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UNDERSTANDING CHINA'S FUTURE:

A CRITICAL EXPLORATION OF FUTURE-ORIENTATED APPROACHES TO ANALYSING SOCIO-POLITICAL PHENOMENA

Doctoral Thesis

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Declaration:

I hereby declare that this thesis is entirely my own work and I have faithfully and accurately cited all sources used to the utmost of my ability.

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Abstract

This thesis has two main aims. The first of these is to study available methodologies for researching the future in the social sciences, and particularly in political science and international relations (IR). To be more specific, it attempts to determine whether it is possible to establish, given the present state of scientific knowledge, a relatively rigorous method for examining the futures of socio-political phenomena. The second aim is to set out to use the methodological approach(es) established in the first part of the study to examine the future of China, both as an applied example of the use of the methodology as well as an end in itself within IR's sub-field of China studies. Thus, the thesis fits within the areas of future studies and China studies, but with a particular focus on the implications of the research for political science and IR within the broader social sciences.

The research reveals that the most suitable candidate for researching socio-political futures, at least until computer modelling and complexity theory are refined enough to examine the future with greater accuracy (if this is possible), is scenario construction, given that it deals not with *prediction* of definite outcomes, but with future *possibilities*. Since scenario construction, however, is a *faute de mieux* methodology (meaning that, despite inadequacies, it is less inadequate than the alternatives), there is a need to develop it further. The thesis' primary research attempts to do this by taking and adapting Delphi method's premise that consensus expert opinion can, at least to a degree, act as a counterweight to individual bias, and thereby constructing scenarios on the basis of a typology of expert forecasts. The main part of the research thus focuses on constructing scenarios of China's future out of a typology of expert forecasts concerning China's development up to 2050. The ultimate goals are to assess the degree of success of the resulting scenario construction project, and to develop a basis for further research into both China's future in particular and the study of socio-political futures in general.

Keywords: China, scenario construction, future studies, international relations

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List of abbreviations

BCE   Before the Common Era (formerly BC)

CASS   Chinese Academy of Social Sciences

CCTV   China Central Television (China's state broadcasting service)

CE   Common Era (formerly AD)

CEE   Central and Eastern Europe

CIA   Central Intelligence Agency

CCP   Chinese Communist Party

FDI   Foreign Direct Investment

GDP   Gross Domestic Product

IR   International relations

LDP   Liberal Democratic Party (of Japan)

PLA   People's Liberation Army

PRC   People's Republic of China

SEZ   Special Economic Zone

SNWTP   South-North Water Transfer Project

SOE   State-owned enterprise

WTO   World Trade Organization

Note on use of Chinese language

The transliteration of Chinese language in this thesis has for the most part been done according to the official system for romanisation used by the People's Republic of China (PRC), which is known as *pinyin*. The *pinyin* system is generally used in modern scholarly works in English, and this thesis thus conforms to the established academic norm for transliteration of Chinese terms and words. *Pinyin*, it should be noted, differs from both the earlier Wade-Giles system and the Czech system for transcribing Chinese. However, some names, such as 'Chiang Kai-Shek' and 'Kuomintang', are left in the form used before the advent of *pinyin* for reasons of conventional usage and familiarity.

Chinese characters are presented in the official simplified form used in the PRC and Singapore, rather than the traditional form generally used in Taiwan and Hong Kong.

CHAPTER 1: INTRODUCTION

1.1   Overview and problem statement (including research questions)

The starting point for this thesis is an attempt to understand the future of China. This is how the project was originally conceived and planned and how, ultimately, it will be carried through to its conclusion. Thus from the outset there are two connected strands to the research, which immediately present themselves as two main research questions: (i) How does one research the future in political science, IR and the social sciences?; and (ii) What is the best way to examine the future course of China's development? However, once one considers these two research questions in relation to the literature (which will be analysed in depth later in this introduction as well as in subsequent chapters) it soon becomes evident that, although understanding China's future is in itself a tremendously difficult and enormous task, the more problematic element of the research is going to be how to find a way to analyse the future within the academic sphere of the examination of socio-political phenomena.

There are two main reasons for the intrinsic difficulty of studying the future in the social sciences. The first is related to methodological concerns: put simply, how does one analyse phenomena which have not yet occurred, and therefore have not produced any empirical data which can be studied? The future appears as a blank page yet to be filled, therefore containing no information to be examined. Merely establishing what data (past trends? present trends?) one is going to study is therefore extremely difficult. It is precisely this difficulty of clearly establishing which set of empirical data to study, in all probability, which has discouraged most social scientists down the years from studying the future. The second is related to theoretical concerns: how does the future fit into social science theory, especially into existing theoretical frameworks in political science and international relations (IR)? There seems to be no place for the future in academic fields which claim to address empirical data. These essentially must be obtained from a study of phenomena relating to the past and present, and so the future (whatever it may turn out to be) is not generally included explicitly in the frameworks because a place has not been found for it.

From the above reasoning it appears that there is a clear risk of producing mere speculation and pie-in-the-sky reasoning when researching and writing about the future within the context of academic political science and IR. The fact, also, that there is no established method or methodology in the social sciences for exploring and discussing future outcomes presents a further difficulty. Given the persisting problems inherent in finding reliable predictive methodologies even in the natural sciences (for instance in genetics, in which even such innovations as the discovery of DNA and the mapping of the human genome are far from solving questions of genetic causality: the recently-discovered sub-field of epigenetics has, for example, undermined the assumptions of the genetic determinists[1]), where in the context of physical, chemical and biological processes one would imagine accurate prediction would be achievable, finding a reliable way or ways to assess future outcomes in the social sciences appears to be an intractable or insoluble problem.

The question then becomes: Why bother? Why attempt to know the apparently unknowable, to try to understand a phenomenon which has not yet occurred and for which there are no empirical data? It is precisely this concern, after all, which has presumably deterred most social scientists from attempting systematic study of the future, and which continues to make most social scientists suspicious of any attempts so to systematically study the future.

On the other hand, there is one overwhelming reason for attempting to study the future in political science and IR, as well as in some others of the social sciences (such as sociology and economics). That reason is simply that the study of politics (and IR), in marked contrast to the study of history, is inherently a *future-orientated* pursuit. That is, by its very nature it deals with the study of systems and structures which have an *impact on the future*. In large part the future-orientated nature of political science and IR is intrinsic. Political theorists – for instance, Hobbes, Rousseau, Kant, Locke, Marx, Rawls and Habermas, to name but a few famous examples[2] – are generally concerned

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[1] For more on this very interesting development see Nessa Carey (2012) *The Epigenetics Revolution: How Modern Biology is Rewriting Our Understanding of Genetics, Disease, and Inheritance*, New York: Columbia University Press.

[2] It is necessary here only to identify a single, highly influential, undeniably future-orientated work by each of these writers: Thomas Hobbes (1651, 1909) *Leviathan*, Oxford: Oxford University Press; John Locke (1689, 1980) *Second Treatise of Government*, Indianapolis: Hackett Publishing; Jean-Jacques Rousseau (1762, 1947) *The Social Contract*, New York: Hafner Press; Immanuel Kant (1795) *Perpetual Peace: A Philosophical Essay* (available at: http://files.libertyfund.org/files/357/0075_Bk.pdf, accessed September 6th, 2013); Karl Marx and Friedrich Engels

with developing better systems of government, society, leadership or law, which means systems of government, etc., *which will function better in the future than existing systems have done up to the time of writing.* This normative concern of political scientists is unmistakably a future-orientated one, and implies that political science as a discipline ineluctably deals with the analysis of phenomena which will impact societies and the world in the future. It is this orientation in politics towards the future that produced socialism as well as fascism, the EU as well as the UN, and which has caused countless books on politics and IR to be written. If political science focussed solely on what is already known (i.e. the political past) it would not, in effect, be political science at all, but could be reclassified as political history.

Having established that political science and IR are inherently future-orientated, the question of prime importance (apart from wondering why this fact is not more discussed in these fields) becomes a methodological one: how do we proceed with our attempt to understand the future, or at least the relationship between the past, present and future? Here once more the sceptics would simply deny that there is any way to proceed, and that the safest course is to leave the future alone; yet, as we have seen, this is of itself a denial of what political science and IR *are.* In fact, in doing political science it can be argued that one is *obliged* to try to find as scientifically rigorous a way as possible to address the unknown and apparently unknowable future. To put this idea another way, Neumann and Øverland are correct to point out that "The future is unknowable, but it does not follow that the *methods* that we use to discuss future probabilities cannot be held to scientific standards."[3] The implication, then, is that trying to find both theoretical and methodological solutions to the problem of examining the future is essentially the central focus of this thesis, albeit with a specific focus on the future of China in particular.

Drawing the above conclusion means that the thesis is of necessity an exploratory one which is likely to have some rough edges rather than neatly-defined boundaries. It is also, it may be thought, over-ambitious in that it is in danger of attempting to do more than can be covered in one research project. That this thesis may, therefore, be prone to approximation, generalisation and error borne of the attempt to aggregate a large

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(1848) *The Communist Manifesto* (available from many online sources); John Rawls (1971) *A Theory of Justice*, Harvard University Press; and Jürgen Habermas (1973, 1988) *Legitimation Crisis*, Cambridge, UK: Polity Press.
[3] Iver B. Neumann and Erik F. Øverland (2004) 'International Relations and policy planning: the method of perspectivist scenario building', *International Studies Perspectives* (2004) 5, 258-277, p. 265.

amount of diverse material is inevitable, and is likely to open the work up to a great deal of potential criticism. At the same time, such potentially serious shortcomings do not have to be seen as undermining the research, but as indicative of the fact that the phenomena being addressed are inherently imprecise and complicated and in need of clarification. One should not necessarily be deterred from researching a topic by the difficulty (or impossibility) of being totally precise, of pinpointing and quantifying exact entities. The noted IR scholar Kenneth Waltz for instance explains that:

> Even by those who have authored them, the emergence of theories cannot be described in other than uncertain and impressionistic ways. Elements of theories can, however, be identified. The difficulty of moving from causal speculations based on factual studies to theoretical formulations that lead one to view facts in particular ways is experienced in any field. To cope with the difficulty, simplification is required.[4]

There is thus no substitute for a degree of hypothesis, speculation, approximation, generalisation, exploration and trial-and-error reasoning if one is to make progress with innovative research, particularly if it is situated within a non-mainstream area. And so it is certain to prove with this project, which after all takes on an area of political science and IR which is concerned with extreme uncertainty: understanding the future.

This research project is therefore set up and designed to have an exploratory type of structure that may conflict with expectations of neat boundaries and precise formulations. This thesis is a search both for a method with which to examine the future in the social sciences (particularly political science and IR) and also for a means to analyse the future of China specifically. The research framework is therefore constructed as a search rather than as a finished set of conclusions. This means in practice that each chapter is modelled, to a great extent, on an approach equivalent to that termed by Deng Xiaoping 'crossing the river by feeling the stones' (in Chinese, 摸着石头过河, *mozhe shitou guohe*)[5]: a trial-and-error approach to very complex matters, which (in this case) weighs up various options thrown up (in the absence of a set formula for studying the future laid out in the political science and IR literature) by an eclectic set of literature drawn from different fields. If this eclectic approach offends some who may seek the delineation of clear disciplinary boundaries and neatly

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[4] Kenneth Waltz (1979) *Theory of International Politics*, Reading, MA: Addison-Wesley, p. 10.
[5] For more explanation of the history and usage of this famous expression, see Henry Yuhuai He (2001) *Dictionary of the Political Thought of the People's Republic of China*, New York: M.E. Sharpe, p. 287.

formulated findings of an instantly recognisable type from the outset, apologies in advance; but, as already explained, given the lack of an established approach or approaches to the material, there is really no alternative.

On the other hand, the writer of this thesis will make every attempt to ensure that the research remains centred on the fields of political science and IR (while frequently referring to their position within the broader social sciences). This will be, above all, a research project which deals with the future as it pertains to socio-political phenomena – specifically the development of China in a global context – and as such the core of the work lies in the closely-connected fields of international relations and political science. This is not to say, however, that it does not also touch upon other areas vitally relevant to China's development, such as economics, demographics and environmental studies: evidence from the literature in these areas will be utilised when necessary, and conclusions that have a bearing on the resolution of the overall project will also be drawn where possible.

It is now time to get down to the specifics of how the project will proceed, i.e. to lay out the hypotheses, boundaries, goals, limitations and structure of the thesis in detail. Let us, then, begin with the structure of the thesis: for although, as already stated, this research project is somewhat experimental in nature, it nonetheless needs a very clear structure from the start if it is not to become lost in a maze of meandering ideas concerning imagined futures which may never come to pass. It should be restated at the outset that it is vitally important to situate the research to be conducted in this thesis in a scientifically rigorous framework that allows scientifically rigorous conclusions, rather than wild imaginings, to be arrived at: and so it is to the construction of just such a scientifically rigorous research framework that we will now turn.

1.2   The structure and content of the thesis

At the core of this thesis, as explained in the previous section, are considerations of a methodological and theoretical nature. It is thus essential to begin the research project with chapters devoted to an exploration of the literature concerning the theory and methodology of examining the future in the social sciences in general, and political science and IR in particular. The extended, two-chapter literature review in Chapters 2

(Theory) and 3 (Methodology) will be conducted with, at all times, the specific aim of assessing which – if any – of the theories and methodologies under consideration appear most suitable to evaluating and understanding China's future.

