOT analysis, identifying the organization's strengths, weaknesses, opportunities, and threats. We are now well placed to do a SWOT analysis for the world as a whole, and especially of developed country democracies. Our strengths were most obvious in chapters 2 and 3, and our weaknesses in 3 and 4. Threats and opportunities were highlighted in chapters 4 and 5. Note that the same phenomenon may appear in more than one place.

Strengths:

- Economic prosperity as never before seen in all of human history. We thus can afford to do lots of different things.
- Health and life expectancy never before seen in world history.
- Technological and scientific understandings far superior to any previous period in history.
- Increased respect for societal diversity.
- Institutions (in many countries) that protect individuals from abuse of power.
- Great personal freedom in many countries.

Weaknesses:

- Widespread suspicion of government. This limits our capacity to collectively address our weaknesses and threats, and seize our opportunities.
- Limited and declining appreciation of the value of democratic governance and the protections of rights and freedoms.
- Widespread suspicion of experts, and misunderstanding of how science works. This limits our capacity to reach collective decisions about desirable strategies.
- Declining sense of community, and increasing disrespect for the views of others. Democracy depends on a shared sense of purpose.
- An ethical vacuum in which virtually nobody urges ethical behaviour.

Threats:

- Climate change.
- Increased inequality. This is bad for the economy but even worse for democracy.
- Possible severe economic contraction, perhaps due to climate change or resource constraints.
- New diseases.
- Social strife of any sort that can cause a backlash against both democracy and diversity.
- War resulting from either a failure to support international institutions, or the development of new military technology, or possibly the abuse of genetic engineering.
- Note that every crisis presents an opportunity for bad policy decisions whether through desperation or self-interest of policy-makers.

Opportunities:

- Feasible strategies to not only address all of our threats and weaknesses but achieve desirable futures.
- Every crisis presents an opportunity for introducing positive change.
- Improved democratic decision-making can better address all other weaknesses and threats.
- We can reinvigorate an ethical core of values.
- Enhanced mutual respect between experts and citizens allows us to better address our challenges.

6

ACHIEVING DESIRABLE FUTURES

6.1 Guidelines for advocacy

Readers will hopefully have appreciated at least some of the strategies that we have outlined in preceding chapters for guiding society toward desirable futures. Ideally, readers will be motivated to support such strategies. The question then arises of how individuals can work toward the achievement of such strategies.

Strategies for advocating public policy or societal change are still strategies, and should follow guidelines for strategies such as those outlined in section 3.1. To avoid confusion with the strategies that we have outlined in preceding chapters, we will refer to "strategies for advocacy" as "approaches to advocacy" or just "approaches" in what follows. We will want to evaluate approaches to advocacy in terms of the five criteria for evaluation we applied in both chapters 2 and 3. We will want to ask whether we can achieve broad support across people that rely on each of the five types of evaluation for both the strategies we recommend and the approaches we pursue to advocate for these.

We must in particular urge honesty in our acts of persuasion. Since honesty is one of our societal goals, we must pursue this goal while seeking broader societal change. In any case, we want public support that will last, and this is unlikely if we lie to people in order to gain their support.

This approach may strike some as hopelessly naïve. Politics is a cruel game filled with selfish and cunning operators (but not exclusively). It may seem that we have to roll in the mud in order to get anything accomplished. Yet are we really likely to create institutions that encourage honest government by exercising duplicity? Alternatively, is it better to create social pressure such that even scuzzy politicians see advantages in supporting enlightened policies? In deciding how to act we must be wary of the great human capacity for self-deception. It is easy to say "I'll just tell

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this one lie, or take that one bribe, or make one inappropriate promise, in order to get elected, and then I'll do good work." It is quite easy to then repeat this rationalization for temptation after temptation and never quite get around to doing heaps of good. The simple fact is that "The ends justify the means" arguments are dangerous and invite a slippery slope where we slide ever further away from our goals.

We have suggested in earlier chapters an array of policies that would clean up our decision-making processes. We will want to push for these. We will also want to act in accord with these as we advocate: If we believe in citizens' assemblies then we should encourage conversations among diverse people. If we believe in referenda then we should perform broad surveys.

We should also stress a couple of additional criteria that we mentioned in chapter 3. When we speak of advocacy, we are speaking of urging society in particular directions. We should have our goals clearly in mind and take reasonable steps toward achieving them. We should be humble, and thus willing to take small steps or experiment if possible. However, we should be willing to build public support for bold initiatives where small steps are infeasible. We should appreciate that perfection is generally beyond our grasp, but that "much better" is often possible.

This chapter is organized topically rather than chronologically. That is, we do not describe a set of sequential steps in advocacy. Our customary integrative exercise at the end of this chapter will discuss how we can move between various advocacy tasks through time.

GUIDING QUESTIONS

Does an approach to advocacy have the potential for broad support? Does it accord with each of the five guidelines for evaluation? Is it honest? Can it proceed in small steps? Can it be pursued within institutions that encourage desired behaviour?

6.2 Gaining public support for strategies

Surveys consistently show that support for social programmes falls dramatically if the word "welfare" is used rather than "helping the poor." This simple example shows that the way we frame a strategy can have a huge impact on public attitudes toward it.

We have urged approaches to advocacy that accord with each of the five types of evaluation outlined in chapter 2. This will allow us to gain public support for these approaches from people who will evaluate our approaches in quite different ways. We need then to "frame" our arguments in a way that will appeal to each mode of evaluation.

It is particularly notable that different ideologies tend to be grounded in different types of evaluation:

- Conservatives are more open to strategies and approaches that show respect for society's traditions.
- Libertarians and classical liberals are more open to strategies and approaches that respect certain rules (especially rights) that they hold dear.
- All are likely open to arguments about consequences, but especially those who self-describe as moderate, progressive, or liberal.
- Social democrats and those who self-describe as very progressive are often driven by values such as caring or social responsibility. Environmentalists are guided by a mix of arguments about consequences and appeals to the value of nature.
- Populists often appeal to people's gut instincts. Though we may at times fear the success of populists in appealing to people's worst instincts, we can applaud and recognize the fact that it is important for people to feel emotionally attached to strategies and approaches.

We should stress that public support is important not just in the process of pursuing a strategy, but later also after the strategy is implemented. We have emphasized many times in this book that we need institutions that accord with values. Institutions that are broadly supported before the fact are much more likely to work in practice. Institutions put in place by a slim majority (or minority) will fight to prove themselves and may never function as well as they might.

In framing our arguments we should emphasize that our strategies are both *desirable* and *feasible.* In doing so, we should be aware of both people's dreams and fears. We need to appeal to their hopes for the future, without unnecessarily triggering anxiety. People want a healthy environment but also want jobs, and environmental policy needs to be framed in a way that allows for both.

In addition to our emphasis on "framing," we would also stress that the act of persuasion is inherently a creative act. Even those who are most guided by arguments from consequences may be more persuaded by a telling anecdote than a dry theoretical discourse. Those guided by emotion or values are even more likely to be persuaded by real-life examples. Neuroscientists have indeed demonstrated that people react more powerfully to a narrative than to the logical presentation of the same argument.

We should stress that we can potentially tell stories both about how a certain strategy might make life better, and about how inaction may make life worse. We have in this book argued that various strategies can have a range of good consequences. We have also identified a set of troubling trends and worrisome surprises. We should not stoop to scaring people unduly but we should feel free to warn them of possible bad outcomes should we not act constructively. Sadly, people may be more easily motivated to avoid a bad future than inspired to create a better one.

We discussed creative processes in chapter 3. We can prepare ourselves for creative persuasion by reflecting on how a particular strategy or approach might appeal to each of the five types of evaluation. We can then evaluate any creative inspiration we might have in terms of how different types of people are likely to perceive a particular act of persuasion. It is a good idea to try our ideas out on small groups first, for people will often surprise us with how they react to our ideas.

Creativity, we might stress, is no excuse for dishonesty. Our creative efforts at persuasion should not mislead. Our anecdotes should not be wildly atypical. Our stories should be plausible. If we use diagrams or pictures, these should be realistic.

An example of creative framing may be helpful here. We have argued in favour of carbon taxes in chapter 3, but noted that one key objection to these is that many people simply do not like taxes. Savvy politicians thus often speak of a "carbon price" or "pollution price." This is exactly the same thing as a carbon tax – and thus has exactly the same consequences in the real world – but it sounds far nicer. This is a very honest phrasing because in fact what a carbon tax sets out to do is put a price on carbon emissions. Emissions are what is known as an "externality" in economics – a cost that is imposed but is not priced by markets. The general economist recommendation in such cases is to estimate the cost and impose a price. The idea of a "carbon price" reflects the simple fact that in imposing a carbon tax we are pursuing a market-based solution. The idea of a "carbon price" is thus more appealing than a "carbon tax" to those many citizens who believe that market outcomes are generally better than government intervention. There is a long tradition across societies of people grumbling about taxes but accepting market prices (except when these rise suddenly), and thus the idea of a "carbon price" has a better intuitive feel for many than the idea of a "carbon tax." Moreover, a "carbon price" also fits better with a societal value that individuals or firms should pay for the costs they impose on others. This point was brought home to me while door-knocking in a political campaign years ago when one citizen argued that it should not be a "carbon tax" but a "carbon fine." That latter phrase may itself have some utility in certain circles, for it also communicates the idea that firms or individuals do something that society views negatively. In any case, I was struck immediately and powerfully by the recognition that a change in semantics could lead to a change in voter behaviour. [There is a useful class conversation here about whether a "carbon price" is more attractive than a "carbon tax," even if you recognize that they are the same thing.]