The theory chapter, Chapter 2, therefore begins by outlining the problem of understanding the future of China (and other large-scale socio-political phenomena) from a theoretical perspective. Thereafter it moves on to a consideration of the way in which theories of the future have been formulated by both natural and social scientists. The chapter progresses from theoretical considerations of the future in the natural sciences to those in the social sciences, and thence to theory of the future in political science and IR. The reason for progressing in this way, from the natural to the social sciences, then narrowing the focus down to political science, is because of the apparently far greater success in the prediction of future outcomes achieved in the natural sciences relative to the social sciences. Hence there needs to be an analysis of the reasons for this greater success (to the extent that such success is real rather than reputed, given the inevitability of wide variation in predictive accuracy across the many sub-fields in the natural sciences), as well as the reasons for the relative lack of success in prediction and forecasting future outcomes in the social sciences. The chapter as a whole is thus intended to reveal the underlying state of scientific theory concerning the prediction and assessment of future outcomes, and to draw some conclusions about where exactly this leaves the study of the future in political science and IR at present. The finding of the chapter is that the processes through which the future emerges from the past and present are very complex, and that the emerging scientific field of complexity theory, which is inter-disciplinary and contains a growing theoretical understanding of phenomena such as feedback loops, nonlinearity and complex adaptive systems, therefore appears to be best suited to explaining the origin of future outcomes. There is thus a need for any research into the future in the social sciences to take account of the new science of complexity in its theoretical framework and research design.[6]

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[6] The implications of complexity theory for the study of the future will be analysed in detail in Chapter 2. In the meantime, for a good general introduction to complexity theory, see M. Mitchell Waldrop (1993) *Complexity: The Emerging Science at the Edge of Order and Chaos*, London: Viking. For the emerging implications of complexity theory for the social sciences, see John H. Miller and Scott E. Page (2007) *Complex Adaptive Systems: An Introduction to Computational Models of Social Life*, Princeton: Princeton University Press, and Robert Jervis (1997) *System Effects: Complexity in Political and Social Life*, Princeton: Princeton University Press. Jervis' book is seminal, in that it is the first major work to focus on the relationship between complexity theory and political science.

The task for Chapter 3, the methodology chapter, is both more difficult and more important for the thesis as a whole, and so this part of the thesis is substantially longer than Chapter 2. Chapter 3 systematically examines a broad selection of the available methodological approaches to understanding the future in the social sciences, with the aim of establishing a clearly-defined and specific research design framework for the main body of the project by the end of the chapter.

The chapter begins with a discussion of the methodological difficulties inherent in evaluating complex future outcomes, before moving on to an evaluation of specific methods with the aim of deciding which of these (if any) might be suitable for attempting to reach an understanding of China's future. Since many social sciences research design textbooks break methodologies down into two categories, quantitative and qualitative, this chapter will begin with the same approach, assessing possible approaches of each type in turn for suitability and ensuring that, as far as possible, no stone remains unturned. This assessment of the research design and methodology literature will be conducted, as far as possible given the subjective nature of the analysis, with an open but critical mind concerning the 'shopping list' of methodological approaches available in the conventional social sciences research design literature, in an attempt to weigh up the strengths and weaknesses of each approach as far as the study of China's future is concerned.[7]

As will be seen during the analysis of quantitative and qualitative methodologies carried out in the chapter, identifying a methodological approach or approaches suitable for examining the future of a complex socio-political entity such as the People's Republic of China (PRC) from among the 'shopping lists' presented in the conventional social sciences research design literature is very difficult. In the case of the *quantitative* methods this is because attempting to quantify complex future outcomes (for example through the use of statistics, mathematical modelling or probabilities) does not have a solid track record of reliability and accuracy to date, and must therefore be set aside,

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[7] In speaking of the 'conventional' social sciences research design literature, I am referring to works such as the following: Alan Bryman (2008) *Social Research Methods, 3rd edition*, Oxford: Oxford University Press; Tim May (2001) *Social Research: Issues, Methods and Process (Third Edition)*, Buckingham: Open University Press; David Silverman (2010) *Doing Qualitative Research* (Third Edition), London: Sage Publications; John W. Creswell (2007) *Qualitative Inquiry & Research Design: Choosing Among Five Approaches*, California: Sage Publications; Gary King, Robert O. Keohane and Sidney Verba (1994) *Designing Social Inquiry: Scientific Inference in Qualitative Research*, Princeton: Princeton University Press; and (as an example of a methodology textbook dedicated to IR) Audie Klotz and Deepa Prakash (eds.) (2008) *Qualitative Methods in International Relations: A Pluralist Guide*, Houndmills: Palgrave Macmillan.

pending further research or methodological innovation (e.g. improved computer modelling within a framework of complexity theory).[8] As far as standard *qualitative* research methods used in the social sciences are concerned, there would seem to be, as Chapter 3 explains, no established method that is suitable for understanding the way in which complex future outcomes emerge from the past and present.

The conclusion that the conventional social sciences research design literature does not appear to contain any methodological approaches which are well-suited to addressing the future of complex socio-political entities such as the PRC thus necessitates looking outside the conventional research design literature for an approach or approaches which are specifically designed to be future-orientated while accounting for complexity. The next part of the chapter, entitled 'Evaluating future-specific approaches', therefore assesses a range of future-orientated research methods taken from outside the conventional research design literature. The conclusion of this section is that there appear to be one main candidate for attempting an analysis of China's future which accounts for complexity: scenario construction.[9] The reasons for selecting this methodological approach for an examination of China's future will be explained in depth in the relevant section of Chapter 3; but since constructing the methodological framework is vital to the development of the remainder (the main part) of the research project, the reasoning underlying the selection of scenario construction as a potential solution to the problem of understanding the future needs to be outlined in brief here.

The analysis produces four main reasons for selecting scenario construction. First, in contrast to the conventional methodologies for studying social science phenomena, scenario construction is *intrinsically* future-orientated. Second, in considering alternative futures via the development of causal narratives it appears to offer at least the *opportunity* to address the complexity of the future (which makes it attractive in terms of the conclusion arrived at in Chapter 2, even if this propensity should prove not to result in reliable success). Third, scenario construction is a method which differs from most other future-orientated methodologies in that it can be utilised to permit examination of future outcomes *without the obligation to commit to one specific prediction of a fixed outcome* (which, as previously stated, is attempting to know what cannot truly be known, and is therefore akin to crystal-ball gazing). Fourth, and most

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[8] See Miller and Page (2007) for more detail on this.
[9] Scenario construction is also known as scenario building, scenario planning or scenario learning: this thesis will generally, however, use the term 'scenario construction', for reasons which will be explained in Chapter 3.

importantly, the method presents, when the views of a group of experts are considered in the creation of scenarios, the opportunity to create a framework for *considering a range of expert opinion* in order (hopefully) to mitigate at least the worst excesses of biases and wild imaginings which can result from forecasts and speculations about the future emanating from the brain(s) of only one or two or a small group of people (the last of which is often, in practice, dominated by one or two dominant individuals).[10] This last is an important cause of the failure of many analyses of the future to be either informative or of interest in a scholarly sense, and is – surprisingly – not always clearly addressed by papers and texts on the study of the future in the social sciences. This is most notably the case with some of those which examine the use of scenario construction in IR and political science, where the need to take care to ensure scientific rigour would seem to be paramount.[11]

Unfortunately, however, the methodology also has weaknesses. One of these is, as already mentioned, the tendency for biases and wild imaginings to creep into the scenario building process. One example of bias, as Neumann and Øverland point out[12], is the tendency for scenario builders to over-emphasise recent trends, producing, depending on circumstances, over- or under-prediction of long-term change, a phenomenon which Smil terms "the biasing effect of recent events".[13] Other potential biases could be psychological, cognitive, emotional, or personal in nature (as further analysis in this part of Chapter 3 reveals).

The need to compensate for these shortcomings as far as possible leads to the idea of combining the strength of scenario construction – namely, that it imagines a range of possible futures without committing to a single specific forecast – with the strength of the Delphi method created by the RAND Corporation in the 1950s – i.e. that it utilises a panel of experts, thus at least avoiding accusations of individual bias.[14] This idea,

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[10] An interesting and instructive history of future predictions, revealing the huge degree of wild fantasy, error and unfounded speculation resulting from forecasts made by a single author or small group of authors, is I.F. Clarke (1979) *The Pattern of Expectation: 1644–2001*, New York: Basic Books.

[11] For instance, neither Neumann and Øverland (2004) nor Ondřej Ditrych (2012) 'Scenáristika jako metoda v mezinárodních vztazích' ('Scenario building as a method in IR'), *Mezinárodní vztahy (International Relations)*, Issue 4 (2012), pp. 93-107, has much to say on this point, and neither do they include checks for bias and wild imaginings in their methodological frameworks.

[12] Neumann and Øverland (2004).

[13] Smil (2004), p. 212. Smil is referring to the use of the Delphi method here, but the effect is clearly exactly the same with regard to scenario construction.

[14] For a detailed explanation of Delphi method, see Nicholas Rescher (1998) *Predicting The Future: An Introduction to the Theory of Forecasting*, Albany: State University of New York Press, pp. 92-3.

developed in detail in the final part of Chapter 3, is used to create an innovative and experimental research framework based upon the scenario construction process recommended by scenario expert Paul J.H. Shoemaker[15], but building in a component based upon Delphi method's utilisation of forecasts made by a panel of experts. An adapted Delphi-type methodology is preferred because, as Rescher points out[16], it avoids the face-to-face interaction (commonly used in scenario construction projects, for instance those described by Neumann and Øverland[17]) which might produce distortive effects on results via what Rescher terms "certain psychological factors"[18]: these can include, for instance, agenda-setting by dominant individuals, groupthink, jumping on bandwagons, and other effects which inevitably result from human social interaction. The adaptation of Delphi method here decided upon entails consulting texts written by experts on China's development, with a view to constructing a typology of expert forecasts. By developing a typology it is hoped to discover a finite range of versions or visions of China's future that can be transformed into scenarios which are based on expert analysis and opinion rather than merely the imagination of one person (for instance, the author of this thesis). Shoemaker's scenario construction process also importantly contains a step which requires a check for plausibility and bias. In the research design developed in the final part of Chapter 3, the check for plausibility and bias to be utilised is to compare the scenario themes and typology of expert forecasts with the expert literature on China's past and present development.

In the final research design, the in-depth analysis of the expert China literature is to be attempted in Chapter 4 (in order to provide a factual foundation to the scenario construction task in terms of establishing the key trends and uncertainties in China's development), while the typology and completion of final 'learning' scenarios are to be undertaken in Chapter 5. The final scenarios are designated 'learning' scenarios because they are intended to be used as a starting point for further debate and research

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[15] For a detailed outline of his scenario construction process see Paul J. H. Shoemaker (1995) 'Scenario planning: a tool for strategic thinking', *Sloan Management Review*, Winter 1995, 25-40, pp. 28-30. As will be demonstrated in Chapter 3, Shoemaker's scenario construction method is preferred because it represents, in contrast to most other scenario construction literature consulted in the groundwork for this project, a clear set of specific steps to be followed in the process of constructing final scenarios rather than a set of recommendations lacking a clear methodological structure.

[16] Rescher (1998), pp. 92-3.

[17] See Neumann and Øverland (2004), pp. 272-4.

[18] Rescher (1998), p. 93.

on possible futures for China rather than as definitive predictions of what 'will' be[19]: as previously stated, the scenario construction process to be followed is not intended to be predictive in any way. The scenario construction process arrived at is described in the final section of Chapter 3, entitled 'Building a research design framework based on scenario construction', and is summarised in Figures 3 and 4 (to which the reader is referred for a concise summary of the methodological process followed in the remainder of the thesis, i.e. Chapters 4, 5 and 6).

Based on the methodological considerations explained in Chapter 3, the scenario construction process is therefore carried out in the remaining two chapters of the thesis. These are Chapter 4, the analysis of the literature of China's past and present development, and Chapter 5, the development of final 'learning' scenarios from a typology of expert forecasts. The remainder of this section outlines these two chapters, which constitute the main body of the research.

Chapter 4, entitled 'China: past and present', takes the form of a historically-focussed critical-interpretative analysis of China's political, economic, environmental and socio-cultural development, based on the study and synthesis of a wide range of literature emanating from the given sub-fields of China studies. The chapter corresponds to the first three steps in the scenario construction process defined in Figure 3, i.e. 'Step 1: Define the scope', 'Step 2: Identify basic trends', and 'Step 3: Identify key uncertainties' (equivalent to Parts 1 and 2 in Figure 4). The central idea of Chapter 4, then, is to critically analyse China's past and present developmental processes in order to draw out the key trends and uncertainties which will affect the nation's future development. Figure 5 summarises this analytical process.

It has to be admitted at the outset that the review of the China literature to be carried out in Chapter 4 is an extremely ambitious undertaking, and one that is open to a great deal of criticism by China experts on the grounds of over-simplification, omission of detail, compression of long years of scholarly debates into short paragraphs, and so on. On the other hand, it needs to be clearly understood that there is, in this author's opinion, no alternative to attempting simplification and compression in analysing complex socio-political phenomena such as China's rise if one is to draw out key trends

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[19] For more discussion of this point see Neumann and Øverland (2004), as well as the analysis in Chapter 3 of this thesis.

and uncertainties for the future.[20] It may well be, however, that some readers of this thesis will find some of the conclusions arrived at in Chapter 4 objectionable and misrepresentative. One can only state that this is probably inevitable: a single author attempting to summarise the main trends of the entirety of Chinese history is bound to fall into error, ignorance, or personal bias at some point. Nevertheless, given that the central aim of Chapter 4 is to draw out the key trends and uncertainties regarding China's future, it is, as already stated, necessary to make the attempt to establish what these might be. Since the resulting analysis, however imperfect, will be utilised as the basis for the check for plausibility and bias in Chapter 5, it needs to be in place before the typology of expert forecasts and construction of final 'learning' scenarios are attempted. Again, in mitigation of error, omission or bias, it needs to be remembered that the entire methodological process constructed at the end of Chapter 3 is an experimental one whose efficacy will be evaluated in the Conclusion to the thesis, and that the analysis conducted in Chapter 4, if thought to be remiss in some areas, should be read in this spirit of experiment and exploration. It needs to be emphasised that the final scenarios constructed at the end of this long process are *learning* ones, and that the whole project is intended, with all its (probably numerous) flaws, as a basis for further discussion, research, questioning and analysis, and not at all as an attempt to have the final say on what China is, was and will be.

Moving on, then, to the contents of Chapter 4, the first section, 4.1, establishes the overall scope of the scenario construction process (Step 1 in Figure 3). The scope is here defined as attempting to understand the possible course(s) of China's development from the present-day up to the middle of the 21st century. This understanding is to be reached via interconnected historically-focussed analyses of China's political, economic, sociocultural, environmental and scientific development, including an assessment of the impact of these factors at both a domestic and international level (see Figure 5). It is essential to attempt to analyse and connect these aspects in order to account – as the findings of Chapter 2 (concerning the relationship between complexity theory and the future) necessitate – for the complexity of China's development. The seven sections that follow (4.2-4.26) attempt to evaluate the key aspects of China's development, via a critical-hermeneutic, historically-focussed analysis, in the areas of culture and society, scientific development, environment, economy, domestic politics and international

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[20] For a more detailed account of this argument, the reader is again referred to Waltz (1979), p. 10.

politics. Subsequent to these seven sections, the following two, 4.3 and 4.4, entitled 'Identifying major trends (past and present)' and 'Identifying key uncertainties (into the future)', represent Steps 2 and 3 of the scenario construction process (see Figure 3). These two sections, as befits their importance as stages in the scenario construction process, contain bullet-pointed summaries of the key trends (Step 2) and key uncertainties (Step 3) obtained from the analysis of the chapter as a whole.

There is no need here to go into too much depth concerning the complex details of the analysis contained in Chapter 4: the reader is referred to the chapter itself. However, it is still necessary at this point to account, first, for the selection of the six aspects of China's development, and second, for the foregrounded emphasis on historical and sociocultural factors in the analysis. The former can be justified, as stated in the previous paragraph, with reference to Chapter 2's conclusion that there is a need to examine future outcomes within a framework of complexity theory. The approach taken in Chapter 4 is thus dependent on the findings of Chapter 2, which imply that there is a need to attempt to draw together a range of significant factors when establishing key trends and uncertainties which will affect the future. Such a complex network of integrated factors can then be utilised in the creation of the scenarios themselves. The six aspects selected, i.e. culture and society, scientific development, environment, economy, domestic politics and international politics, are thus intended to fulfil, as concisely and thoroughly as possible, the theoretical and methodological demands of Chapters 2 and 3 for an integration of a wide range of complex factors whilst including analysis of all major aspects of China's development.[21]

As for the latter point concerning the emphasis on historical and sociocultural factors in the analysis, this can again be justified with reference to the findings of Chapter 2 concerning the need to account for complexity when attempting to understand the way the past and present lead into the future. As George Lawson points out, many contemporary mainstream IR theories (for instance Waltzian neorealism or constructivism) fail to take account of the full complexity of historical factors, often due to a preoccupation with finding empirical 'proof' via "deductive, nomological methods discrete from 'thick description'".[22] This tendency to nomological reductionism means

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[21] For further, more detailed justification of the selection of the six specific areas included, see Chapter 4 and its subsections.

[22] George Lawson (2010) 'The eternal divide? History and International Relations', *European Journal of International Relations* 18(2): 203-226, p. 207. Adam R. C. Humphreys (2006) *Kenneth Waltz and the limits of*

that they end up ignoring the "particularity, context, and complexity"[23] of historical processes, tending to cherry-pick historical examples to support their theories instead of considering historical development in full. Lawson's conclusion is that much mainstream IR theory is prone to be ahistorical, the result of "failing to see how historical events are part of broader processes".[24] This finding is supported by the international critical theory of Robert W. Cox, which attempts, in contrast to other, more mainstream IR theories, to explain processes of global transformation and power transitions by emphasising the need for rich historical contextualisation.[25]

These considerations imply that the need for historical contextualisation also has to be directly applied to the future of China. In a telling example of this, the work of the historian Wang Gung-Wu focusses on the importance of processes of historical transformation on China's development and emerging role in the international order.[26] In terms of this research project, China's political, economic, environmental, scientific and sociocultural development all have to be contextualised within a framework of complex, long-term historical processes. Given China's long history as what Martin Jacques calls a 'civilisation-state'[27], this task of contextualisation demands that one begins with the sociocultural factors which began to be established during China's emergence as a unified socio-political entity, which continued to evolve during the subsequent two millennia up to the present, and which underlie China's long-term development: this is why this section is addressed first. On such a foundation of historically-contextualised sociocultural analysis of the civilisation-state the analysis of the other aspects of China's development can be constructed.

In short, Chapter 4 attempts, after defining the scenario construction project's scope, to analyse and summarise the key trends and uncertainties involved in attempting to understand China's development. These are summarised at the end of Chapter 4 in sections 4.3 and 4.4 as two concise sets of bullet points. These conclusions concerning

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explanatory theory in International Relations, DPhil dissertation, Balliol College, Oxford University, also criticises Waltz's neorealism for its inattention to complex processes of historical change.

[23] Ibid., p. 205.

[24] Idem.

[25] For a good recent in-depth analysis of Cox's international critical theory and its impact on other critical theorists in the field of IR, see Anthony Leysens (2008) *The Critical Theory of Robert W. Cox: Fugitive or Guru?*, Houndmills, UK: Palgrave Macmillan.

[26] See for instance Wang Gungwu (2008) 'China and the international order: some historical perspectives', in Wang Gungwu and Zheng Yongnian (eds.) (2008) *China and the New International Order*, Abingdon, UK: Routledge.

[27] Martin Jacques (2009) *When China Rules the World: The Rise of the Middle Kingdom and the End of the Western World*, London: Allen Lane.

the processes of China's historical development and their implications for the future are then taken forward to Chapter 5 and the remainder of the scenario construction project.

Continuing the methodological process established at the end of Chapter 3 (outlined in Figures 3 and 4), Chapter 5, entitled 'Typology of expert forecasts and development of final 'learning' scenarios', is both the culmination of the research project as a whole and the key chapter in the study: this is because it constitutes the main primary research. In terms of content, Chapter 5 is an attempt to develop a typology of expert forecasts based on a selected group of expert writings concerning China's future (adapting the Delphi method), and on this basis to construct a set of 'learning' scenarios for use as a foundation for further study of China's future development. Chapter 5 addresses Steps 4 to 6 in Figure 3 ('Scenario construction process'), i.e. 'Construct scenario themes' (Step 4), 'Check for consistency and plausibility' (Step 5), and 'Develop final ('learning') scenarios' (Step 6), thus completing the scenario construction process. At the same time, it encompasses Parts 3 and 4 in Figure 4, the complete research design flowchart, i.e. 'Typology of expert China forecasts post-2000 (*constructing scenario themes, check for consistency and plausibility*)' (Part 3), and 'Attempt at scenario construction based on Parts 1 to 3 (*develop final scenarios*)' (Part 4). Part 5 in the complete research design flowchart, entitled 'Critical analysis of scenario construction project', is thus left for the final chapter of the thesis, Chapter 6, which is the concluding chapter.

Turning now to a detailed breakdown of Chapter 5's content, the bulk of the chapter corresponds to Step 4 in Figure 3 ('Construct scenario themes'). The process of constructing the themes is completed in stages, beginning with a set of tentative categories and progressing through the typology of expert forecasts theme by theme. By this means, an attempt is made to assess whether the initial suggested themes and the typology are a good match, and if not, to rethink the categories.

The opening section, 5.1, lays the foundation for the subsequent typology of expert forecasts by establishing working categories into which the expert texts are to be divided. There is thus an exploratory flavour to this section and the following ones (which include the typology), in the sense that the scenario themes developed in the opening section have the status of a set of tentative possibilities that need to be tested rather than being set in stone. In other words, the four themes which emerge from the analysis in the opening section – entitled 'China collapse', 'China stagnates', 'Peaceful

rise' and 'China threat' – require confirmation with reference to the typology, a task of assessment which can be performed only after the typology has been completed.

The second section, 5.2, concerns the selection of the 'panel' of experts whose views are to be categorised in the typology. As previously stated, the intention is to use a variation on the Delphi method of forecasting, which entails aggregating the views of a range of expert participants who have reached their conclusions without formal face-to-face consultation, in order to mitigate the possible effects of personal bias in the scenario construction process. [28] It is thus essential to select a reasonably representative sample of expert-authored texts written about China's future post-2000, identify what forecasts they are making (if any), and then to attempt to place these forecasts into the categories (scenario themes) within the typology. A 'panel' of 30 leading experts, from as wide a range of backgrounds (i.e. scholars, diplomats, journalists, etc.), areas of expertise (i.e. international relations, politics, economics, the environment, history, and so on) and nationalities (i.e. Chinese, other Asian, Western, etc.) as it is possible to include, who are authors of well-known texts on China's development, is therefore named in this section. Table 1 gives the names of these experts.

The sections that follow (5.3-5.45) concern the construction of the typology itself. This is conducted via an analysis of forecasts contained in texts written by the experts in the 'panel', with the aim of assessing the extent to which any forecasts made by these experts may or may not fit into one of the four scenario themes established in Chapter 5's opening section. To this end, the expert forecasts, such as they are, are evaluated in relation to the four scenario themes, 'China collapse', 'China stagnates', 'China threat' and 'Peaceful rise', in order to assess whether there is expert support for these scenarios. Experts whose work does not appear to fit into one of these categories, or who have not, for one reason or another, produced 'true' and consistent forecasts concerning the complex course of China's future development[29], are omitted from the working typology of forecasts and assessed in two subsequent sections, entitled 'Analysis of the remaining experts' and 'Analysis of the typology to assess its suitability for the purposes of scenario construction'. The working typology produced after the matching of forecasts to scenario themes is contained in Table 2, which reveals that 'true' forecasts made by

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[28] See Rescher (1998), p. 92, for a full explanation of the Delphi method.

[29] These criteria for assessing whether to include an expert's view in the typology of forecasts are discussed in more detail in Chapter 5's third section, entitled 'Criteria for assessing expert forecasts'.

six members of the 'panel' match, in each case, one of the four scenario themes: two experts (George Friedman and Gordon Chang) predict 'China collapse', one (Minxin Pei) forecasts 'China stagnates', two (Bill Gertz and John Mearsheimer) support 'China threat', and one (Qin Yaqing) favours 'Peaceful rise'.

Section 5.5, entitled 'Analysis of the typology to assess its suitability for the purposes of scenario construction', then follows. This section reveals that there appears to be an extra scenario theme – concerning the possibility of a future democratic China – which is not among the four initially proposed, and also that one of the initial themes, 'China stagnates', would seem to be better subsumed into the 'China collapse' theme, particularly in view of the fact that the views of the expert supporting it, Minxin Pei, appear to have shifted in recent publications towards the 'China collapse' scenario. The conclusion of the section is therefore that the categories in the typology need to be revised, replacing the 'China stagnates' theme with a democratic transition theme tentatively entitled 'China transforms': this theme, not considered at the outset but representing a view of China's future not encompassed by the other scenario themes, is supported unequivocally by one 'panel' expert (Bruce Gilley). The replacement of 'China stagnates' with 'China transforms' thus enriches the set of scenarios by presenting a view of China's future that is clearly distinct from the other three (unlike, after reassessment, 'China stagnates', which is ultimately difficult to separate from 'China collapse'). Furthermore, since Gilley's 'China transforms' is a 'true' forecast discovered during the process of constructing the typology, its addition indicates that the methodological process being followed is relatively robust in terms of being able to check for and correct the initial omission of an important alternative scenario.

Chapter 5's next section, 5.6, entitled 'Check for consistency and plausibility: re-evaluation of the typology with reference to key trends and uncertainties', represents Step 5 in the scenario construction process outlined in Figure 3. In this section each of the scenario themes developed in the typology of expert forecasts – i.e. 'China collapse', 'China transforms', 'China threat' and 'Peaceful rise' – is assessed in terms of the key uncertainties and trends identified in Chapter 4, as well as, to a lesser but still important extent, in terms of the views of the 'panel' of 30 experts explored in the typology. The process of checking for consistency and plausibility reveals that each of the four scenario themes meets the requirement for consistency with the evidence of the key trends and uncertainties, and all are quite plausible. The conclusion of this section

is that all four themes can be retained for the task of developing the final 'learning' scenarios.

The final part of Chapter 5 (sections 5.7-5.74) corresponds to the final step (Step 6) in Figure 3, and involves the writing of the final 'learning' scenarios. This process necessarily involves the use of creativity and imagination, but at the same time bias and wild imaginings are kept in check by referring both to the writings of the six experts from whose forecasts the scenarios derive and the key trends and uncertainties concerning China's future development that formed the conclusion of Chapter 4. The four finalised scenarios thus need to encompass the expert forecasts (as identified in the typology), the evidence (identified in Chapter 4), and the notion that the futures of socio-political phenomena evolve through complex, hard-to-predict processes (see Chapter 2). They also need to be well-imagined and memorable narratives, or they will fail to fulfil their function of stimulating further discussion and study of China's future. The final 'learning' scenarios are thus four consciously-fashioned alternative histories of the course of China's future up to the middle of the twenty-first century. They do not, it should once again be remembered, attempt to predict, but rather to present convincing, plausible narratives which can be used as the basis for further thought about both China's development and about scenario construction.

The four final 'learning' scenarios are as follows. The 'China collapse' scenario theme is renamed *'China in chaos'*, and concerns a future in which China has become weakened, fractious and fragmented in the wake of a major economic crisis and descent into anarchy, with power bases in several regions vying for influence. The 'China transforms' theme is rechristened *'Democratic transition'*, and constructs a narrative in which, under pressure from the public sphere, the CCP gradually introduces democratic reforms and relinquishes its hold on power: these reforms result in a freely-elected non-communist government by mid-century, as well as greater participation by the PRC in global governance and institutions. The third scenario theme, 'China threat', in the final writing process becomes *'Clash of the titans'*, and tells of a world in which rising tensions between the US and the PRC, while falling short of World War III, result in the carving-up of the globe into militarised spheres of influence, with China dominant in the Asia-Pacific region and the US and Russia elsewhere: dwindling natural resources will mean that this stand-off cannot remain unresolved for long. The last scenario theme, 'Peaceful rise', is renamed *'Living with the dragon'* in the final version. It tells

of a world dominated by a China still firmly under the control of the CCP: in this scenario, the PRC's economic growth and technological development have been sustained, enabling global expansion of Beijing's hard and soft power (contemporaneous with the decline of global US hegemony) even in the face of major demographic, environmental and economic problems.