Note that the idea that a "carbon price" is the market solution for addressing climate change serves to signal the key point made in chapter 3: that a carbon tax is the lowest-cost way of addressing climate change because it provides incentives for both firms and consumers to seek low-cost ways of reducing carbon emissions. The idea of a carbon price might then be supplemented by some narratives about how firms and consumers might respond, plus narratives of the alternative of the government forcing us all to act in the same way. I might respond to increases in fuel prices by walking to the store more often, but we do not want to tell others that they have to do the same.

Let me provide another example with even wider applicability. A development economist once asked what you do in a situation where there is a child dying of thirst in a desert but you have only a leaky bucket with which to carry water to the child. What do you do? The answer depends, of course, on how leaky the bucket is. If there is still enough water in the bucket to save the child, then the fact that the bucket leaks should not dissuade you from saving the child. It is a simple tale with a powerful message. The unfortunate truth is that we live in a world of leaky buckets. We cannot encourage technological innovation without some money being wasted on things that firms would have done anyway and other money being spent on foolish investigations. We cannot create any programme to help the less fortunate that will not encourage some to be lazy and others to try to cheat the system. We cannot, indeed, create any government programme that does not contain within it opportunities for abuse or waste.

The "leaky bucket" story is a powerful antidote to those who would pounce on any example of abuse or waste as an excuse for shutting down the programme in question. We should, to be sure, evaluate every programme carefully to make sure that the benefits justify the costs: that enough water gets to the thirsty child to justify the trip. Moreover, we should try constantly to mend the bucket so that ever more water gets through to the thirsty child. Last but not least, we need to advertise the success stories of people given a helping hand that succeeded in rising out of poverty, or of subsidized research programmes that yielded important innovations. We need, that is, to highlight what happens when the water gets to the thirsty child.

We live in an imperfect world. We do not cast off our children when they fail a test or let in an easy goal – or even fail to do their chores as readily as they might. We do not toss away our cell phones at the first sign that service is somewhat less than perfect. We do not give up on automobiles at the first sign of an unexpected repair. We accept (sometimes grudgingly) imperfection in all aspects of our lives. We may strive to reduce the imperfections we face but we do not give up on life because of them. We should carry the same constructive attitude into evaluating government programmes. We should not abandon the thirsty child because of a small leak in the bucket.

The leaky bucket analogy can potentially gain intuitive support for necessarily imperfect government policies. It also signals the need to carefully balance values and beliefs around caring with those around financial prudence and responsibility. It reminds us that a programme will have diverse consequences – some good and some bad – that need to be evaluated comprehensively.

BOX 6.1: HOW PEOPLE MAKE DECISIONS

Daniel Kahneman's *Thinking, Fast and Slow* (Farrar, Straus and Giroux, 2011) summarizes decades of research by him and many others on how humans make decisions. The key lesson is that we often make decisions impulsively but

like to believe that we make them rationally. We at times devote effort to rationalizing decisions that we have already made. Yet our impulsive decision-making is not rational, but relies heavily on associations that our mind can draw effortlessly. (Familiarity with Kahneman's key points can aid in the pursuit of self-knowledge advocated in chapters 2 and 3.) It is useful for those who wish to persuade to recognize how decisions are actually made:

- The more often we hear a message, the more likely we are to believe it, because it easy for our memories to access it. Repetition is thus critical.
- Communicating in simple language aids memory. Rhyming is also useful. Sadly, sources whose names are easy to pronounce are more likely to be remembered (call me Rick!) Simple things like font size and colour of messages can be important.
- Humans "anchor" decisions around any number that is handy. For example, if you want people to reflect on the appropriate level for a basic income, you will get higher answers if you first suggest a large number.
- Rather than thinking consciously about probabilities, we are guided by how readily we can access relevant memories. We thus are more likely to buy insurance after the experience of a disaster. (And if we do not know anyone with COVID-19 we think we are safe?) Note that we only prepare for disasters that we are familiar with, and thus have to try hard to get our minds around novel threats like bioterrorism or climate change. It can at times be useful to encourage people to search for certain memories or ideas: If your instructor asks you to think of ways to improve the course, and you have trouble doing so, you are likely to rate the course more highly. Engaging people in conversations about how we might improve government programmes may then improve their opinion of those programmes.
- Providing detailed scenarios will make those scenarios seem more likely because we are able to identify with different elements of the scenario. That is, we do not evaluate the likelihood of the scenario as a whole but evaluate whether any part of it resonates with us.
- People only rarely change their minds because of detailed statistical evidence but are more likely to react to a surprising anecdote. (We may be able to change stereotypes about recipients of social assistance by sharing their stories.)
- Sadly, humans are persuaded by certainty in others. This complicates our task, for we have recognized that it is difficult to predict the future or the precise outcomes of any policy innovation. We need to encourage people to grapple with uncertainty.
- Humans seek to avoid feelings of regret, and thus avoid change even when there are sound arguments for change.

- When faced with a question that is hard to answer (should I vote for X?) we will intuitively substitute an easier question (do I like the look of X?) which is easier to answer intuitively. It is useful then to focus our persuasive efforts on aspects of our policies that are easily addressed.
- We tend to fear losses more than we value gains, and are thus hesitant to change. (This is one reason that the potential losers from any policy change tend to lobby harder than the potential winners.) One key lesson for persuasion is that people will view a choice quite differently if framed in terms of gains rather than losses.

Perhaps the biggest lesson is that people don't like having to think consciously about decisions that they have reached intuitively. We need thus to make the act of persuasion interesting to overcome the natural resistance to it.

Note that intuitive decision-making works fairly well in familiar situations: We will gradually learn in life how to cope with many circumstances that we face repeatedly. But intuition can be a poor guide in novel situations: We will seize on any elements of continuity and be more confident that we know how to act than we should be. Yet we live in a changing world and must thus try to guide our actions rationally as much as possible. Though it can be disheartening to recognize that rational decision-making plays less of a role in human affairs than we might wish, we should also recognize an opportunity: We are capable of much better decisions if we can somehow change our values and institutions to encourage rational decisions.

6.3 Taking a staged approach

In earlier chapters, we have often urged a gradual testing of the waters with new strategies. Humans are fallible, after all, and despite our best efforts to evaluate side effects beforehand, it is hard to accurately predict the effects of any policy in advance. Where possible, then, we should experiment first and carefully evaluate the results. If a policy seems like a good idea when it is first tried, we can expect to gain broader support for pushing ahead – especially from those guided by prudence or respect for traditions, but also from those who carefully consider consequences. At the same time, we can come to appreciate which aspects of the policy work best and which are problematic. By taking a staged approach we are also better able to tweak our policies to reflect changes in the world around us. We should not run in fear at the first sign of difficulty, but carefully evaluate whether and how difficulties can be overcome. We can then push ahead with a revised policy. This also we will want to evaluate carefully over time.

If we can reinvigorate society's confidence in our ability to identify promising strategies through open discourse, then society should become more willing to

experiment. We will have to act to convince society that we are capable of dispassionately evaluating the results of an experiment. In particular, we must commit to shutting down an initiative that seems more problematic than it is worth. This is no easy commitment to make, for even a failed experiment will likely generate some winners – and some bureaucrats with a personal investment in the programme – who may fight vociferously to see the experiment continued. There may then be some unavoidable bias toward continuing to build upon experiments. If so, then society may be understandably sceptical of new ideas. That would be a shame. If we are going to try a staged approach, we should devote some thought to how we might accept and act upon evidence that our entire strategy was a bad idea. (Recall here that we should ideally be guided by humility.) More positively, we should also be honest about how we would intend to build upon a successful experiment with further initiatives that would institutionalize our strategy.

We have urged the pursuit of broad public support. Yet we can appreciate that support can build once an idea is implemented. This is one great advantage of a gradualist approach. No idea is so wonderful that some people cannot reasonably doubt its feasibility or desirability. An effective experiment can sway many minds. The full-scale implementation of a strategy may convince almost everybody over time. Public education was once a topic of passionate political debate but is now almost universally taken for granted in developed countries.

There have been small basic income experiments in several countries. These are very useful in documenting how recipients respond to a basic income. They are less useful in telling us what other programmes we might be able to discontinue. Most of them have been brief experiments and thus have left questions unanswered about how people might respond over a longer time frame. At some point, some government will need to pilot a much broader implementation.

6.4 Networking

We can only hope to gain broad public support for novel strategies by reaching out to people. There is, to be sure, the possibility of swaying a large audience with a persuasive speech or film or book. Yet social movements almost necessarily build slowly, one person at a time. People will often not be convinced the first time they hear an idea, and so it is necessary to engage them in a continued conversation. We should be particularly interested in reaching across social boundaries, and in reaching out to people who pursue different evaluative strategies. Broad public support can only be achieved by talking to people with quite different backgrounds and with quite different ways of thinking about the world.