The writing of the final 'learning' scenarios completes the scenario construction process outlined in Figure 3. However, the final stage in Figure 4 – namely, Part 5, 'Critical analysis of scenario construction project' – remains. This very necessary critical assessment of the success or otherwise of the use of scenario construction as a methodology for understanding both China's future (and the future of socio-political phenomena in the social sciences more generally) is conducted in the thesis' conclusion, Chapter 6. The analysis conducted in Chapter 6 suggests that the clear methodological framework developed at the end of Chapter 3, through its use of adapted Delphi method via a typology of expert forecasts and a system of checks for consistency and plausibility, is capable of ensuring at least a reduction in the problems of bias and wild imaginings often encountered in the use of scenario construction.[30] This confirms that the underlying strength of Shoemaker's basic scenario construction methodology, when combined with an adaptation of Delphi method via a typology of expert forecasts, can produce a set of scenarios that are both relatively methodologically rigorous – a perceived lack of methodological rigour being a chief criticism of the possible use of scenario construction in the social sciences[31] – while simultaneously developed out of the full range of expert opinion rather than just the brains of one or a few individuals.

Chapter 6 draws the conclusion that the research project as a whole, whatever flaws and limitations it may possess, adds value in a scholarly sense for three main reasons. First, it identifies the need for political science and IR in particular and the social sciences in general to address the future of socio-political phenomena and provides a basis for further scholarly debate and research. Second, it utilises a combination of scenario construction and adapted Delphi method (via a typology of expert forecasts) to develop a novel methodological approach to understanding the future in the social sciences which appears to be relatively robust and rigorous. And third, it generates 'learning' scenarios that can be used as the basis for fruitful discussion of China's future. For all

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[30] See Shoemaker (1995), p. 38.
[31] See Neumann and Øverland (2004) for more discussion of this point.

these reasons, despite clear shortcomings produced by the project's extensive breadth and ambition, the conclusion reached is that the research adds value to academic debates in the sub-fields of future studies and China studies as they relate to political science, IR and the social sciences.

Overall, then, this thesis presents an exploratory examination of approaches to understanding the future in the social sciences in general, and in political science and international relations in particular through an attempt to understand China's future. It is not expected to produce definitive answers (which may in any case not be achievable), but simply to raise awareness of the importance of understanding the future in political science and the social sciences, and to produce a basis for further research in both this area and in the area of China studies. Possibly the most important focus of the thesis is the attempt to confirm Neumann and Øverland's sage observation that "The future is unknowable, but it does not follow that the *methods* [their italics] that we use to discuss future probabilities cannot be held to scientific standards."[32] By attempting to establish a firm methodological basis for the examination of the future, while laying out clearly the limitations and possibilities of such work, this research project is intended to delineate the boundaries of what can and cannot be studied as a basis for further research into the scholarly understanding of approaches to the future in the social sciences.

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[32] Ibid., p. 265.

CHAPTER 2:   THEORY

2.1   Overview: the future and China

Setting out to examine and to attempt to understand a phenomenon as complex as the unfolding future of China demands setting some theoretical boundaries and specifying areas of literature with which the study will – and will not – deal. Although at first sight this seems an unenviable task of condensing a vast body of work, breaking the literature down into sections via a taxonomical (and simultaneously analytical) approach can make the seemingly insurmountable tracts of information more manageable.

Two main areas of research (in terms of bodies of literature) present themselves as relevant to the overall aims of this study. The first is the literature related to predicting, forecasting and assessing the future in the social sciences, and especially, given the nature of this thesis, in political science and international relations. Because, for reasons that will become apparent in the course of this chapter, it is difficult to look at the social sciences literature concerned with the future without also thinking about the way predictions are made in the natural sciences, a short section also needs to be devoted to the latter area as explicatory material. This has to be done in order to distinguish factors which have more bearing in, respectively, the natural and social sciences in the field of future studies, and thence to decide which aspects are more (and less) relevant to this study.

The second area of research literature that needs to be examined is that related to the study of China itself. This means summarising and analysing work on China that is concerned with understanding discrete aspects of China's past and present and how they could be connected to potential future outcomes and possibilities. Scholarly studies of China's history, culture, philosophy, society, economy, environment and, above all, politics therefore must be taken into account in order to understand how these various pieces of the puzzling Chinese reality fit together or conflict with each other, and thence, later in the study, how their combined development may affect the future.

This chapter will examine the literature in natural, social and political science concerning theorising about the future, but distinct from a discussion of methodology for analysing the future in the social sciences, which will be conducted in the following chapter, Chapter 3. The large body of literature concerning China's future, i.e. (as mentioned above) China's politics, economics, environment, history, culture, philosophy and society will be analysed in Chapter 4. The concluding section to that chapter will thereafter attempt to draw together the conclusions of this chapter, the methodology chapter (Chapter 3) and the China literature chapter (Chapter 4) in order to comprehend both how China's past and present may affect its future, as well as how well the scholarly study of the future in the social sciences can explain potential outcomes related to the Chinese sphere.

2.2 Theories of the future: an overview

The Nobel Prize winning physicist Niels Bohr famously remarked: "Prediction is very difficult, especially if it's about the future."[33] This short statement, in spite of its apparent triteness, represents one of the greatest practical and theoretical problems that has confronted and fascinated mankind for millennia: how to find a way to know what is coming, in order either to act on that knowledge or to influence outcomes – as far as possible – to one's advantage.

Although it may at first sight seem that little progress has been (or can be) made in terms of understanding the future, in fact considerable headway has been achieved in certain fields of expertise, particularly in the last few centuries and particularly in the field of the natural sciences.[34] Indeed, the success of Kepler, Galileo, Copernicus, Brahe and others in predicting the future movements of astronomical bodies such as comets and planets, and of Newton, Einstein, Edison and their many scientific forebears and successors in predicting the effects of physical forces such as gravity and electricity on bodies has been so great, and has allowed humans to so alter their environment through technological innovations, that we have begun to think that it should therefore

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[33] Quoted in David Orrell (2007) *The Future of Everything: The Science of Prediction*, New York: Basic Books, p. 1.
[34] For a detailed examination of the relative success of the natural sciences in prediction see Orrell (2007), Chapters 2 and 3, and Nicholas Rescher (1998) *Predicting the Future: An Introduction to the Theory of Forecasting*, Albany: State University of New York Press, Chapters 9 and 10.

eventually be possible to predict *everything* – even events involving the social interactions of human beings.

Herein rests probably the most significant problem to be reviewed in this chapter. Is it possible, at the levels of both theory and practice, to apply the successful predictive methods of the natural sciences to the social sciences, as some believe? Can, for example, the deterministic principles of Newtonian physics be applied to economics or politics in order successfully to predict outcomes in these fields? Or, alternatively, as others argue, are the natural and social sciences simply two different enterprises requiring distinct theoretical approaches? And if the predictive approaches used to predict outcomes so successfully in the natural sciences are indeed not serviceable in the social sciences, then are there alternative, more suitable approaches that could – or should – be used in economics, sociology, history and, above all for our purposes here, in political science and international relations?

This is the set of theoretical questions that will be dealt with in this chapter. Above all, the priority here is to search for a way to construct a sound framework of theoretical principles for addressing the future in the social sciences, whether it be based on the successful approaches used in the natural sciences or on something else which is specific to the social sciences. The following sections will therefore critically examine in turn the records of predictive and other approaches to the future in natural sciences, social science, and lastly political science and international relations theory. The primary aim is to draw some conclusions about theoretical frameworks and perspectives which may be used to study future outcomes and possibilities in the social sciences with some expectation of relative success compared to those which can clearly be demonstrated to be less appropriate.

2.21   The future in the natural sciences

It should be remembered, as mentioned above, that the natural sciences have been spectacularly more successful in terms of effectively predicting outcomes (which has enabled the development of many important new technologies, such as cars, computers, electric lights, and so on) than the human (social) sciences since the Middle Ages. In

fact, so abysmal has been the record of attempted prediction in the social sciences[35] that many social scientists, among them the influential IR scholar Kenneth Waltz, have been led to the conclusion that it is only by mimicking the theoretical approaches of natural sciences such as Newtonian physics that the social sciences can develop sound theoretical approaches to prediction. [36] This section will therefore examine the relationship of theory and prediction in the natural sciences, and the suitability of theoretical approaches used in the natural sciences to the analysis of the future in the social sciences.

There are some key questions to be examined before we go further. These are the following. What kind of prediction takes place in the natural sciences? Are there some physical and natural processes that are inherently predictable, and others that are less so? Are social phenomena essentially of a radically different type to phenomena in the natural sciences, and thus intrinsically unpredictable? In other words, to what extent or in what areas can the natural sciences accurately understand causal processes that affect complex outcomes in the long term future? Is there a fundamental difference between the predictions made by, for instance, Newtonian physics, Darwinian evolutionary theory, Mendelian genetics, and other areas of the natural sciences, and the kinds of predictions that are needed in order to understand the hard-to-predict outcomes of the complex interactions of social phenomena?

Beginning with Newtonian physics, it can be said that Newton's three laws of motion *predict* outcomes, just as astronomers can *predict* the paths of comets; but this type of scientific prediction consists in understanding the physical effects of movements of certain physical bodies according to the observation and analysis of fixed natural processes such as heating, friction, earth's gravity, and so on. Prediction of this type may not, as even natural scientists themselves are becoming aware, be applicable to phenomena which occur via more complex, chaotic, non-linear, and less easily predictable processes, such as weather[37], environmental change[38], or certain genetic

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[35] See, for instance, Philip Tetlock's (2005) *Expert Political Judgment: How Good Is It? How Can We Know?*, Princeton: Princeton University Press, for a detailed analysis of political scientists' inability to predict accurately.

[36] See Kenneth Waltz (1979) *Theory of International Politics*, Reading, MA: Addison-Wesley for an extended discussion of his perspective on the failings of political science theory as it existed up to his writing of the book, and his perception of the need for a more streamlined approach to theorising which would use an approach akin to that of Newtonian physics.

[37] See Orrell (2007), Chapter 4 and William A. Sherden (1998) *The Fortune Sellers: The Big Business of Buying and Selling Predictions*, New York: John Wiley & Sons, Chapter 2.

and epigenetic effects.[39] Newtonian physics is theoretically both mechanistic and deterministic; it sees the universe as a machine with fixed rules guiding its movements. On the other hand, attempting to use it to forecast how the interactions of complex phenomena (which do not appear to obey simple mechanistic cause-and-effect rules) will affect future outcomes may not be so successful.[40] And even those phenomena apparently well predicted by Newton's theories may turn out to be less deterministic and more complex than previously thought, thanks to the discoveries of the field of quantum physics which has emerged from the theories of Albert Einstein and others.

It can thus be seen that even within the natural sciences there are theoretical and practical problems with prediction in many areas that are pushing scientists to look beyond the boundaries of simple deterministic Newtonian cause-and-effect mechanics. In biology, for example, the perspective taken by the scientist can depend, as Robert Jervis astutely points out, on whether s/he is looking at phenomena at the level of cells or molecules (units) or organisms (systems).[41] Evolutionary phenomena (i.e. Darwinian natural selection) can also be studied in terms of "the reciprocal relations between units and the context which they form and by which they are constrained."[42] As far as international politics is concerned, systems-level thinking by natural scientists has an obvious equivalent in the problem of level of analysis in the international system of sovereign states, which was created by the negotiation of the Peace of Westphalia in 1648. In such a system, should the system (the international order) be seen as causing the behaviour of the agents (states), or the behaviour of the agents as creating the system? Or does the reality reside, as complexity theory suggests, in the complex interaction between system and agents?

It is for the above reasons that the new scientific field of complexity theory (aspects of which are also sometimes loosely referred to as 'chaos' theory) began to be explored in depth by scientists from a broad range of fields in the late 1980s, particularly at the

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[38] See O.H. Pilkey and Linda Pilkey-Jarvis (2007) *Useless Arithmetic: Why Environmental Scientists Can't Predict the Future*, New York: Columbia University Press.

[39] See Nessa Carey (2012) *The Epigenetics Revolution: How Modern Biology is Rewriting Our Understanding of Genetics, Disease, and Inheritance*, New York: Columbia University Press.

[40] See William A. Sherden (1998) The Fortune Sellers: The Big Business of Buying and Selling Predictions, New York: John Wiley & Sons, p. 7. Chapters 2 and 3 of Orrell (2007) have a fuller discussion.

[41] Robert Jervis (1997) *System Effects: Complexity in Political and Social Life*, Princeton: Princeton University Press, p. 13.

[42] Ibid., p. 17.

Santa Fe Institute in the USA.[43] Complexity theory attempts to explain non-linear, emergent phenomena (such as the weather) that occur at 'the edge of chaos', via feedback loops, path dependency, tipping points, emergent phenomena and other complex, evolving mechanisms, rather than through stable and balanced equilibrium effects. It could, therefore, be the case, as Stuart Kauffman suggests, that solutions to the problems of prediction in the social sciences (e.g. in economics and politics) may one day emerge from the research being done into complexity at centres like the Santa Fe Institute.[44] Certainly this possibility is currently being followed up some scholars in political science, IR and related social sciences, as a recent issue of the interdisciplinary journal *Critical Review* devoted to Robert Jervis' (1997) *System Effects* demonstrates.[45]

Complexity theory, derived from its beginnings in the natural sciences, thus has unexpected implications for the social sciences, as is gradually being recognised by scholars such as Kauffman and Jervis.[46] If there were, for instance, some evidence that social phenomena occur on the 'edge of chaos' via tipping points, path dependencies, emergent phenomena, feedback loops and non-linear effects – a supposition which is often summarised by the terms the 'butterfly effect' and 'chaos theory' – rather than via balance and equilibrium, this would be a conclusion that would have a profound impact on important systems theories in international politics such as balance of power[47], Waltzian neo-realism[48], and power transition theories.[49] It would not necessarily cause these theories to be overturned, but it might cause them to be reformulated or reshaped.

In short, there appear to be two apparently diametrically opposed theoretical approaches to the natural sciences that are relevant to the problem of prediction in the social sciences. The first is the Newtonian cause-and-effect model – often called the 'billiard-ball' model – derived from molecular physics, which perceives mechanistic and predictable linear processes (or 'laws') at the heart of phenomena (and appears to have

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[43] See M. Mitchell Waldrop (1993) *Complexity: The Emerging Science at the Edge of Order and Chaos*, London: Viking and Stuart Kauffman (1995) *At Home in the Universe: The Search for Laws of Complexity*, London: Viking for more detailed accounts of the beginnings of complexity theory.

[44] See Kauffman (1995), Chapter 12, and also Waldrop (1993) for the history of the Santa Fe Institute.

[45] See *Critical Review: A Journal of Politics and Society*, Vol. 24, Issue 3 (2012), which is a special issue on the topic of 'Robert Jervis' System Effects after 15 years'.