These conversations will be useful beyond their role in building support. They will force us to clarify our ideas. It is very much true that one never understands an idea better than when one tries to explain it to another. The critiques or concerns of others then force us to further clarify our thinking. As we have said before, you only fully understand an idea when you understand opposing arguments. We will

likely have to tweak our original thinking in order to meet the concerns of others. This is all good.

We will tweak both our strategies and our approaches to advocating them. We will find that different communicative approaches work with different audiences. We want to develop a coherent communications approach with components that work for these different audiences. Coherence is critical lest we be accused of saying different things to different people. Yet diversity is likewise critical for achieving broad public support.

We can aspire to an ever-expanding network. Some of those we persuade will in turn wish to persuade others. A variety of skills is necessary here. Some people are good at fleshing out the details of a strategy. Some are good at organizing meetings. Some are good at persuasion. Some are good at listening. Some ooze the enthusiasm that fires others to press ahead. Some are good at empowering others to pursue the shared vision.

BOX 6.2: REFLECT ON YOUR STRENGTHS

The reader can usefully reflect on what their strengths are, and what they could contribute to the pursuit of some societal goal. One key point to stress here is that we can all contribute in some way. A second point to stress is that even if we work behind the scenes we need to be well aware of the arguments for and against the ideas we are pursuing. Otherwise, we might easily be led astray. Third, we should appreciate that humans become good at things through practice. You might shy away from the act of persuasion at first but find that you get good at this through time.

Note that networking has the added advantage of creating a sense of community, since we wish to draw people from various societal groups. Our shared interest in pursuing a particular societal goal forges a bond that transcends ethnic or religious or other sorts of difference. Network theorists often talk about "weak links": people that serve to connect two groups that were previously unconnected. The link need not be strong in order to be important, for it allows ideas to flow between groups. In networking, it is critical to identify people who can carry ideas to new groups. Over time, we can strive for conversations that involve members of diverse groups.

6.5 Leadership

Networks are wonderful, but even the most collaborative network requires leadership. The form of leadership that is called for may be obvious by now, but deserves to be clearly stated. We want a leader (or leaders) that is respectful of group members, open to dialogue with diverse interests and perspectives, and willing to pursue

collaborative decision-making and the pursuit of common ground. Yet we want a leader that knows how to get things done, who can identify necessary tasks, and encourage the right people to take on these tasks. It is quite possible to be both effective and collaborative, but it requires a leader who is a good communicator and earns the trust of participants. Humility may be a particularly valuable quality. There is evidence that the best decisions are made by people who appreciate that they might be wrong. Leaders must in particular be very clear in communicating how decisions are made and how tasks are undertaken.

It is important for us to have this full list of attributes in mind as we choose (or groom) leaders, or as we prepare ourselves for leadership positions. In practice we often judge others on the basis of one or two attributes (She is forceful, I'll vote for her). There is then a "halo" effect such that we attribute all sorts of good qualities to those we have chosen. But leaders who are determined but do not listen to others can be disastrous, as can leaders who are collaborative but indecisive. We must strive to evaluate each characteristic of potential or actual leaders. We are then better prepared to choose, and also better prepared to cope with flawed leaders when these are chosen.

The leader must articulate a vision that others can strive toward. This vision must be compelling enough to motivate others. It must seem both worthwhile and feasible. It must be a vision that many can pursue together. The vision should reflect a clear understanding of both desirable and plausible futures. The vision must be both flexible and concrete: We want to be able to react to circumstances but we want to know what we are working for. Some may prefer a vague vision that fires the imagination but is weak on detail, but such an approach opens the door to demagoguery. A good leader is as clear as possible about what they are hoping to achieve. Yet they must recognize that persuasion is a creative act (see above) and communicate the vision in a compelling manner.

The ideal leader has charisma but does not abuse the power that charisma carries. The ideal leader is a dreamer but capable of sensible action toward clear goals. They handle challenges but keep their eye on long-term goals rather than just stumbling between crises. The ideal leader is persuasive but listens to others and incorporates their ideas. The ideal leader wears power lightly: They inspire loyalty and thus need not inspire fear. The ideal leader avoids displays of arrogance, but exudes confidence. The ideal leader tries to keep group members happy and motivated, but recognizes that hard decisions need sometimes to be made that will discomfit some of them. This may seem like a lot to ask, but a leader that wants to be all these things can become very good at all of them. Those being led should insist on nothing less.

We have spoken here of the qualities we would like in the leader of an advocacy group or network. We would hope for similar qualities in politicians and senior bureaucrats. These should strive to listen to all sides, respect all points of view, and advocate policies that serve the broadest public interest. We need to reform our institutions, values, and perhaps especially our voting and hiring practices in order to encourage such a result.

6.6 Strategic planning

Say you are part of an organization dedicated to one or more societal goals. That organization then needs to engage in what is called "strategic planning." Individual activists should also engage in strategic planning of their own advocacy if they hope to succeed. The plan should, of course, be flexible, for we have seen that the world will change, and we must be ready to react to that change. Yet change is no excuse for a failure to plan. Indeed we have seen in chapter 5 that we should be ready to respond to surprises with proposals for beneficial change. We thus need to plan how we will react to change.

Many organizations devote too little effort to strategic planning. The result is often that they later bemoan not having taken certain steps much earlier. They may particularly wish that they had attracted the talent, or made the connections, needed for later steps. Yet some organizations get too compulsive about planning and lose valuable energy in the process. It is important that an organization knows where it is going, but also that it goes. Planning may then best be seen as an organic activity in which the organization starts with a skeletal plan and fleshes this out as it is active in the world.

I should confess here that I have been forced to endure far too many strategic planning exercises in my life. I will not on my deathbed wish that I had done more planning. Yet I have nevertheless come to appreciate that a moderate amount of planning can be a very good thing. Moreover, I have come to appreciate – slowly but surely – that I am by nature a results-oriented person. I identify a goal and figure out how to get there. The world also possesses a lot of process-oriented people who focus on getting the right process in place, and let that process guide decisions. Those people have, I must confess, often really annoyed me – but their approach is as valuable as my own. A good strategic planning exercise articulates both the goals and the process, and does not exhaust too much of the organization's time and energy.

One purpose of this book has been to suggest possible strategies for achieving a range of societal goals. Organizations should identify the strategies that they want to pursue (but remain open to new ideas), and the approaches to advocacy that support these. Organizations should explore a wide range of options before prioritizing certain approaches. They should within any approach identify a set of sub-goals and then seek to measure their success in achieving these. These should include measures of outreach (how many they have communicated with) and success in convincing others of the value of a particular strategy. The strategic plan should address how the organization will respond to both particular surprises and surprises in general. Though the time frame for social action is necessarily unpredictable, the strategic plan should at least speculate on when certain sub-goals should be reached: How fast can we expect to communicate ideas to the public, and how readily do we hope that these will gain some traction? The organization should be prepared to change approaches if they are not achieving sub-goals.

The organization should also strive to identify the skills that are necessary to pursue its chosen approaches to advocacy. Who within the organization has particular skills? What skills do they need to hire or gain through collaboration with other organizations? What are the organization's core competencies? (This is an old buzzword from the management literature, but one with some intellectual content.) For individuals it is useful to think about what they are good at, or might become good at, and thus how they might best contribute. I would make an important point here that neither organizations nor individuals should underestimate our capacity to learn: We can learn to be more creative, we can learn to be better public speakers, we can learn to schmooze, and we can learn many other things. Indeed, we can get better at almost anything by just practising it a lot. Yet that should not stop us from bringing in particular expertise when we need it.

It is useful to engage in a mapping exercise. We should identify how our subgoals are related, who will pursue each goal, how these individuals will interact, and what key players outside the organization need to be involved. While the organization may focus on particular goals, it should map how its strategies might affect other goals and then seek to maximize positive or minimize negative effects on other goals. A good flowchart(s) can encapsulate much that is critical in a strategic plan. The exercise of drawing it will often expose connections that had not previously been contemplated.

6.7 Engage in and encourage scenario planning

Our strategic planning should, of course, be future-oriented. We need, that is, to recognize plausible futures and plan how to grapple with these. Futurists emphasize what they call "scenario planning," exercises in which organizations gather diverse groups (ideally from both within and beyond the organization) to identify a set of plausible scenarios, and plot organizational strategies for dealing with these. Such efforts could be informed by (especially) chapters 4 and 5 in this book, but will likely emphasize particular trends or surprises of particular salience to the organization in question. The national park service will imagine different scenarios than the post office, though neither should lose sight of the bigger picture outlined in this book.

We are at an interesting point in the history of scenario planning. A few decades ago, this was the province of "gurus," a small number of management consultants who were very secretive about the methods they employed. There is now a much broader community of people who guide organizations through scenario planning exercises, and many published works that describe scenario planning. There is consensus on some elements of scenario planning, but nevertheless still several distinct processes pursued by different groups of advisers. There has been almost no effort to develop objective standards by which different approaches might be evaluated. There has been some take-up by government departments but there is still a lot of bureaucratic resistance: Bureaucrats worry that they cede influence to outsiders when they engage in such an initiative. When government departments do engage in scenario planning, they only rarely include representatives of the public they serve.

It is odd that scenario planning is not more common. For humans are natural scenario planners: What we commonly refer to as "daydreaming" involves us imagining detailed futures that follow from some decision or event. Daydreaming may seem a casual practice but actually involves a fair bit of mental activity. We would not spend so much time and effort daydreaming unless we found that it was useful to imagine plausible or desirable futures in some detail. We should thus see the potential advantage of harnessing our natural skills at imagining futures to a more formal and collaborative process.

Organizations that engage in scenario planning can be more nimble in adapting to our changing world. Scenario planning, if properly executed, exposes biases and limitations in the way the organization has framed certain issues, and forces the organization to think about challenges that it had previously ignored. Scenario planning will often bring concerns that are held by only some members of the organization to the attention of others. Organizations can be ready with policy proposals and other initiatives when the world changes in a direction they had collectively imagined. Organizations can prepare to not just survive but prosper in plausible futures. If organizations pull outsiders from government and business into their scenario planning exercises (or convince them to pursue their own such exercises), they prepare these agents also to build a better future. It is invaluable for policy-makers to contemplate how their policies will work in different scenarios. (A scenario planning exercise that involved people from different government departments might encourage greater policy collaboration.)

We mentioned the word "diverse" above. This may be the most common piece of advice in the scenario planning literature. We want, after all, to make sure that we do not omit important trends or surprises from our scenario planning. Inviting a group with different jobs, educations, and life experiences is our best assurance that we will capture (most) key elements of plausible futures. (There is, we might note, empirical evidence for the "wisdom of crowds": Groups of diverse people give better predictions in many fields than individuals.) Diversity also aids us in imagining desirable futures that are broadly attractive. Having gathered this group together, it is then essential that they all feel comfortable expressing their views. This requires that those in leadership positions in the organization make it clear that they want the widest range of input. The scenario planning exercise should avoid "groupthink," a tendency of groups to coalesce quickly around some key ideas and not subject these to sufficient scrutiny. It may be advisable to ask participants to write down their thoughts at the outset, before conformity of opinion is induced by group discourse. There is an unfortunate tendency for groups to focus on the information they all share rather than actively seeking out the insights that only some members of the group possess.

In our discussion of systems theory in chapter 3, we recognized the importance of negative feedback loops that generate stability. Organizational stability may rest on certain beliefs that guide members of the organization to behave in a predictable fashion. Preparing for the future requires people to break free from such unexamined beliefs. Individuals and groups need to grapple with their biases. They need to

ask who benefits from particular scenarios, and seek fairer outcomes. This is most likely to occur when diverse individuals feel free to express their concerns. People from outside the organization may prove invaluable in identifying biases in the organization's pattern of thought.

A successful scenario planning exercise will explore unquestioned assumptions. It will bring concerns that are at present subconscious into the open. It will integrate concerns felt by different members of the group, showing how these might interact. It will consider a broader range of strategies and approaches than the organization currently countenances. It will likely involve concerns raised by outsiders that were previously unheard within the organization. Not surprisingly, both diagrams and narratives are crucial in fleshing out scenarios. Groups working together in a diagramming exercise can clarify how different trends or surprises may interact.

Scenario planning, like any skill, improves with practice. Organizations should not be overwhelmed by the diversity of practices in the scenario planning literature. They can recognize that choosing the right group may be the most important step. They can then focus on making people feel comfortable. Collective diagramming is a practice that both generates ideas and encourages group interaction. A common though not universal practice is to develop one good scenario, one bad scenario, and one weird scenario.

6.8 Dealing with entrenched interests

We have sought to identify in this book a wide range of strategies that can potentially appeal to a sizeable majority of the population. Yet we should not be naïve: Any change in policy will annoy some minority who may fight tenaciously against change. What do we do when the rich fight higher taxes, politicians refuse to give up power, and bureaucrats cling to unnecessary programmes?

We speak truth to power.

Nothing can stop a good argument. We need to carefully articulate arguments for change. We need to construct a simple but persuasive message for most voters, but provide greater detail on our favoured strategy for those who wish to dig deeper.

Good arguments may be unstoppable but can be delayed. We need, then, to:

- Restore faith in our collective ability to evaluate arguments and evidence. We must collectively appreciate that the powerful benefit most from an environment of uncritical followership, or in which we shower disdain on anyone we disagree with. In such an environment there is little to prevent the exercise of power for its own sake.
- Develop our ideas. We suggested earlier that we might want to fund political advocacy. The argument here is simple: The rich and powerful can very easily get their self-interested message out. It is harder for the mass of voters to mobilize. However, if we could each devote a few dollars to political advocacy on our tax return, we could change the balance of power.

- Vote. Get involved in candidate selection processes (primaries, nomination meetings). Run.
- Demonstrate peacefully. Make a party of it. Social change can be fun. Note, though, that demonstrations are most useful when the policy aims of the demonstrators are clearly articulated.

How do we get politicians to enact institutions that limit their own power? We need to have clear ideas of desirable institutions, for politicians can easily mislead us with vague commitments to pursue vaguely articulated goals. The task is not easy. Yet we can be heartened that such institutions have been put in place in the past. Indeed, one of the lessons of history is that the powerful often put in place institutions that have the unanticipated effect of decreasing their power over time. The trick is to convince politicians that it is in their own electoral interest to reduce their own power – or to catch a politician who is trying to leave a legacy before retirement.

We may pursue a slightly different strategy with those who hold economic power. History tells us that the rich do not usually abandon sources of wealth without a fight. Yet while slave owners and feudal lords sometimes lost their control over others through military action, in most countries (and some states in the United States) they gave up these rights in return for financial compensation. This result did not just happen one day but came after decades or more of global agitation. We can imagine a similar strategy with oil companies, where we combine international pressure to address climate change with a mix of carbon taxes and incentives for technological innovation that allow them to save the planet without going bankrupt overnight. President Eisenhower warned us decades ago of a military-industrial complex that has a powerful financial incentive against having global peace break out. We might find peace much easier to achieve if we can find civilian uses for their technologies. Those who earn undeserved income should be guided to apply their cleverness toward other more deserving pursuits. As Sun Tzu advised millennia ago, the best victory is that which is won without a fight. We should be prepared to fight special interests when necessary but also to recognize when we can achieve our goals collaboratively. (Recall that this is one of the key insights of systems analysis: Try to get diverse agents pushing in the desired direction.)

We should recognize here that many NGOs pressure corporations to pursue policies that respect both workers and the environment. NGOs are willing to embarrass companies with bad records and congratulate those that meet certain targets. (One challenge at present is that different NGOs have different targets; this makes it hard for companies even to report outcomes for all, much less hit all targets.) There are also many investment funds that refuse to invest in firms that fail to meet certain standards. These efforts can only be successful if consumers or investors prove willing to punish companies with bad records. Companies suffer

with every consumer that turns away. Ethical investment creates a greater challenge, for unethical investors may simply replace ethical investors.

We need to know which battles to fight. I have mentioned previously that conspiracy theories are attractive in part because they provide a simple explanation for a complex reality. They are thus dangerous because they distract our attention from the need to carefully strategize our collective future. Yet while the idea of one giant global conspiracy is preposterous, the idea of innumerable small conspiracies is common sense. Businesses sometimes collude. Politicians do favours for supporters. Some politicians and bureaucrats take bribes. Some politicians exert pressure on courts and police. We need to not tilt at windmills but seek out real conspiracies and bring both legal penalties and public embarrassment to bear upon them.

6.9 Act locally

The tasks of launching or even participating in national or global movements for change may seem daunting. It is important to recognize that there is much that can be done at the local level. Every local natural environment is unique, and care must be taken to ensure that humans are living in harmony with nature. Urban environments require special care, and humans benefit from natural spaces, attractive cityscapes, and (likely) local food production. Local groups can monitor the behaviour of local companies and governments and pressure these to behave in socially desirable ways. Local mutual-aid societies cannot replace social programmes but can fill niches that large social programmes miss and investigate innovative ways in which we can help each other. Some social issues such as homelessness must be addressed by local commitments and initiatives. Local public works programmes need to be carefully managed to achieve important and visible societal goals; there is much scope for collaboration between local governments and community groups in identifying useful tasks for the unemployed to perform. Social entrepreneurs have considerable scope for producing valuable goods and services in a manner that treats consumers, workers, and nature with respect.

Technology may facilitate local initiatives. Some futurists are excited by the possibility that innovations such as 3D printing, open-source designs, and modular construction make it easier for community groups to design and build facilities and equipment. Others note the possibilities for local communities to develop renewable energy systems.

Recall that we want to be creative in building our future. Local pioneers can experiment with a range of practices that might then be borrowed by other communities or scaled up into national or international programmes. As mentioned when we discussed urban planning in chapter 3, it is critical that local communities be innovative, but also that they network and learn from each other. These networks can function simultaneously to share knowledge of local initiatives and to lobby nationally and internationally for changes in policy that would support and build upon local efforts.