[46] See Robert Jervis (1997).

[47] The classic work on balance of power in IR is Hans Morgenthau (1948) *Politics among Nations*, New York: Knopf.

[48] See Waltz (1979).

[49] The two main proponents of power transition theories are A.F.K. Organski and Robert Gilpin. The seminal works are A.F.K. Organski (1958) *World Politics*, New York: Knopf, and Robert Gilpin (1981) *War and Change in World Politics*, New York: Cambridge University Press.

influenced Waltz's theoretical approach to neo-realism[50], an issue to which we will return in due course). The other is complexity theory, with its conception of organic, non-linear, difficult-to-predict interactions within complex systems, which sometimes teeter on the edge of chaos via feedback effects between system and agents. It may ultimately turn out to be the case that the difference between the two approaches, as far as the social sciences are concerned, is simply one of emphasis or perception, akin to the way quantum physics has unearthed new levels of more complex activity beneath the surface of classical Newtonian physics. Nevertheless, it is necessary to have the distinction between these two theoretical perspectives (which consists chiefly in the degree of complexity, linearity, predictability and regularity perceived in the phenomena being theorised about) clear as we enter our discussion of the study of the future in the social sciences.

2.22 The future in the social sciences

Across the social sciences – which means the fields of political science, economics, history, sociology, anthropology, human geography, psychology, law, linguistics, media studies, and other related sub-fields – the future has been dealt with in a variety of ways, often depending on a combination of fashion and the contemporary needs of a particular discipline. The theoretical approaches and methodologies used have, however, often crossed from one field to another. Sometimes such cross-fertilisation has occurred while, ironically, a theory is beginning to fall into disuse or is becoming discredited in the discipline of origin. For example, as it was becoming standard practice to take a positivist approach to studying phenomena in comparative politics during the 1990s[51], the long-used quantitative approaches of classical and neo-classical economics began to be questioned by some practitioners in, and observers of, the field, resulting in increasing scepticism about mainstream economic theory. [52] In fact, in the

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[50] See Waltz (1979), Chapters 1 and 2, which contain no fewer than six separate references to Newton in the course of Waltz's explanation of what constitutes a properly worked out theory. To give just one example out of these six, in asserting that "Theories explain laws" (p. 6), Waltz cites Newton's theory of universal gravitation.

[51] Two examples of the use of positivist, quantitative methodologies in works of comparative politics which had a major impact on the field during the 1990s are Arend Lijphart's (1999) *Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries*, Yale University Press, and Robert D. Putnam et al's (1993*) Making Democracy Work: Civic Traditions in Modern Italy*, Princeton: Princeton University Press.

[52] There are several accounts of the perceived failure of the 'laws' of classical and neo-classical economic theory to account for real-world economic phenomena, particularly in the wake of the advent of the global economic crisis in 2007-8. See for instance Tomáš Sedláček (2011) *Economics of Good and Evil: The Quest for Economic*

case of the use of quantitative studies in political science (and in particular in comparative politics), a trend which became increasingly widespread after the so-called 'behavioural revolution' of the 1950s and 1960s and the impact of economic game theory on US political theory and practice in the late 1960s and early 1970s[53], there does indeed appear to have been considerable influence from the apparently successful law-like theorising of classical and Keynesian economics[54], as well as from the experimental methods of natural science. Indeed, game theory, which was employed by US Defense Secretary Robert McNamara in the Vietnam War (and, by McNamara's own admission, with mixed results[55]) and by the USA to justify its policy of nuclear deterrence during the Cold War, was derived from principles originally intended for use in economics.[56] Similarly, Kenneth Waltz's theory of world politics as a system based on the interaction of billiard-ball sovereign states within an anarchic structure is directly based, according to substantial sections of his own argument, on the economic system of firms operating within a free market system.[57]

It should be noted that predicting or understanding future outcomes is more intrinsically important to some fields of social science than others. This is, for instance, clearly the case in economics, which often aims to predict, through mathematical modelling or other quantitative means, the results of particular policies on markets. In this, although it mines data from the past to create theories, economics can be said to be a *future-orientated* field, whereas the future can be said to be of peripheral interest at most in fields which study extant phenomena, such as linguistics or anthropology. For this reason the focus of this section will be on fields and sub-fields in the social sciences which are future-orientated. These, in particular, include economics, sociology, law (which deals with potential legislation affecting future outcomes, such as possible

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Meaning from Gilgamesh to Wall Street, Oxford: Oxford University Press, David Orrell (2010) *Economyths: Ten Ways That Economics Gets it Wrong*, London: Icon Books, and Steve Keen (2001) *Debunking Economics*, New York: Zed Books.

[53] See James D. Morrow (1994) *Game Theory for Political Scientists*, Princeton: Princeton University Press, p. 2 for a concise account of the development of game theory in the social sciences.

[54] John Maynard Keynes (1936) *The General Theory of Employment, Interest and Money*, London: Palgrave Macmillan.

[55] In the 2003 documentary film *The Fog of War: Eleven lessons from the life of Robert McNamara*, McNamara admits on camera that he made serious policy mistakes while applying the principles of game theory during the Vietnam War. Morrow (1994, p. 2) also notes that "the performance of game theory lagged behind its promise."

[56] Game theory originated with John von Neumann and Oskar Morgenstern's (1944) *Theory of Games and Economic Behavior*, Princeton: Princeton University Press.

[57] Waltz (1979), pp. 89-91. To confirm this point, on page 94 he explains that "Just as economists define markets in terms of firms, so I define international-political structures in terms of states."

changes to intellectual property laws due to the advent of the internet) and demographics (i.e. the study of past, present and future population trends). Surprisingly, mention must also be made of history, some of whose most significant practitioners (e.g. Vico, Gibbon, Braudel, and Spengler) attempt to explain long-term historical trends and/or the possibility of historical processes and cycles.[58] Political science is also significantly future-orientated in a number of important aspects, but a discussion of these will be left for the next section.

Beginning with economics, then, there is a wealth of evidence to suggest that the record of predictive accuracy in this most quantitatively future-orientated of all social sciences has been decidedly patchy. In recent years, for instance, the inability of economists to foresee the current global financial crisis using their much-vaunted mathematical models and other quantitative tools has cast doubt on the entire enterprise of 'scientific' economic forecasting as it is currently practised by credit rating agencies and financial institutions.[59] Nicholas Rescher explains that the types of modelling used in economics, despite appearances, are just not equivalent to law-based modelling in, for example, physics, in that economics has "no prior, independent, well-confirmed laws on which to base its operations."[60] This is because the process of checking theories through rigorous experimentation which establishes empirical evidence for laws in physics is (thus far) missing in economics. Rescher goes on to attribute "the mixed-to-poor predictive performance of economic models" to the fact that "the processes being modelled are themselves almost invariably volatile", as well as to "the inherent complexity (nonlinearity) of economic systems."[61] David Orrell agrees that "the market is practically impossible to predict"[62], which makes the 'science' of quantitative economic forecasting look like a "narcissist, spending its days preening in front of the mirror, in thrall to its own beauty and efficiency."[63] Economists' obsession with what

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[58] See: Giambattista Vico (1744, 1999) *New Science (3rd edition)*, translated by David Marsh, London: Penguin; Edward Gibbon (1782) *The History of the Decline and Fall of the Roman Empire* (nowadays available in various e-book editions); Ferdinand Braudel (1993) *A History of Civilisations*, translated by Richard Mayne, New York: Allen Lane; and Oswald Spengler (1926) *The Decline of the West*, New York: Alfred A. Knopf. See also R.G. Collingwood (1994) *The Idea of History* (revised edition), Oxford: Oxford University Press for an excellent account of academic historians' concern with long-term cycles and patterns of history.
[59] See Orrell (2010) and Nate Silver (2012) *The Signal and the Noise: The Art and Science of Prediction*, London: Allen Lane, Chapter 1.
[60] Rescher (1998), p. 197.
[61] Idem.
[62] Orrell (2007), p. 264.
[63] Ibid., p. 266.

Ludwig Wittgenstein called the "crystalline purity of logic" [64] of their own 'perfect' theories makes them fail to understand that

> The underlying system is uncomputable, so models rely on parameterizations that introduce model errors. As the model is refined, the number of unknown parameters increases. The multiple feedback loops that characterize such models also make them sensitive to even small errors in parameterization. As a result, the models are highly flexible and can be made to match past data, but accurate predictions of the future remain elusive.[65]

Similarly, William Sherden points out that the economy should be reclassified as a 'complex nonlinear adaptive system', i.e. one which "does not conform to the general principles of the Theory of General Equilibrium, central to which are negative feedback loops that dampen shocks and restore economic stability."[66] In other words, according to the weight of scholarly evidence and analysis, the science of economics appears to be better explained with reference to the hard-to-predict (or unpredictable), non-linear complexity theory model we looked at in the previous section than by the linear predictability of Newtonian physics and nomothetic, cause-and-effect theorising.

Nassim Nicholas Taleb's work on 'black swans' confirms this conclusion. [67] His conclusions are relevant to economics as well as the broader social sciences. Taleb's thesis, borne out by numerous real-world examples, is that economists (as well as financial managers, politicians, and other social scientists) need to prepare for highly improbable occurrences, or black swans, because although these are unlikely to occur, they always do sooner or later, and they have a disproportionately large impact on both markets and people's lives. In economics, a black swan would be, for example, a massive market crash such as the Wall Street Crash of 1929. In history it could be a sudden, hard-to-foresee event such as the 1989 'velvet revolutions' in Central and Eastern Europe or the start of a World War. In politics it could be a sudden electoral victory by an unexpected candidate, such as Hitler's election as Chancellor of Germany in 1933. Such black swans, by their essential nature, tend to make nonsense of linear

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[64] Ludwig Wittgenstein (1953, re-issued 2009) *Philosophical Investigations (fourth edition)*, translated by G.E.M. Anscombe, P.M.S. Hacker and Joachim Schulte, Chichester, UK: Blackwell Publishing, p. 51e. Wittgenstein is here criticising his own earlier work, the (1921) *Tractatus Logico-Philosophicus*, for being insufficiently grounded in real-world phenomena.
[65] Orrell (2007), p. 266.
[66] Sherden (1998), p. 73.
[67] Nassim Nicholas Taleb (2008) The *Black Swan: The Impact of the Highly Improbable*, London: Penguin.

predictions extrapolated from current historical trends, and thus of much statistical analysis in economics and the social sciences. They throw carefully-worked-out mathematical models into chaos. They also support the idea that economics and the social sciences in general need to look to complexity theory (or some other non-linear, perhaps even non-quantitative theory) to explain the hard-to-predict workings of real-world phenomena.[68]

One social science which has long appeared to be more amenable to accurate prediction is demographics, i.e. population forecasting. However, as Sherden demonstrates, demographers' track record of forecasting future population trends only approximates the accuracy of "those made by simple, naïve methods, such as using a ruler to extend past trends into the future."[69] This means that their forecasts will be more accurate during historical periods of low volatility and more inaccurate at times of catastrophe, rapid change or large-scale upheaval, such as during wars and famines. In other words, demographers, like economists, are caught out by unpredictable black swans and have difficulty foreseeing sudden changes in parameters that cause spikes or crashes in population.[70] They are also more accurate over the short- to medium-term (i.e. up to about three decades ahead[71]), and increasingly inaccurate over the long-term, to the extent that "prediction over the longer run is deeply problematic."[72] For instance, a forecast made by a panel of specialists at the behest of the New York Times in 1931 predicted that US population in 2011 would be about 160 million, whereas the present US population is closer to 320 million.[73] Sherden ends his pessimistic analysis of the predictive skills of demographers by concluding that they neither have true forecasting skill, and nor has their "understanding of population dynamics much improved over time."[74]

If demographics clearly needs to improve or adapt its use of mathematical modelling, statistics and other quantitative techniques, and take into account nonlinearity, the complex interaction of multiple factors, and black swans such as environmental exhaustion due to over-population and over-exploitation of natural resources, so do

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[68] See Jervis (1997).
[69] Sherden (1998), p. 138.
[70] Orrell (2007), p. 282.
[71] Ibid., p. 281.
[72] Rescher (1998), p. 200.
[73] Ibid., p. 201.
[74] Sherden (1998), p. 138.

other social sciences such as history, sociology, political science and, as discussed above, economics.[75] In fact, if one thinks about wars, societies, global trade, political systems, and so on, it quickly becomes apparent that the complex social phenomena studied in the aforementioned four fields are inextricably interlinked in terms of being embedded in historical processes. Thus, understanding the historical patterns, feedback effects, path dependencies, emergent phenomena and black swans that affect outcomes needs to be as interdisciplinary and wide-ranging as possible if the future is to be better anticipated or influenced. This can be achieved by taking into account as much information and analysis as possible, both quantitative and qualitative, in order to steadily refine predictive techniques, as statistician and expert in political prediction Nate Silver (who predicted the results of the 2008 and 2012 US Presidential elections) points out.[76] Interdependence between real-world social phenomena needs to be accounted for by cross-fertilisation between disciplines, which is in itself inevitable given the aforementioned linkages between academic fields. Indeed, the influence of some of the most important social scientists of previous centuries has spread into multiple fields, making them difficult to pin down as belonging to one academic discipline. Karl Marx (a political economist and philosopher), Giambattista Vico (a historian, political philosopher and jurist), Max Weber (a sociologist, philosopher and political economist) and Adam Smith (a political economist and moral philosopher) are just four examples of famous scholars and polymaths who epitomise what might be termed a natural crossover tendency in the social sciences. Of course, this is largely to do with the fact that in previous centuries the social sciences were not as specialised as they are today, and scholars naturally took an interest in a wider range of subjects.