BOX 6.3: A GROUP CHARTER OR ACTION PLAN

In our final exercise, students are asked to imagine a group/organization that can pursue some societal goal. They can think local: a group to clean up a local park, perhaps. Or they can think global, but then they need to distinguish themselves in some way from existing groups or organizations. Students need to clearly articulate the group's goals. They should specify how the group is organized and how it will attract members. They should posit a timeline, and identify how the group will measure success. Is training required, and if so. how will it be provided? What sort of challenges will the group face and how will these be addressed? How will imaginative solutions be developed and pursued? What resources are necessary for the group to succeed? What sort of tasks might be assigned to particular group members, and how would these be evaluated and monitored?

See https://ctb.ku.edu/en/developing-strategic-and-action-plans for more detail.

6.10 Be prepared for failure

This book has argued at length that it is feasible to move toward desired futures. Nevertheless, we should not pretend that it is easy. Movements for social change do not usually succeed on the first attempt. There will be disappointments along the way as we combat ignorance, fear, and self-interest. These disappointments just make the quest more worthy and eventual successes sweeter.

It is a common mistake of the young to assume that successful people were always successful. However, paths to success are always littered with failure. Successful academics write some papers that are rejected or ignored. Successful entrepreneurs make some bad and costly business decisions along the way. Almost everyone butchers the occasional test, lets in an easy goal, and has bad dates. Successful people are those that bounce back from adversity. They learn from their failures and keep pursuing their goals.

The combination of good ideas and good people is unbeatable. The only question is the time frame. This book has striven, among other things, to guide good people toward good ideas. It has urged the careful development of such ideas, and the creative articulation of these. Failures will often signal some flaw in either the idea or its advocacy. Seen in this light, failures are just a milestone on the path to success.

In particular, do not mind if your efforts are decried by the self-interested. This just means they are paying attention. You should speak truth to their self-interested claims, and strive to see dispassionately if there is some kernel of truth in their arguments. You should in particular search their arguments for avenues through

which they may accept at least some of your ideas. It may well be that they are angered mostly by some part of your proposal that can be amended at little cost to your overall goal.

Here is another life lesson: You never get a better chance to make your case than when you are being criticized by others. You say "X!" Someone else says "Not X!" Now you need just to poke holes in "Not X!" and your case seems stronger. It is almost always easier to point to weaknesses in the arguments of others than to buttress your own. To be sure, it is psychologically challenging to hold your ground when under attack – especially in a world of polarization and narrowmindedness – but carefully responding to attacks can win you respect from those who disagree with you. This may not be obvious at first, but you can wear them down over time. So avoid the human tendency to shrink from attack and instead celebrate the opportunity that this provides. After all, the worse thing for social advocacy is to be ignored. If others will do you the favour of giving you some publicity, make the most of it. (And don't be so focused on winning that you miss the opportunity to take on board the good parts of your detractors' arguments.)

6.11 Believe in progress

Though we must prepare for failure, we must nevertheless believe in progress. We must believe that good things do happen, especially when people of goodwill strive selflessly and tirelessly toward valuable goals. If we do not believe in progress, we will lack the determination to fight for change. We will be unable to transcend the inevitable disappointments, and will give up too easily.

The best reason to believe such a thing is that there has been a lot of progress in human history. It is too easy to dwell on the negative. We raised real concerns about the future in chapters 4 and 5. Yet we held out hope for a better future. Across the entire sweep of human history there have been many setbacks, but despite these, there has been a general process of improvement in many aspects of human life.

We have in preceding chapters worried that many treatments of the future emphasize just one change agent. We can raise a similar concern here about treatments of human progress in the past. It is all too easy to focus on changes in per capita incomes and decide that we are much better off than we were a century ago. It is likewise easy to focus on the health of our natural environment and conclude that we are worse off. We will gain a better appreciation of human progress if we extend our gaze widely across the different categories of phenomena that we have engaged in this book:

- **Genes.** Though human genes may not have changed much in historical time, there has been an improvement in our actualization of inherent human capabilities through improvements in health and especially nutrition. Moreover, we now appreciate that maternal health shapes human capabilities in significant ways. Our genes may have changed little, but hormones in healthy mothers activate these in better ways.

- **Psychology.** Contemporary studies of happiness suggest that the satisfaction of basic needs for food and shelter, health, and security are important contributors to happiness. It is not clear, though, that economic growth beyond fairly low levels has much effect on happiness. We can identify progress in happiness over the last millennia as average incomes slowly increased but perhaps not in the most recent decades in rich countries.
- We can also identify progress regarding various individual-level phenomena: psychological understanding, freedom of choice, respect for diversity, and perhaps decreased anxiety levels – but regress concerning occupational over-specialization and the incidence of depression. Average scores on intelligence tests have risen in the last half-century by some 20 per cent in developed countries, reflecting improvements in nutrition, maternal health, and perhaps reduced lead levels in the environment.
- **Politics.** Though there has been backsliding in the most recent decade, there is in much of the world more freedom – religious, political, and occupational – than ever before. There is also more justice: limits on state power, courts that are independent, and so on. Most people would view democracy as superior to other forms of governance, albeit often frustrating in action. One can identify improvements in a range of more narrow institutions. There have certainly been dramatic improvements in both public infrastructure (such as sewers) and education in most countries. With respect to war, the record is mixed: The last century or so has witnessed the worst wars ever, but we may now be seeing a decline in the incidence and severity of war. Certainly, attitudes against war have hardened (perhaps too much in some instances).
- **Economy.** There has been dramatic growth in average incomes. Income distribution between countries worsened dramatically in the nineteenth century, but may now be improving. Income distributions within most countries have oscillated but have deteriorated in recent decades. The general tendency in history may be for income distributions to become more unequal, except during major shocks such as epidemics or the most severe wars. Leisure time has increased (though not recently). Work fulfilment has improved for some but not others. There have been improvements in some economic institutions, but evident weaknesses in others.
- **Art.** There has been increased artistic production, though this has become an increasingly specialized activity. It is not clear whether artistic quality has improved or declined. The total number of artistic inspirations has increased dramatically. Most people would view the contemporary diversity in artistic styles as a good thing. Nevertheless, we can worry that art has a less central role in modern society.
- **Social structure.** There is decreased gender stratification in most but not all countries. There has been a decrease in the importance of inherited status (though this trend is less visible in recent decades). It is harder to identify trends in ethnic or occupational stratification, though there are some signs of improvement.

- **Technology.** We have developed technologies that allow both increased leisure and a more extensive range of goods and services. There is nevertheless cause to worry about the environmental, military, or social implications of many of these technologies. There have been dramatic advances in our understandings of natural (and social) processes, though further research may alter many of these.
- **Population and health.** The population has grown – though this is not entirely a good thing. Life expectancy is much higher in most parts of the world than a century or two ago. Rates of child mortality, in particular, have fallen dramatically. Nutrition is better and diseases less virulent – though there is always the possibility of a new epidemic.
- **Culture.** Individuals can increasingly choose their cultural identity. However, sense of community (and shared stories) may be declining (though this may have a beneficial impact of reducing hostility between groups). Most people might applaud various cultural changes such as increased sexual freedom, support for ambition, curiosity, valuing romantic love, and religious freedom, but could reasonably worry that values such as honesty and responsibility are waning. Linguistic diversity is decreasing (though people disagree about the effects of this).
- **Environment.** Transport infrastructure has improved, as has the human ability to predict and cope with natural disasters (though increased population densities work against this). Climate change and biodiversity are definite areas of regress. More local types of pollution have fallen in many countries. Human experience of nature has declined.

The results are mixed, to be sure, with many examples of both progress and regress. Yet most people if given a choice would likely opt for life in the twenty-first century over life a hundred, a thousand, or ten thousand years ago. Some of the instances of progress recorded above may have just happened without much conscious effort. Most, though, have resulted from the deliberate efforts of humans to fashion a better world. We are then, beneficiaries of thousands of years of efforts to achieve progress, and should not doubt the human capacity to fashion an even better future.

6.12 Research that is needed

It is best to have as clear an idea as possible of the effects that a policy will have before it is introduced. It is also best to have a clear idea of the detailed form a policy should take before politicians and bureaucrats take charge of implementation. We will never achieve perfection in either regard and must be ready to evaluate, revise, and occasionally erase policies after implementation.

There is a role here for academics and NGOs to perform a great deal of practically oriented research. This will mean in many fields that more effort is focused in future on studying processes of change rather than forces of stability. There is a role for non-governmental agencies to develop clear policy proposals and assess their likely impact. Both academics and NGOs should interact with bureaucrats as they do so to get an appreciation of the challenges the latter face.

We also need research to identify future trends and surprises. Mathematical predictions are feasible in economics, demography, and a couple of other fields. Even in these fields, predictions decrease in reliability as we forecast farther into the future. In other areas, our best guide to the future is often interviews and surveys. The futurist needs also to read widely in the hopes of identifying emerging trends or novel types of surprises (this is called "scanning"). These various types of research need then to be *integrated*, for our best guide to the future will come from combining the insights of different disciplines, methods, and people.

We should appreciate that it is hard to evaluate the likely effect of novel policies. The Future Studies literature thus stresses some approaches that may allow us to better peer into the future. As we noted in box 3.7, the literature urges mathematical simulations whenever possible. These can be extremely useful, but care must be taken that the results produced are not driven by the assumptions incorporated by the modeller. An alternative approach is to structure an experiment or game that tries to mimic a proposed policy. The challenge here is that people may not take the game as seriously as they would the policy itself (economists sometimes test hypotheses with experiments in poor countries where participants will take small monetary payouts more seriously than the usual test subjects in rich countries do).

The Delphi technique relies on experts, and hopes that the collective wisdom of experts can guide policy evaluation. The challenge here is that experts may be biased. We can address this challenge by consulting experts from different disciplines and walks of life. There may still be a concern that the highly educated have a more general bias. We can counteract this bias too by including in the discussion those who might be affected by a policy.

We might make special note of historical research. Historians can aid in identifying trends that may extend into the future. Even more importantly, they can remind us of past historical transformations. We are less likely, then, to mindlessly extend trends into the future, but should instead appreciate that trends will interact and be transformed through time. Historians can remind us that history sometimes exhibits stability and at other times exhibits dramatic change, and that we should prepare for both. This book, I might recall, has been much informed by my *Making Sense of World History*.

We could know much more than we do about how people make political decisions. How can citizens be encouraged to actively participate in public discourse? How can we encourage citizens to carefully evaluate arguments and evidence? How can we reduce the appeal of demagogues and charlatans? How can we encourage mutual respect?

I might close with some personal observations on the present state of the human sciences. There is, I should first stress, a lot of great research that can usefully inform each of the strategies outlined in this book. Yet there is unfortunately also much work that is not well done, and where questionable assumptions drive simplistic results. Worse yet, there is research where the author clearly had their conclusion in mind at the outset, and picked their "data" to support their conclusions. There are some academics who doubt our very ability to do reasonable research, and urge us

to blatantly argue for congenial outcomes without worrying about the validity of argument or evidence (or to do research for the fun of it that is of no interest beyond some narrow academic clique). There is value in having *some* sceptics around who can warn us not to be too confident of our abilities, but we have noted previously in this book that we have no answer to autocrats if we collectively abandon the hope of identifying superior policies by carefully amassing argument and evidence. How, then, can we better encourage academics to do practical research that carefully amasses good arguments and evidence and thus usefully informs public policy? Increased interactions with bureaucrats and other policy-makers may be critical here in guiding academics away from game-playing and toward useful research. Interdisciplinarity is also quite useful in guiding academics away from reifying particular theories or methods and focusing instead on providing the most reliable possible answer to complex public policy questions. The recognition urged by this book that we can and should seek to identify strategies and policies with broad appeal should discourage ideological posturing.

BOX 6.4: THEORIZING THE FUTURE

We have suggested in this book an approach to the future grounded in a recognition of the complexity of the world we inhabit. We can thus be sceptical of many simplistic efforts to theorize about the future. Many theories of the future make core assumptions that drive their results: that progress is inevitable; that increased complexity is inevitable; that technology – or culture, or markets, or social conflict, or some other phenomenon or interaction – is the driving force in history; or that history is inevitably cyclic. Such theories may be of some use in identifying plausible futures, but even there they are best employed in concert with alternative theories. We might be more kindly disposed toward "power theory," which argues that change is driven by conscious efforts, for the project of this book is to guide us collectively toward desirable futures. Yet even we must spend much of the book addressing how we should deal with trends and surprises that we have not purposely set in motion. We might also embrace the core idea of emergence theory: that new properties emerge unpredictably within systems that are hard to understand in terms of the individual components of the system (as scientists have a hard time understanding "life" in terms of the individual components of biological systems). But we have seen that we can get very far by examining individual phenomena, and particular interactions among phenomena, without having to engage the inherent unpredictability of emergence.

We must be humbler in our theorizing, and anticipate that any one theory will only illuminate some part of our collective future. We must then be prepared to engage in the interdisciplinary act of integrating across theories.

6.13 Integrating strategies for advocacy

Sun Tzu, in *The Art of War*, an ancient treatise still studied in both military colleges and business schools, writes that "Tactics without strategy are the noise before defeat." This book has sought to allow individuals to place their actions within a broader understanding of the world around them. Individuals are urged to have a life strategy rather than unthinkingly pursuing day-to-day tactics. This should, however, be a multifaceted strategy with multiple goals and a capacity to react to life's surprises. In the realm of policy advocacy, it is particularly important that organizations harness diverse activities into a coherent strategy. It is not easy to change the world, and we should be wary of dissipating our energies by not coordinating our activities or doing these in a sensible temporal order.

How can we best draw connections across the separate pieces of advice offered in this chapter? It is helpful to recall here that we are trying to generate successful social movements that can achieve desirable social change. Reporters in covering any story are guided to answer the 5W questions: Who, What, Where, When, and Why (and sometimes How). We can follow that strategy here in integrating the above analysis. When we get to "When?" we can do as we suggested at the start of the chapter and outline how the various activities outlined above interact through time.

Who? The point to be stressed here is that there is a role for everyone. Some may seek elected office. Others may be chosen by lottery for a position of authority. Others may write blogs, organize demonstrations, organize networks of action (locally or globally), lobby people in positions of authority, lead scenario planning exercises, or perform research that fleshes out particular strategies. Everyone should be able to find some place in this chapter where they think "I could do that." And recall that we are seeking broad public support: Engaging in honest reasoned advocacy with acquaintances is also critical in creating a better world. Societal change means changing many minds: Every changed mind is a victory on the way.

Where? Likewise, there is scope for action in many places. We have referred in "Who" to elected offices, blogs, demonstrations, and everyday conversations. There is clearly a role for university research and independent think tanks (if these can be guided toward objectivity). There is a place for both traditional and new media. There are at present few places where individuals can go for careful and unbiased analysis of the key issues of the day; we desperately need people who are willing to do this – and to debunk ideologically motivated proposals. And we need to work locally and experimentally, but within global conversations.

What? We need many mutually interdependent things:

- Carefully designed policies
- Experiments where feasible
- Flowcharts. Lots of flowcharts

- Creative efforts to build public support
- Collaboration
- Open-minded dialogue
- Exhortations to ethical behaviour
- The creation of political institutions that improve our decision-making
- Better institutions in all realms of human activity
- Careful and transparent evaluation of all policies

Why? This whole book has been based on the premise that we can achieve (movement toward) desired futures. It is worth recalling that failure to push for desired futures risks ending up with plausible but far less desirable futures.

When? One might imagine a fairly logical process in which we first carefully research an issue, developing detailed policy proposals. We then explain these to others, gaining public support. This transforms into political action, which results in the policies being implemented. This would be a very misguided understanding of how social change occurs. What is necessary is a much more integrated and iterative process in which different activities occur simultaneously and reinforce each other.

We should, to be sure, have a good idea of what we are advocating before we advocate it. Yet who will develop detailed policy proposals for an idea that lacks popular support? Moreover, don't we want policy to reflect the advice of diverse people? Detailed policy, then, will be fleshed out as public support builds, and will be reflective of networking and the diverse insights this provides. It is particularly important to have interactions with politicians and bureaucrats early in the process, for these will have useful advice, and are much more likely to support an initiative that reflects their advice rather than some plan dreamed up by some academic alone in their office. Drawing government officials into scenario planning can be invaluable. We can often only fully evaluate a policy once it is implemented, and thus need political support for policy experiments that then inform further clarification of the policy. Further evaluation and clarification are called for even after a policy is broadly implemented.

The big challenge here is that we must *necessarily* build support for policies before we know all the details and have fully evaluated the effects. We must, that is, support ideas simply because they appear good in principle. The difficult-to-accept corollary is that we must be ready to abandon initiatives that we have worked for if they turn out to be impractical or do more harm than good. It should be clear by now that I quite like the idea of a basic income, and want to see more experiments, but I must stand ready to be shown that it has far worse incentive effects than I hope for or replaces far fewer existing programmes than I might like. Note that those who are sceptical of a basic income will be more willing to support an experiment if they are convinced that the advocates of such a programme are prepared to be guided by the evidence.

7

CONCLUDING REMARKS

The world can too easily seem complex and incomprehensible. Worse, it can easily seem corrupt and irreparable. This book has essayed to render it (more) comprehensible. Hopefully, individuals can gain agency from this book. They can identify strategies that they wish to support. They can see paths toward a better world. They can see ways of better grappling with big surprises. We can indeed fashion a better world if we will but have the good sense and dedication to do so. Moreover, we can be happy while doing so: Fashioning a better world does not require a life of limitless sacrifice. Though it has not been our primary purpose, I hope that this book encourages readers to reflect on what sort of person they want to be and what sort of life they want to live: Do you want to help shape a better future?

The book has provided a structure for thinking about the future. It has been designed to be easy to read and remember. It is provocative but nevertheless dedicated to plotting a future that would be widely appreciated. It is intended to spark both respectful conversation and efforts to build a better future.

It is worth recapping the key points made in each chapter:

- There is a coherent structure for careful contemplation of our future. (chapter 1)
- Society can potentially agree on a set of mutually compatible goals. A set of such goals is outlined. (chapter 2)
- There is a set of strategies that can achieve these goals with broad public support. We have outlined many such strategies. (chapter 3)
- We can identify several trends that are likely to extend into the future, and the likely effects they will have. Though we cannot predict the future precisely, we can identify a set of plausible futures. We can and did then identify strategies – some new, others developed in chapter 3 – for translating plausible futures into desired futures. (chapter 4)

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- We can also foresee at least some of the surprises that we may confront in future. We can try to limit these surprises, and we can prepare to react to them. Numerous strategies were outlined for doing so. (chapter 5)
- We can work collectively toward the implementation of the strategies identified in previous chapters. Several approaches to policy advocacy were described. (chapter 6)

We will not review the myriad goals and strategies identified across these chapters. We can briefly note, though, the central importance of improving the institutions of democratic decision-making on the one hand and encouraging both core values and a respect for diversity on the other.