An examination of their works reveals that Marx, Vico, Weber and Smith were all concerned not only with the past and present, but also, in one form or another, with the future. Marx and Vico, for example, in their different ways tried to understand historical cycles and predict what the next 'stage' in human history would be. One fundamental difference between them is that while Vico made no personal attempt to influence the course of history because he saw it as a cycle that inevitably repeats through certain fixed stages, Marx believed that socioeconomic revolution should be

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[75] Orrell (2007), Chapter 7.
[76] See Silver (2012).

encouraged because it is the key to future human progress. [77] Marx's work, in other words, has an undeniable normative focus – a concern with what *ought* to be, apart from what merely *will* be. This normative focus on the emancipation of mankind, typically via class warfare, typifies all subsequent Marxist and Marxist-influenced work. It also means that Marxism must be seen, even if in the wake of the victory of capitalism over communism a number of its central doctrines are now perceived as mistaken or over-emphasised, as being inherently future-orientated and therefore ineluctably relevant to any discussion of the future in the social sciences. In the contemporary era, the influence of Marxism and its focus on emancipation and change to the existing political economic system can be seen in the work of Frankfurt School critical theorists (notably Jürgen Habermas), as well as in the ideas of a number of critical IR scholars such as Immanuel Wallerstein, Andrew Linklater and Robert W. Cox.[78]

Weber, on the other hand, is arguably more concerned with developing a nomothetic theory through which to explain causal relationships extending from the present into the future. In *Economy and Society*, Weber states that "[s]ociology ... is a science concerning itself with the interpretive understanding of social action and thereby with a causal explanation of its course and consequences."[79] Weber attempts to understand and predict causal relationships using what he calls 'ideal types', which he defines as "a conceptually pure type of rational action".[80] These entirely hypothetical but useful formulations, he claims, allow one to theorise about outcomes by assessing the extent of the real-world deviation from the 'pure type of rational action' and compensating for it by adapting the 'ideal' prediction to the 'irrational' elements. By this means, the 'irrational' elements, such as the influence of human emotions such as greed and fear on phenomena like the stock market, can be exactly pinpointed and their effects encompassed in the examination of the causal process, thereby allowing one to explain (historically) or predict outcomes.[81]

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[77] See Karl Marx and Friedrich Engels (1848) *The Communist Manifesto* (available from many online sources) and Vico (1744, 1999).

[78] For an excellent, concise discussion of the influence of Marxism on critical theory in IR, including good accounts of the work of Habermas and Cox, see Andrew Linklater (1996) 'The achievements of critical theory', in Steve Smith, Ken Booth and Marysia Zalewski (eds.) *International Theory: Positivism and Beyond*, Cambridge: Cambridge University Press. This volume also contains Immanuel Wallerstein's 'The inter-state structure of the modern world system', in which Wallerstein explains his Marxist-derived view of contemporary international relations.

[79] Max Weber (1968) *Economy and Society: An Outline of Interpretive Sociology*, New York: Bedminster Press, p. 4.

[80] Ibid., p. 6.

[81] Idem.

If Weber's ideal types appear to be a precursor of contemporary studies of the effects of collective human socio-psychology on market forces, then Adam Smith's notion of the effects of an 'invisible hand' on price movements, supply and demand, and other economic phenomena has been even more influential. According to Smith, as each participant in a market acts out of self-interest, the collective effect of this activity is to drive market forces in a rational direction that benefits all. He explains: "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest."[82] This principle of markets being driven unintentionally by the self-interest of individuals in a direction that benefits the collective is the central principle of contemporary free market economics. It underlay, for instance, the work of the Chicago school led by Milton Friedman, which was the basis for Reaganomics and Thatcherism, and predicted that reducing government intervention to a minimum would enable markets to spontaneously find an ideal course via the mechanism of Smith's invisible hand. The consequences of Friedman's predictive theorising can today be seen, as Nate Silver and Ha-Joon Chang point out, in the disastrous free market credit free-for-all – Susan Strange dubbed it 'casino capitalism'[83] – that began in the US in the 1980s and ultimately led to the present global financial crisis that began in 2007.[84]

Be that as it may, the theories of Vico, Marx, Weber and Smith can all thus be seen to have distinct future-orientated, predictive and/or normative elements. As far as Marx and Smith are concerned, certain of these future-orientated, normative, predictive elements, once applied, resulted in major (but not entirely as predicted) historical effects. These effects were manifested in the communist versus capitalist (Marx versus Smith) ideological struggle of the Cold War with the results we see today. The outcome of this struggle (i.e. capitalism's victory over communism, followed by problems surrounding the application of free market economics) was clearly not entirely what the proponents of these two normative viewpoints necessarily expected to happen, suggesting that the theories did not produce the anticipated outcomes and are in need of partial revision or outright rejection. Such reformulation or reconfiguring could

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[82] Quoted by Orrell (2007), p. 92.

[83] Susan Strange (1997) *Casino Capitalism*, Manchester: Manchester University Press. Another book with the same title, which looks at the current global financial crisis as a by-product of the spread of the American financial system, is Hans-Werner Sinn's (2010) *Casino Capitalism: How the Financial Crisis Came About And What Needs to be Done Now*, Oxford: Oxford University Press.

[84] See Silver (2012), Chapter 1 and Ha-Joon Chang (2010) *23 Things They Don't Tell You About Capitalism*, London: Allen Lane, Introduction.

perhaps be achieved by subsuming the Marx versus Smith extremes, combined with other elements (such as Vichian and Weberian ones, as well as the work of Robert Jervis and other contemporary theorists) in some way into a larger, more complete theory that would fit within (or extend and build upon) the complexity theory project begun by the Santa Fe Institute: this is a task that needs further research in another place, being beyond the limited scope of this thesis.

To sum up this section, it has been demonstrated that a number of aspects of social sciences theory are future-orientated, normative and/or predictive. These have had a major impact on economic theory and practice in particular, but also on other fields, including political science. Marxism, for instance, is one school of theory that, from its nineteenth century beginnings in theorising about the connections between politics and economics, had a major normative impact on twentieth century political history, albeit not at all in the way its creator envisaged. Adam Smith's invisible hand theory, transferred via Milton Friedman to the economic policies enacted in the US, the UK and ultimately the whole world from the 1980s onwards, is another case of the future-orientated impact of social science theorising on economic and political outcomes. In addition, the Newtonian/complexity divide that was examined in the first section of this chapter has also here been discussed with relation to the social sciences, with the tentative conclusion that complexity theory (i.e. theorising about complex systems containing emergent phenomena, feedback effects, and so on) currently appears to be a more promising avenue for research than mechanistic, nomothetic, cause-and-effect theorising. What remains for the next section is to examine the study of the future within the connected fields of political science and international relations, by examining theories that are directly focussed on understanding specifically political outcomes.

2.23   The future in political science and international relations

As already stated, there are overlaps between the study of the future in politics and in the remainder of the social sciences, clearly seen in the historical impact of Marxism and free market economics on major twentieth century political outcomes (analysed in the preceding section). However, there is a sizeable body of future-orientated theorising that is specific to – or originates from – political science and international

relations (IR). This section will therefore examine theoretical literature that resides specifically within the fields of political science and IR, in order to understand its impact on those fields, as well as its significance for this project, while continuing to bear in mind the broader context of theorising about the future in the social and natural sciences already discussed.

For better or for worse, academic political science and IR, as they are conceived today, arose out of European political philosophy. An examination of theorising about politics and political systems in a normative (and therefore future-orientated) sense, therefore, needs to begin with the work of the great seventeenth- and eighteenth-century European political philosophers such as Hobbes, Locke, Rousseau and Kant. Chronologically, Thomas Hobbes was the first of these philosophers to develop a coherent system of normative political philosophy – and thus it was his framing of the debate about political systems that set the agenda to which all his successors would have to react. It is necessary to consider his great work *Leviathan*[85] and its influence on political science and IR up to the present day before moving on to the remainder of Western political philosophy.

In contemporary IR, Hobbes is generally classified as both a realist and a pessimist. His perception of life in 'a state of nature' as "nasty, brutish and short"[86] and a 'war of all against all' has been hugely influential on realists ever since, up to and including the neo-realist school led by Kenneth Waltz, whose 1979 *Theory of International Politics* has been called "the canonical neorealist text ... acknowledged even by non-realists"[87], as well as "the most influential book on International Relations theory of its generation".[88] The discussion by Waltz (and many other IR theorists within the realist tradition) of the anarchic international system made up of billiard-ball states[89] clearly owes a great debt to Hobbes' state-of-nature-based theorising about the construction of a national polity based on fear and prevention of anarchic violence.[90] Hobbes has also

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[85] Thomas Hobbes (1651, 1909) *Leviathan*, Oxford: Oxford University Press.
[86] Ibid., p. 99.
[87] Adam R.C. Humphreys (2006) *Kenneth Waltz and the limits of explanatory theory in International Relations*, Doctoral thesis, University of Oxford, p. 4.
[88] Chris Brown (2005*) Understanding International Relations* (3rd edition), Basingstoke: Palgrave Macmillan, p. 45.
[89] See for example Arnold Wolfers (1962) *Discord and Collaboration: Essays on International Politics*, Baltimore: The Johns Hopkins Press, pp. 19-24.
[90] Hobbes' ideas clearly owe a great deal to the time and place in which he lived, i.e. mid-seventeenth century England, whose defining event was the English Civil War. This produced a great deal of death and destruction,

exerted a major influence on social contract theory in his conception, depicted on the original cover of the book, of the state as a 'leviathan' formed out of the bodies of the people and led, as a necessary evil, by a sovereign to whom the people give up their rights in return for protection. This set the stage for others such as Rousseau and Locke to counter Hobbes' version of the social contract with their own, rather less pessimistic ones[91], and, in the contemporary era, for John Rawls to reconfigure Hobbes' pessimistic social contract and state of nature theory as an optimistic Kantian 'theory of justice' based on individuals setting aside their self-interest for the rights of all.[92]

In political science, Hobbes' influence on theory of political systems arose from his conception of a social contract between citizens of a state in which they give up some or all of their rights for the benefit of the collective. In IR, although Hobbes' influence on realist and neo-realist theories of an anarchic international system of billiard-ball states has come more from his notion of individuals in an anarchic state of nature, the line of inheritance is still clear. However, whereas in political science social contract theory is obviously normative, i.e. prescribing what *should* be, the influence of Hobbes' conception of the state of nature on realist IR theory is mainly explanatory, i.e. describing what *is*. Nonetheless, in terms of future-orientated theorising, while social contract theory appears to have more immediate and obvious relevance, Hobbes' conception of an anarchic state of nature is also pertinent because it is used as the theoretical foundation for mainstream normative analyses in IR theory of how the international system *should* be constructed. This is evident in, for example, Kant's conception of a world government or organisation in the form of a League of Nations which would establish rules for the enforced maintenance of peace between potentially warring states, a normative project which has recently been taken up by contemporary liberal theorists such as Jürgen Habermas.[93] Hobbes' ineluctable and lasting influence on IR can also immediately be felt in the titles of classic works of IR theory even outside the realist perspective, such as Hedley Bull's *The Anarchical Society*[94], which falls within the English School of IR, and Alexander Wendt's constructivist manifesto,

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terminating with the shocking execution of King Charles I. These events undoubtedly contributed to Hobbes' pessimistic theoretical outlook.

[91] Jean-Jacques Rousseau *The Social Contract*, and John Locke *A Second Treatise on Government*

[92] John Rawls (1971) *A Theory of Justice*, Harvard University Press.

[93] Immanuel Kant Perpetual Peace, and Jürgen Habermas (2012) *The Crisis of the European Union: A Response,* Cambridge: Polity Press.

[94] Hedley Bull (1977) *The Anarchical Society*, New York: Columbia University Press.

'Anarchy is what states make of it'[95], as well as on the frequently pessimistic perspective of realism itself.

These two threads of Hobbesian thought, manifested in political science as social contract theory and in IR as the anarchic international system of states, thus constitute two major conceptual building blocks upon which normative (future-orientated) theorising is based in mainstream political science and IR. There remains the question of whether these building blocks form a sound, solid basis for anticipating, predicting and/or constructing the future in political science, or whether future-orientated work such as understanding China's future demands a different set of theoretical tools. To look at this question from a different angle, can either or both of the mainstream Hobbesian constructs which sit in the mainstream of political theory, i.e. social contract theory and the idea of an anarchic international system, contribute anything useful and scientific to the complexity theory / complex systems approach which appears to be the most fruitful way of studying the future in the social sciences, as explained in the previous sections?

In the case of social contract theory, since it is mainly a normative theory of political systems, in the case of China's future it might be possible to apply some elements of, for instance, the Rawlsian theory of justice, in the area of possible changes to China's political system. On the other hand, this would demand a radical overhaul or overturning of China's present political system on the basis of a Western liberal democratic model. This would, of itself, given present circumstances, be better accounted for by Taleb's black swan theory, and would thereafter have an uncertain (i.e. chaotic or difficult to predict) outcome for which social contract theory might not be a good fit. It also does not really add any relevant value to the task of understanding China's future via the complex systems approach already outlined. Thus it does not appear, at the time of writing, that social contract theory can provide much useful input to this thesis.

As far as Hobbes' conception of an anarchic state of nature (transformed by Waltz and others into an anarchic international system) is concerned, the prospects of application seem better. The notion underlies, as stated above, much of mainstream IR theory, and thus, in present-day debates, is referred to by (neo-)realist, (neo-)liberal and

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[95] Alexander Wendt (1992) 'Anarchy is what states make of it: the social construction of power politics', *International Organization*, Vol. 46, Issue 2, pp. 391-425.

constructivist theories of relations between states. China's potential future international interactions could, for instance, be studied through the prism of Waltzian neo-realism to understand ways in which a rising China is likely to interact with the international community, or within the East Asian region. Indeed, Waltz's own conception of theory aims for the construction of a rigorous theoretical model for producing predictions or explanations which can be tested against empirical evidence, in the same way, as mentioned above, as a theory in the natural sciences would be.[96]

On the other hand, there are several practical problems with the application of Waltzian neo-realism to the case of China's future. First of all, the assumption of an anarchic international system which causes the behaviour of billiard-ball states may not be as well-founded, in the case of China at least, as it appears. David Kang for instance, objects that the East Asian regional power structures do not appear to adhere to the same principles as those arising from European historical balance of power politics that were used for the construction of mainstream Western IR theories: he suggests that hierarchy, rather than anarchy, seems to be a better description of the East Asian political order of the last millennium, during which there were relatively few wars and relative stability.[97] This hierarchy was based on the *tianxia* system of (supposedly benign) Chinese hegemony, in which the other East Asian states had a tributary relationship with China, the so-called 'Middle Kingdom'.[98] James C. Hsiung expands on Kang's argument, positing that the international system is generally based on hierarchy (e.g. US hegemony in the contemporary system) rather than anarchy.[99] Martin Jacques even predicts a re-establishment of the Chinese hierarchical tributary system in the future (as we will see in later chapters).[100] If such a re-establishment of the historical East Asian status quo regional system indeed occurred, this would suggest that both the past and the future of the East Asian region could be said to constitute

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[96] See Waltz (1979), p. 13.