A better future is possible. A worse future is plausible. I hope that you choose the former.

BIBLIOGRAPHIC REFLECTIONS

This book would not have been possible without Bishop and Hines, *Teaching about the Future* (Palgrave Macmillan, 2012). That book convinced me that the field of Future Studies had progressed to a point that my own book was possible. *Teaching about the Future* tends to stress how organizations can be advised to prepare for the future, but it clearly pointed toward an effort to think about societal futures. While Bishop and Hines described a whole university programme, the authors appreciated that a book might be written that could guide one course about the future.

Importantly for me, I could see how much of my own research could complement the ideas in *Teaching about the Future.* I had identified the five types of human decision-making in my book *Unifying Ethics* (2005) and applied these in a range of papers and books. I had also developed ideas about "the ethical challenge of our times" and an "ethical core" in those publications. I had co-authored two textbooks on how to perform interdisciplinary analysis (*Introduction to Interdisciplinary Studies* and *Interdisciplinary Research: Process and Theory*). These had both emphasized the importance of visually diagramming the interactions among phenomena. In "Interdisciplinarity versus Anti-Intellectual and Anti-Democratic Impulses" (*Issues in Interdisciplinary Studies* 36(2): 167–92, 2018; https://interdisciplinarystudies.org/docs/Vol36No22018/07_167-192.pdf), I had discussed how interdisciplinary analysis implied some important strategies for reforming democratic discourse. I had recently completed *Making Sense of World History* (Routledge, 2020; www.taylorfrancis.com/books/9781003013518), a book that could serve as a source of trends that might be projected into the future, and guidance on how to predict surprises. My "Stability, Instability, and Interdisciplinarity" (also in *Issues in Interdisciplinary Studies* 35: 65–87, 2017; http://interdisciplinarystudies.org/docs/Vol35_2017/05_65-87.pdf) had argued that surprises were most likely when phenomena studied in different disciplines interacted. More generally, I had published articles and books across over a dozen different fields, and thus possessed the

dangerously small understanding of lots of different fields that such a book project demanded. [I made a blog post on the ideas on January 5, 2021, at https://i2insights.org/2021/01/05/cross-disciplinarity-illuminates-unknown-unknowns/ and received some very positive feedback. While writing this book I also drafted "World History and Future Studies" for *World History Connected*: https://worldhistoryconnected.press.uillinois.edu/]

Jerome C. Glenn, Elizabeth Florescu, and the Millennium Project Team, *State of the Future* (2017), report on what an international network of experts think about many of the topics addressed in this book. Readers may find much useful information in its detailed analyses. The report argues that we have made progress on some fronts but not others, but could tackle all of our challenges with a concerted international effort to implement sensible strategies. The same international collaboration of futurists operates a website at www.millennium-project.org/. This website has lots of information, including overviews of (how to address) 15 global challenges.

The *Global Sustainable Development Report* also addresses many of the issues addressed in this book. It is a pretty dry read, though, befitting a committee report. It stresses the importance of linkages among diverse goals. It wants us to change educational systems in order to encourage creativity, systems thinking, and empathy. It seeks both to make scientific understanding accessible and to encourage diverse agents to pursue sustainable development.

Jennifer Gidley's *The Future: A Very Short Introduction* (Oxford University Press, 2017) surveys the history of the idea of the future, and the field of Future Studies, before addressing a couple of the topics covered in this book. It is a good read.

Realistic Hope: Facing Global Challenges, edited by Angela Wilkinson and Betty Sue Flowers (Amsterdam University Press, 2018) addresses a dozen pressing challenges and argues that there are strategies for coping with each and building a better future. The chapters are a bit uneven in quality but the book has many interesting ideas. In their summary the editors stress that transformative change involves extensive dialogue among diverse interests, experimentation, systems thinking, and futures scenarios.

Martin James, *The Meaning of the Twenty-First Century: A Vital Blueprint for Ensuring Our Future* (Riverhead Books (Penguin), 2006) is particularly good at discussing trends in technology. We could not in this book cover all of the technologies he embraces.

The field of anticipation studies addresses how our views of the future shape our behaviour in the present. Researchers often strive to change the views and then the behaviours. A good introduction to the field is Roberto Poli's *Introduction to Anticipation Studies* (Springer, 2017), while Riel Miller's *Transforming the Future* (Routledge, 2018) surveys research in the field.

There is naturally a strong overlap between the goals pursued in this book and the United Nations Sustainable Development Goals (www.un.org/sustainabledevelopment/development-agenda/). Some of these differences reflect a UN focus on the needs of the global south. Yet the biggest difference lies in the fact

that we have laid stress throughout this book on core values. We have also, of course, made an effort to develop a framework for identifying societal goals.

The World Future Studies Federation provides a list of recommended readings on its website at https://wfsf.org/, though some of the books it lists are extremely speculative. There are a handful of journals in the field, of which the most venerable is *Futures.* I have also found much of interest in *World Futures Review*, *World Futures*, *European Journal of Futures Research*, *Foresight*, and *Journal of Future Studies.*

The backcasting wheel exercise suggested in box 3.7 is described in detail in David Bengston, Lynne Westphal, and Michael Dockry's "Back from the Future: The Backcasting Wheel for Mapping a Pathway to a Preferred Future" (*World Futures Review* 12(3): 270–8, 2020).

Phillip Daffara's "Applying the Futures Wheel and Macrohistory to the Covid19 Global Pandemic" (*Journal of Future Studies* 25(2): 35–48, 2020) provides a futures wheel for the COVID-19 pandemic, and discusses the strengths and weaknesses of the futures wheel approach. He wonders if societies will appreciate the return to nature that the pandemic has generated, and encourage more environmentally friendly policies going forward.

Roy Bendor, Elina Eriksson, and Daniel Pargman's, "Looking Backward to the Future: On Past-Facing Approaches to Futuring" (*Futures*, January 2021) discusses how historical research could better inform Future Studies. In the same issue, Jonathan Boston surveys strategies for combating short-termism in political decision-making in "Assessing the Options for Combatting Democratic Myopia and Safeguarding Long-Term Interests."

There was a special issue on artificial intelligence in *World Futures Review* in June 2020. A special issue in 2019 tackled issues of policy evaluation, noting that we do not do this often enough to have developed a good sense of how best to do it. The last two issues in 2018 focused on how to teach about the future.

Alessandro Fergnani's "Mapping Futures Studies Scholarship from 1968 to Present: A Bibliometric Review of Thematic Clusters, Research Trends, and Research Gaps" (*Futures*, January 2019) provides an extremely useful overview of the field. He notes that the field is very fragmented and authors do not often cite previous work. There is a wide array of strategic foresight methods, and no consensus around which to prefer. There is a recognition that multiple methods should be employed. The article identifies six research clusters: one focused on corporate/organizational futures (with an emphasis on the development of methods for strategizing organizational futures); a second that exhibits concerns about the need for a dramatic societal transition; a third that emphasizes the environment; a fourth that stresses technological trends; a fifth that reflects on our ability to draw on the past to predict futures; and a sixth that stresses the "postnormal" and the need for interdisciplinarity. These six clusters are not well integrated and do not revolve around a shared core. I would note that I have drawn on all six clusters in this book and have provided an overarching structure in which they can be integrated. Fergnani stresses that the organizational foresight cluster is not well integrated with the five clusters focused at the societal

level. I have tried in this book to "scale up" analyses and methods developed for organizations to the societal level.

Roberto Poli, in "A Note on the Classification of Future-Related Methods" (*European Journal of Futures Research*, September 2018, 1–7), identifies about a dozen methods unique to the field of Future Studies (including three kinds of scenario planning). I have not mentioned each by name in this book (recall that we have avoided jargon as much as possible) but have drawn on each.

Strategic Foresight: Learning from the Future, by Patricia Lustig (Triarchy, 2015) provides a very accessible overview. *Strategic Reframing: The Oxford Scenario Planning Approach*, by Rafael Ramírez and Angela Wilkinson (Oxford University Press, 2016), provides both an overview of scenario planning in general and details on the particular approach they have pursued. There are several books that describe alternative processes. "An Analysis and Categorization of Scenario Planning Scholarship from 1995–2016" by Thomas J. Chermack (*Journal of Future Studies* June 2018) surveys the field. There was also a special issue of *World Futures Review* in 2019 on "turning theory into practice" that provides much detail on scenario planning practices.