[97] David C. Kang (2003) 'Getting Asia wrong', *International Security*, 27(4), pp. 57–85. He expands on this thesis in his (2007) *China Rising: Peace, Power and Order in East Asia*, New York: Columbia University Press.

[98] For a discussion of the concept of *tianxia* and its relevance to contemporary IR, see Zheng Yongnian (2010) 'Organizing China's inter-state relations: from "*tianxia*" (all-under-heaven) to the modern international order', in Zheng Yongnian (ed.) *China and International Relations: The Chinese View and the Contribution of Wang Gungwu*, London: Routledge.

[99] James C. Hsiung (2010) 'A re-appraisal of Abrahamic values and neorealist IR theory: from a Confucian-Asian perspective', in Zheng Yongnian (ed.) *China and International Relations*, pp. 27-32.

[100] Jacques, Martin (2009) *When China Rules the World: The Rise of the Middle Kingdom and the End of the Western World*, London: Allen Lane.

empirical evidence undermining Waltz's explanatory theory based on an anarchic international structure.

Helen Milner points out some other problems with the assumption of an anarchic structure in the international system. She suggests that the notion of a purely anarchic structure without leadership is not supported by the evidence, which requires a theory of the international system "that combines anarchy and interdependence".[101] In other words, the assumption of an anarchic international system is too simplistic to describe the complexities of international politics, which, rather than being a 'war of all against all', in fact "rests on institutionalised practices and well-accepted norms" via "institutions and laws that maintain order".[102] This implies that order can be provided not only by a formal hierarchy of states or a world government, as Waltz appears to think, but also, as Milner explains, "through different means".[103] To give just two examples of these 'different means', the international financial order is maintained via well-established international regimes enforced by institutions such as the World Bank and the International Monetary Fund (IMF), while the notion of bordered nation states is one that has been established by agreement and convention, and stems from the Treaty of Westphalia in 1648. Milner concludes that ignoring factors such as interdependence and focussing on anarchy alone is "over-emphasizing it", as well as being "overly reductionist" and a case of "over-simplification".[104] This would imply that a theory which takes into account a greater amount of complexity is needed to describe international politics, as well as to predict outcomes in a case such as China's future.

Adam Humphreys, in a very detailed analysis of Waltz's neo-realism, concurs that the explanatory power of Waltz's theory is limited and inadequate.[105] This is because "it generates only partial explanations", failing to account for "how structure interacts with other variables to produce specific behavioural outcomes" in the states which subsist within the supposedly anarchic international system.[106] In addition, like other mainstream IR theories such as constructivism, Waltzian neo-realism is "poorly equipped to address complex systems in which structure and units are mutually

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[101] Helen Milner (1991) 'The assumption of anarchy in international relations theory: a critique', *Review of International Studies*, Vol. 17, No. 1, pp. 67-85, p. 67.
[102] Ibid., p. 73.
[103] Idem.
[104] Ibid., p. 85.
[105] Humphreys (2006).
[106] Ibid., p. 2.

affecting".[107] To put this analysis in more straightforward language, Humphreys' thesis supports Milner's conclusion that neo-realism is too simplistic to account for the complexities of international politics: a theory that would be able to describe outcomes in the international sphere, needing greater explanatory power, would have to be able to describe, account for, and predict the relationships between variables within a complex system in greater detail. IR's continuing fixation[108] on Waltzian neo-realism, which was described in a recent obituary as a 'pivotal' theory of international politics which "will forever impact how we explain and understand the world around us"[109], thus seems misguided and poorly supported by the details of the theory.

There are other problems with the approach to theorising inspired by Waltz's neo-realism.   George Lawson, in a perceptive critique of prevailing tendencies in contemporary IR theory, points out that there is a tendency for mainstream theory, preoccupied with finding empirical 'proof' via "deductive, nomological methods discrete from 'thick description'"[110], to treat history as "a predetermined site for the empirical verification of abstract claims".[111] This in turn leads to an absence of "regard for particularity, context, and complexity" [112], as well as cherry-picking of historical examples to support theories. According to Lawson, this means that theorists are guilty of a peculiar type of ahistoricism, i.e. a lack of understanding or even discussion of what history is, the result of "failing to see how historical events are part of broader processes".[113]   Lawson's argument that the neo-positivist turn in contemporary IR theory ignores the complex processes of history is supported by the work of the influential critical theorist and critic of Waltzian neo-realism Robert W. Cox.[114]

So once more it is evident that this ahistorical tendency in IR theory is indicative of a failure to incorporate the full complexity of events into explanatory and predictive

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[107] Idem.

[108] See Brown (2005), p. 40.

[109] Robert W. Murray (2013) 'Reflecting on Kenneth Waltz', e-International Relations, May 14th, 2013, available at http://www.e-ir.info/2013/05/14/reflecting-on-kenneth-waltz/, (accessed May 16th, 2013).

[110] George Lawson (2010) 'The eternal divide? History and International Relations', European Journal of International Relations 18(2): 203-226, p. 207.

[111] Ibid., p. 204.

[112] Ibid., p. 205.

[113] Idem.

[114] See Robert W. Cox (1981) 'Social forces, states and world orders: beyond international relations theory', in Richard Little and Michael Smith (eds.) (1991) Perspectives on World Politics (Second edition), London: Routledge, and Robert W. Cox (2010) 'Historicity and international relations: a tribute to Wang Gungwu', in Zheng, Yongnian (ed.) (2010) China and International Relations: The Chinese View and the Contribution of Wang Gungwu, London and New York: Routledge.

theories. IR theorists, inspired by Waltz's demand for theory to be as clear and streamlined as possible, may respond that in simplifying complicated reality they are building 'parsimonious' theories in order to gain 'explanatory power'. However, if one obeys Waltz's stricture to simplify in order to explain more clearly, in the process shunning "a less theoretical system promising greater descriptive accuracy" [115], can one's theory truly be said, in the context of a complex social world of complex social systems containing masses of variables rather than the small sets demanded by Waltz, truly to be accurate or explanatory at all? In terms of complexity theory, as we shall see in due course[116], it may well be the case that eliminating surplus detail by "decid[ing] which things to concentrate on"[117], and "link[ing] theoretical concepts with a few variables in order to contrive explanations from which hypotheses can be inferred and tested"[118], one may actually, as Humphreys points out, be losing explanatory power (as well as vital accuracy) instead of gaining it.

Directly contrasting Waltz's seminal neorealist theory with Jervis' innovative application of complexity theory to international politics and social science in his 1997 volume *System Effects* allows us to further point up the explanatory deficiencies in neorealism's explanation of the interaction between agents and structure, and also emphasises the need for a more sophisticated theoretical model to account for the complexities of international phenomena such as the rise of China. Whereas, as Humphreys demonstrates, there is a striking mismatch between Waltz's demand for a rigorous theory which can be falsified by evidence and the evidential support he provides (which "borders on the peremptory"[119] and cannot be considered to constitute "a considered assessment of a substantive empirical claim"[120]), Jervis provides copious examples of complex systems at work in international affairs. These range from the "interconnections and complex interactions" present in the events leading up to the First World War[121], to the messy consequences of the USA's "putting troops into Vietnam"[122], to the consequences on its "internal arrangements" of a "state's place in

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[115] See Waltz (1979), p. 115.
[116] See the section below on nonlinearity and sensitivity to initial conditions for an account of the totally different outcomes produced by even small differences in the set of parameters in a complex system.
[117] Ibid., p. 16.
[118] Ibid., p. 17.
[119] Humphreys (2006), p. 19.
[120] Idem.
[121] Jervis (1997), pp. 8-9.
[122] Ibid., pp. 11-12.

the international economic system"[123], to mention just three of Jervis' many examples of complex system effects. Waltz's theoretical account of the 'international-political system', represented by a diagram of the 'international structure' and the 'interacting units', and two arrows passing between them, is rudimentary and basic[124], while Jervis' detailed analyses of a wide range of system effects which have an impact on phenomena are empirically persuasive.

There is no space or need here to go into complex systems effects in too much detail: for more information the reader is advised to look into one of the numerous excellent guides to the basics of complexity and chaos theory.[125] Nevertheless, one or two examples should illustrate some of the phenomena that make aspects of complexity theory potentially revealing of the nature of socio-political processes and outcomes. Such examples should also demonstrate precisely why these processes and outcomes are so notoriously difficult to predict, and how this affects political science and IR.

One of the most important effects resulting from complex systems is *nonlinearity*. This concept essentially refers to "the huge magnification of initial uncertainties" due to "sensitive dependence on initial conditions".[126] In other words, the outcome of the interaction of a set of variables is determined by the precise mix of ingredients that are introduced at the beginning of the process: if the individual ingredients are altered, even slightly, then the outcomes will be massively different. This effect, often referred to as the 'butterfly effect' (a term which is derived from the tendency of relatively small causal factors to contribute to large changes in weather patterns), might manifest itself in politics when, for instance, a specific EU policy is interpreted and implemented in subtly different ways at a regional level by individual national governments, or when a slight adjustment to a voting system produces an unexpectedly different set of MPs, or when making decisions about the exact mix of personnel and equipment to send into a particular military situation. In each of these (and many other) cases, subtle variations in original parameters relating to the policy application process produces radically

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[123] Ibid., pp. 16-17.
[124] See Waltz (1979), p. 40, Figure 3.1.
[125] Among the best of these are the following: Waldrop (1993); Kauffman (1995); Murray Gell-Mann (1994) *The Quark and the Jaguar: Adventures in the Simple and the Complex*, New York: W.H. Freeman; Steven Strogatz (2003) *Sync: How Order Emerges from Chaos in the Universe, Nature, and Daily Life*, New York: Hyperion; John H. Miller and Scott E. Page (2007) *Complex Adaptive Systems: An Introduction to Computational Models of Social Life*, Princeton: Princeton University Press; Melanie Mitchell (2009) *Complexity: A Guided Tour*, Oxford: Oxford University Press.
[126] Mitchell (2009), p. 22.

different, difficult to predict, random-looking real-world results, an effect which is called system sensitivity, or sensitivity to parameterization.[127]

Another important effect in complex systems is *feedback* (also called 'feedback loops').[128] This can manifest in either *positive* or *negative* forms.[129] In its positive manifestation, feedback involves an accumulated build-up, like a snowball effect, such as when a gain in a party's popularity at the polls leads to more media coverage of that party, which leads to exponentially increased popularity, which leads to more coverage and popularity, and so on. In its negative form, feedback is more like a dampening effect which constantly restores the equilibrium of the original state: for instance, balance of power theory (in which rival powers cancel each other out, e.g. nuclear deterrence during the Cold War) can be seen as an example of a negative feedback loop.[130] However, the relationship between positive and negative feedback can itself be very complex, as Jervis points out: an arms race is an example of a positive feedback loop, but the balance of power it may produce looks like a negative feedback loop – unless the build-up of military strength on each side somehow reaches a tipping point and topples out of equilibrium and over the edge of chaos into outright war. In other words, a complex system is not a stable organism, but is forever in a process of change and adaptation to the set of circumstances that adhere at a particular moment in time, resulting in elements of both positive and negative feedback at different junctures.[131]

Advances in complex systems in recent years make the imperative for political scientists and IR theorists to utilise the tools and findings of complexity theory more urgent. In a recent article reviewing and extending Jervis' contribution to political and social science, Andrea Jones-Rooy and Scott Page claim that

> the political, economic, social, and environmental worlds are systems. If we want to make sense of and improve these worlds, we need to understand how the systems affect each other. We need to explore both the boundaries of, and the connections between, systems.
>
> This is no easy task. Understanding systems adequately would allow for better prediction, better political science, and better social science in general. No one (at least of note) predicted the Arab Spring, even though a few years earlier Stathis Kalyvas (1999) had

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[127] For a clear explanation of sensitivity to initial conditions, see Orrell (2007), pp. 110-115.
[128] See Jervis (1997), Chapter 4 for a detailed discussion of feedback effects in politics.
[129] Ibid., p. 125.
[130] Ibid., p. 97 and pp. 134-5 for a discussion of negative feedback in balance of power politics.
[131] Ibid., pp. 126-130.

called political science to task for not anticipating the overthrow of governments in the former Soviet Bloc. Similarly, only a handful of social scientists predicted the mortgage crisis or an event of the severity of September 11. Nor did social scientists twenty years ago consider the rise of China to be anything like a certainty.[132]

This conclusion would seem to point to the need to utilise a complexity theory approach, or at least to take it into account, in order to have a chance of understanding all or part of the future of an inherently complex system such as China.[133] Jones-Rooy and Page recommend increased collaboration between IR scholars and complexity theorists[134], and suggest the rise of China as a case where the use of complex systems theory can enable an improved analysis of possible future outcomes.[135] Even if in all likelihood such analysis will never result in anything close to a precise predictive science of the future, utilising tools such as path dependence and network theory should lead to deeper understanding of the processes at work in complex socio-political phenomena. Even so, in their own examination of China's future, Jones-Rooy and Page qualify their optimism about the use of complexity theory to understand China's future by admitting that "Most likely the global impact of the rise of China will lie somewhere between a total disaster and the salvation of humanity, but that's a pretty large gray area."[136]

This assertion begs the following question. Can complexity theory in its present state of research development in political science and IR theory really be employed as a theoretical tool to examine political outcomes, or does more work need to be done before it is fit for purpose? The answer is that, in terms of the state of present research, complex systems theory is not yet developed enough to enable a succinct and fruitful analysis of China's future for use in political science research, and a great deal more work will be needed before it is, as Jones-Rooy and Page make clear in calling for increased collaboration between scholars of complex systems and IR.[137] Nevertheless, the finding that future outcomes in political science and IR are better described in terms of complex systems than in terms of explanatorily limited mainstream theories such as neo-realism is already a useful one, because it encourages and encompasses an

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[132] Andrea Jones-Rooy and Scott E. Page (2012) 'The complexity of system effects', *Critical Review: A Journal of Politics and Society*, Vol. 24, Issue 3: 313-342, p. 314.