I mentioned in chapter 1 that some futurists predict an imminent civilizational collapse or transformation (this is one of the six clusters identified by Fergnani). *Epistemologies of the South: Justice Against Epistemicide* by Boaventura de Sousa Santos (Routledge, 2015) urges the end of capitalism (providing no alternative, but promising to do so in a future book), but also wonders about democracy and human rights: Since these principles are so regularly violated, we should question not just the practices but the principles. Ziauddin Sardar, who edited *Futures* for 15 years, has articulated the idea of "Postnormal Times" in a variety of publications. He foresees a period of dramatic change and a "paradigm shift" in human affairs: He worries about the collapse of capitalism, decreased privacy due to new technologies, online pornography, and genetic engineering. He urges us to shape the new paradigm. Graeme Taylor's *Evolution's Edge: The Coming Collapse and Transformation of Our World* (New Society Publishers, 2008), despite the scary title, urges a fairly smooth transition to a world of self-sufficient communities consuming fewer resources and engaging in communal decision-making.

I mentioned in chapter 5 that many futurists believe that surprises are far more important than trends. Ziauddin Sardar is one notable advocate of this view. Eelco Runia, in *Moved by the Past: Discontinuity and Historical Mutation* (Columbia University Press, 2014) argues that individual humans are driven to do surprising things simply to cause change (perhaps because they fear they are coming to know themselves too well); other humans then struggle to respond. I am sceptical of such a view of history, but note that it does credit human agency with the ability to change our future. I would urge people to try to change the world in desirable directions and avoid the dangerous temptation to pursue change for its own sake.

Bishop and Hines spoke highly of Nassim Nicholas Taleb's 2007 bestseller *The Black Swan* (Random House). I found the book both simplistic and impenetrable. It struck me as simplistic because it argues that history is all about surprises, and

that we fool ourselves when we try to explain them after the fact, much less strive to predict them in advance. This is not a message that someone who has just spent years writing a world history textbook can readily appreciate. I have tried in this book to give surprises their due. Some readers may really like the idea of unpredictable surprises. If so, they will find that *The Black Swan* is filled with engaging stories, if not a clear line of argument.

Many futurists try to improve the quality of our predictions of plausible futures (note that many businesses and governments rely heavily on quantitative predictions of especially economic variables in making long-term plans). Paul Goodwin's *Forewarned: A Sceptic's Guide to Prediction* (Biteback, 2017) examines the strengths and limitations of predictions made by humans, as well as by machines and their interpreters.

Steven Johnson's *Farsighted: How We Make the Decisions That Matter the Most* (Riverhead, 2018) is a good read that has plenty of practical advice on both predicting the future and making decisions. I have drawn on his advice in several places. He advises us to list the pros and cons associated with diverse options before any major decision, and reflect on plausible scenarios (attempting to attach probabilities to different outcomes). He builds on the work of Kahneman that we discussed in chapter 6, but is more optimistic that we do think rationally about the big decisions in life. Still, he recommends an interdisciplinary course in both high school and university on how humans should best make complex decisions. On prediction, he cites Philip E. Tetlock's *Expert Political Judgment: How Good Is It? How Can We Know?* (Princeton University Press, 2005): Tetlock had asked hundreds of experts to make predictions and evaluated their success a decade later. He found that experts who were guided by one narrow ideology or belief performed worse than random, whereas experts with a flexible world view performed slightly better. These latter people tended to be curious by nature.

Jenny Anderson, in *The Future of the World* (Oxford University Press, 2018) describes the history of futurism in terms of ideological conflict (but notes that others would instead stress a move away from a stress on progress before the 1970s to increasing pessimism thereafter). She feels that the field as a whole managed its ideological disagreement by coming to stress a set of techniques such as Delphi, scenario planning, and mathematical modelling. She argues that the emphasis on multiple plausible futures was itself a reaction to the certainty with which some ideologies viewed the future. Since futurism can be a site both of control and of dissent, it can potentially appeal across the ideological spectrum. She worries, though, that futurism as practised may guide us away from making dramatic changes that our societies need. The book is polemic, and not an easy read, but it is thought-provoking.

We have often spoken in this book of scenarios. Theodore J. Gordon and Mariana Todorova, in *Future Studies and Counterfactual Analysis: Seeds of the Future* (Palgrave Macmillan, 2019), identify two broad types of scenario: One follows a cause/effect chain forward; the other describes life in a plausible future. The book then describes a set of (brief) scenarios engaging issues such as truth (special attention is paid to

our ability to fake videos and pictures), nuclear proliferation, population growth, religion (a very open-ended discussion), immortality (real and avatar), human decision-making capabilities, bioterrorism (with hundreds of thousands or millions of deaths), supercomputers as human masters, the nature of progress, our need to identify with groups, and genetic engineering. In each case, they start with a bit of history of how the issue has developed to this point. They recognize that many of their scenarios are very unlikely. In discussing progress, the authors recognize, as we have, that it is essential to first identify our goals.

We discussed narrative in box 5.3 and elsewhere. Genevieve Liveley, Will Slocombe, and Emily Spiers, "Futures Literacy Through Narrative" (*Futures*, January 2021) is a good place to start for those interested in narrative approaches. The first section urges us to apply literary analysis to the stories people tell about the future. The second urges us to collectively create a play about the future (an idea that was mentioned in box 5.3). The third argues that science fiction can contextualize the future, and urges us to examine where science fiction authors are coming from.

This book has cast a wide gaze and has drawn on decades of reading by me. I will not attempt to guide readers to works on each issue addressed (I will, though salute my friend Roderick J. Lawrence's *Creating Built Environments: Bridging Knowledge and Practice Divides* (Routledge, 2020), which I relied heavily upon in my discussion of urban planning). Our libraries and online resources are not classified as well as they might be (this is another issue that has attracted my attention; my co-authored *Interdisciplinary Knowledge Organization* discusses how we could improve our access to collective human understanding), it should still be possible for readers to readily identify works on any subject addressed here. The trick is to seek out multiple works on any subject from different points of view, and use your judgement in integrating across their insights. (Yes, I have a couple of textbooks on interdisciplinary analysis that can be helpful here; see above.)

I mentioned Donella H. Meadows and Diana Wright's *Thinking in Systems: A Primer* (London: EarthScan, 2009) in section 3.1. It is a very good read, and filled with practical advice on the performance of systems analysis. You don't have to agree with every bit of policy advice they provide in order to appreciate their analytical approach. The book is available online at https://wtf.tw/ref/meadows.pdf. M. Ramage and K. Shipp, *Systems Thinkers* (2nd ed. London, UK: Springer, 2020), describes several different types of systems thinking, and several important thinkers in the evolution of systems thinking.

Bernadette Wright and Steven E. Wallis, *Practical Mapping for Applied Research and Program Evaluation* (Sage, 2020), provides lots of detailed advice on how and why to map the interactions among phenomena. It stress the importance of nodes with multiple connections: These can be the best places to intervene in order to achieve desirable ends.

Garett Jones, *10% Less Democracy: Why You Should Trust Elites a Little More and the Masses a Little Less* (Stanford University Press, 2020), despite the awful title, discusses the value of better channelling expert advice into governance. He may underestimate the challenges of limiting expert bias.

Amitai Etzioni's *Reclaiming Patriotism* (University of Virginia Press, 2019) also has an awful title. He celebrates the ability of social movements to achieve societal goals that would have seemed unlikely a generation earlier.

Charles Eisenstein's *Climate: A New Story* (North Atlantic Books, 2018) places discussions around climate in a broader context. I don't agree with everything he says (the rant against quantification struck me as misguided, though I get where he is coming from), but I did like the attempt at context. He inspired me to worry that the climate debate distracts us from other environmental issues. And I concur with him that we need to change our world view away from excessive individualism and see ourselves as embedded in both communities and nature.

Patrick Moriarty and Damon Honnery, "The risk of catastrophic climate change: Future energy implications" *Futures* 128, April 2021 provides a brief overview of the literature on climate catastrophe and the steps that could be taken to avert it.

George Lakoff has written multiple works on the general subject of "framing." These show that how an idea is expressed has a major impact on how people interpret the idea. He argues that we need to express policies in a way that people can incorporate into their pre-existing ways of seeing the world.

Catherine Sanderson, in *Why We Act: Turning Bystanders into Moral Rebels* (Belknap Press, 2020), urges us to speak up about the ethical lapses of others, and discusses why we don't.

Paul Goodwin's book *Forewarned: A Sceptic's Guide to Prediction* (Biteback, 2017) looks at the challenges and biases in forecasting by humans and machines. Nate Silver's *The Signal and the Noise* (new edition, Penguin, 2020) provides a very detailed and readable review of the potential and challenges of prediction in many realms, and much advice on how to do it better.

On a more practical note, *Calling Bullshit: The Art of Scepticism in a Data-Driven World* by Carl Bergstrom and Jevin West (Random House, 2020) provides advice on how to spot dodgy statistical reasoning. In a world awash in purposeful disinformation, we all need to develop skills at spotting this.

Hello World: How to Be Human in the Age of the Machine by Hannah Fry (W.W. Norton, 2019) provides a great overview of the promises and challenges of artificial intelligence – including its ability to guide our future.

In *How Democracies Die* (Viking, 2018), Steven Levitsky and Daniel Ziblatt describe a slippery slope that starts with a trampling of democratic norms – thereby ending the degree of mutual trust between rivals that democracy requires – and proceeds through damage to institutions, especially those related to elections, to lawlessness and extremism. Sadly, many of the steps they outline have actually been taken in the years since they wrote.

INDEX

Note: Page references for figures are in *italics* and references in **bold** are for boxes.