[133] Jones-Rooy and Page (ibid., pp. 327-8) give numerous examples of China's inherent complexity.

[134] Ibid., p. 334.

[135] Ibid., p. 328.

[136] Idem.

[137] Ibid., p. 334.

approach to the phenomena which takes into account the full range of interconnecting social, economic, environmental and political factors which create the future. The task that remains is to find a methodological approach which can come close to encompassing the myriad factors which go into forming complex futures in a relatively concise, informative and digestible format. Finding such a methodology is, in fact, the task of the following chapter.

2.3   Conclusion and summary

The finding that complexity theory is better equipped to understand the processes and interactions that go into creating the future than mainstream theories of political systems and international relations is one that has been indicated by all three of the above sections on the future in the natural sciences, the social sciences, and political science and IR. If the study of complexity theory is not yet very developed in political science, this is something that needs to be remedied, as Jones-Rooy and Page point out, in future collaborations between political scientists and complexity theorists. The need for political science and international relations to move beyond neo-positivism and neo-realism, with their built-in preoccupation with extracting a small number of variables from the mass of information in order to test them against parsimonious hypotheses, and to engage with the notion, emerging empirically and theoretically from a number of disciplines, that the socio-political world is better described in terms of complex systems, is becoming steadily more urgent as the world becomes increasingly interdependent as more and more complex systems interconnect.

In the meantime, a way to describe and encompass China's future that includes the complex interactions of system effects needs to be found, even if achieving such a methodological synthesis between complexity and forecasting is certainly "not easy to do"[138] and critical uncertainties loom large in any attempt to understand and /or anticipate the future.[139] In spite, then, of the inherent difficulties, it is to the task of finding a suitable methodology or methodologies for the practical task of understanding futures in the social sciences that we now turn.

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[138] Idem.

[139] Ibid., p. 339. See also Silver (2012) for a discussion of uncertainty in prediction.

CHAPTER 3:   METHODOLOGY

3.1   Overview

In considering a project involving the assessment of complex future outcomes based on present circumstances and historical factors, establishing a clear and painstaking methodological foundation for the research is, quite obviously, of paramount importance. In a case such as this, where the real-world subject matter contains a large number of variables (for example: China's authoritarian government; the effect of globalization; economic growth; environmental degradation; social unrest; nationalism; on-going infrastructure projects; and so on[140]), each of which needs to be examined carefully in order even to begin to construct a picture of the situation on the ground, there is, unfortunately, room for a high degree of error. As the leading American sinologist David Shambaugh puts it, "The Sinological landscape is littered with predictive casualties."[141]

It would be, for example, very easy from a Western perspective to look, on a shallow level, at the Chinese one-party state with its tensions and lack of political plurality and conclude that the present political system will soon collapse. There have been numerous predictions of this type since the Tiananmen incident in 1989 and so far they have not (thus far) been borne out by the historical record.[142] On the other hand, it would also be easy to study the record of China's rapid economic growth since the beginning of Deng Xiaoping's reforms in 1978 and claim that China is self-evidently on course to overtake the USA as the dominant world hegemon.[143] Predictions of constant linear economic growth, however, are seldom (if ever) accurate, as both the Wall Street Crash of 1929 and the current world economic crisis since 2007 reveal. In other words, a high degree of caution needs to be exercised in order to prevent this project from deteriorating into a poorly-supported and uninformative diatribe.

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[140] For a detailed discussion of the factors influencing China's growth and position in the world, see Susan L. Shirk, *China: Fragile Superpower*, Oxford: Oxford University Press.

[141] David Shambaugh (2008) *China's Communist Party: Atrophy and Adaptation*, Washington, D.C.: Woodrow Wilson Center Press, p. 170.

[142] See, for instance, Gordon G. Chang (2002) *The Coming Collapse of China,* London: Arrow*,* or numerous predictions by the independent political think tank Stratfor of China's impending collapse such as 'China: Crunch Time' (March 30th 2010), at http://www.stratfor.com/weekly/20100329_china_crunch_time (accessed 19/12/2012).

[143] This view is taken, for example, by Martin Jacques in his (2009) *When China Rules the World: The Rise of the Middle Kingdom and the End of the Western World*, London: Allen Lane.

Avoiding the pitfalls of facile prediction based on flimsy premises is therefore of the utmost importance for the writing of this thesis. Even Karl Popper, whose notion that a good theory should be empirically falsifiable has exerted a great deal of influence in both the natural and social sciences, admitted that social science "suffers from its own unique ... problems of falsification".[144] One of the most serious of these is "the difficulty of making precise predictions" for a number of reasons including "the lack of lawlike regularities in the social world, the difficulty if not impossibility of conducting controlled experiments, the complexity of social phenomena"[145], and so on. Hence, as already stated, the aims of the research demand that the approach taken be firmly grounded in a rigorous search for a research design based on a methodology or methodologies through which to attempt to move towards a better understanding of the complexities of China's present situation, and from there to progress in the direction of outlining potential future outcomes.

However, clarifying even the criteria for selecting from the available methodologies, let alone sifting through the methodologies themselves, is far from an easy task. Many political scientists and practitioners in the social sciences tend to steer clear of discussing the future precisely because it is unknown and uncertain and because the track record of attempts to predict future outcomes is poor. Similarly, although (as will be demonstrated below) there are a range of established methodological tools available for looking at the future in the social sciences, none of them is devoid of problems. In fact, the problems inherent in all the available methodologies tend to appear sufficiently overwhelming and discouraging at the outset as to undermine all attempts to make progress.

In embarking on a project such as this, one therefore immediately stands the risk of being labelled 'unscientific'. Given that most attempts to uncover patterns in the historical past have proved problematic, efforts to anticipate the future seem even more ill-advised.[146] To repeat the American baseball coach Yogi Berra's oft-quoted comment:

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[144] William A. Gorton (2006) *Karl Popper and the Social Sciences*, Albany: State University of New York Press, p. 54.
[145] Idem.
[146] Examples of attempts to establish cycles or progressions in history in order to predict the future include the Marxist theory of dialectical materialism culminating in communism and Oswald Spengler's (1926) *The Decline of the West*, New York: Alfred A. Knopf. The former has been largely discredited by the fall of communism in Eastern Europe, while the excessive determinism inherent in the latter has been deconstructed by Theodor W. Adorno (1982) *Spengler after the Decline* in *Prisms* (translated by Samuel and Shierry Weber), Cambridge, Mass.: MIT press, pp.51-72.

prediction is very difficult, especially when it's about the future. Social scientists are only too aware of the unfortunate grain of truth contained in this throwaway remark.

At the same time, if social sciences such as political science and international relations are going to draw conclusions of theoretical or practical interest about the world, there is ultimately no alternative to addressing the future. The strength of the hard sciences is often seen as their ability to make predictions which can be tested through experiment, and although there are obvious differences between the hard sciences and the social sciences, nevertheless if political science is to achieve something of interest then it has to, whether confidently or tentatively, study potential outcomes which relate to present-day discussions of the state of the political world.[147] In any case, politics is in many respects a normative discipline which attempts to analyse the past in order to suggest improved models of governance going forward, and this means that there has to be some willingness to analyse the effects of present-day situations and decisions on future outcomes and to suggest what those outcomes themselves might be.

This chapter, then, is an attempt to work through some methodological alternatives in an effort to work out what might be termed the 'least bad' approaches to the material, i.e. the methodology or methodologies which allow an exploration of the full range of future possibilities for China, without becoming one of Shambaugh's "predictive casualties". It is entirely possible, indeed probable, that no entirely satisfactory solution will be found to the problem of how to approach the future of China or of any other real-world phenomenon in the social sciences; but when analysing the relationship between past history, present circumstances and future outcomes is arguably one of the primary goals of a social science such as politics, attempting to examine what the future might have in store, however messy and complex this endeavour may be in both theoretical and practical terms, is undoubtedly part of the task of the discipline.[148] Given this understanding of the task of politics, there is no alternative to going in quest of a suitable methodology, whether quantitative or qualitative, for investigating the future, however tentative, approximate or unsatisfying the results of this search may ultimately prove to be.

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[147] There is a full discussion of this important point in the following section, particularly with reference to the work of Gary King, Robert O. Keohane and Sidney Verba on scientific inference in the social sciences in their (1994) *Designing Social Inquiry: Scientific Inference in Qualitative Research*, Princeton: Princeton University Press.
[148] See previous note.

3.2 Basic methodological foundations: quantitative, qualitative, or a combination of both?

The quantitative/qualitative debate in social sciences methodology is one with a long history, one that is difficult (if not impossible) to resolve, and one with a vast and ever-growing literature dissecting the minutiae of the discussion.[149] An initial perusal of some of the research design literature gives the impression that there must be a 'correct' method for a given project, or that there exists an approved shopping list from which to select.[150] However, further investigation and reflection reveal that it will be difficult or impossible to establish what a 'correct' approach is, and that shopping lists of methods and designs vary from author to author. Ultimately, there is little agreement in the literature even about what research design and methods should look like, and on what principles they should be based.

For example, a standard way of categorising research methods, according to a number of research design textbooks for the social sciences, has been to outline a dualistic set of alternatives, classified under the headings 'quantitative' and 'qualitative'[151], with some textbooks focussing purely on a fixed spectrum of qualitative approaches such as ethnography, case studies, narrative studies, participant observation, and so on. [152] In such books, the implication often appears to be that in the social sciences quantitative methods are unsuited to the material to be researched, although in recent years there are signs that this assumption is being challenged, as authors of at least some research design textbooks increasingly appear to be working at "breaking down the quantitative / qualitative divide".[153]

In political science there seems to be a sharp divide between those – the supporters of quantitative methodologies – who believe the Popperian proposition that a theory

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[149] See for example King, Keohane and Verba (1994); John W. Creswell (2007) *Qualitative Inquiry & Research Design: Choosing Among Five Approaches*, California: Sage Publications; Tim May (2001) *Social Research: Issues, Methods and Process (Third Edition)*, Buckingham: Open University Press; and David Silverman (2010) *Doing Qualitative Research* (Third Edition), London: Sage Publications.

[150] See note 13 below.

[151] For example David Silverman (2010) appears to make the assumption that the researcher is obliged to choose between qualitative and quantitative research methods.

[152] Two examples are: Creswell (2007) and May (2001). In both these books an apparently definitive list of qualitative research methodologies is presented as if other options do not exist. It is interesting to note that the approaches listed in these two books are completely different!

[153] Alan Bryman (2008) *Social Research Methods, 3rd edition*, Oxford: Oxford University Press, Chapter 24 title. King, Keohane and Verba (1994:5) also write of "breaking down the barriers".

cannot be evaluated – and hence cannot be considered valid – unless it is falsifiable[154], and those – the supporters of qualitative methodologies – who claim that a reliance on empirical data is 'positivist' and meaningless in a value-laden discipline which deals with the vagaries of human beings' interactions. It would therefore be easy at this point to get into a lengthy discussion of the relative merits of the two approaches, each of which includes a wide range of methodological tools, without making any real progress with the research required to advance this project. I propose, therefore, to leave the qualitative/quantitative debate behind us by referring the reader to the literature on the topic, in order to move directly on to the specifics of choosing a methodology or methodologies for the research here conducted from among the large range of tools available. It is sufficient to summarise the debate by quoting from King, Keohane and Verba (whose book focuses specifically on the methodologies available for the social sciences, and in particular political science):

> Both quantitative and qualitative research can be systematic and scientific … neither quantitative nor qualitative research is superior to the other, regardless of the research problem being addressed.[155]

Nevertheless, the question of whether to approach research through a quantitative or qualitative methodology (or through a combination of the two) is a fundamentally important one to consider at the outset of any project. The rest of this chapter will therefore assess the relative methods of a range of methodological tools, both quantitative and qualitative, in order to decide which of them might be the most appropriate (or least inappropriate, in the event that no ideal ones can be found) for the specific task at hand.

In fact, it is very probable that no ideal tool will be found, and that a combination of approaches will have to be used in an innovative manner.[156] Given that the topic of this thesis is an analysis of the future of China and attempting to establish productive ways to analyse it, there is a very high probability, if not certainty, that the conclusions reached will be very tentative and in need of further development in subsequent

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[154] For a full discussion of Popper's rather complex position on falsifiability of theories in the social sciences see Gorton (2006), Chapter 3.
[155] King, Keohane and Vrba (1994), pp. 4-6 (abridged for reasons of space: the reader is directed towards the pages indicated for a more complete analysis).
[156] This is one of King, Keohane and Verba's (1994) central points.

research. However, as King, Keohane and Verba explain, in defining the spirit of their discussion of research methodologies for political science and other social sciences,

> we want to set a high standard for research but not an impossible one. All interesting qualitative and quantitative research yields uncertain conclusions. We think that this fact ought not to be dispiriting to researchers but should rather caution us to be aware of this uncertainty, remind us to make the best use of data possible, and energize us to continue the struggle to improve our stock of valid inferences about the political world. We show that uncertain inferences are every bit as scientific as more certain ones so long as they are accompanied by honest statements of the degree of uncertainty entailed in each conclusion.[157]

Bearing this valuable advice in mind, this research will attempt at all points to be very clear about its aims, honest about its shortcomings and limitations, and expressive of the degrees of uncertainty and tentativeness involved in any conclusions reached.

3.3   Evaluating quantitative methodologies: can they be utilised to examine the future?

To begin, then, by evaluating quantitative methodologies for the specific purposes of this project, I will consider as case studies two works of political science which employ statistical approaches to analyse their areas of interest. These are Arend Lijphart's 1999 work *Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries*[158] and Philip Tetlock's 2006 *Expert Political Judgment: How Good Is It? How Can We Know?*[159] The first will be used to illustrate the strengths and shortcomings of statistical approaches in political science in general, and the second will analyse the use of statistical methodologies in the specific area of assessing predictions of future political outcomes. The rationale for selecting these two works in particular is the following. Lijphart's work, which is based on a quantitative, statistical

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[157] Gary King, Robert O. Keohane and Sidney Verba (2004) 'The Importance of Research Design', in Henry E. Brady and David Collier (eds.) *Rethinking Social Inquiry: Diverse Tools, Shared Standards*, Lanham: Rowman & Littlefield, p. 185.

[158] Arend Lijphart (1999) *Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries*, Yale University Press.

[159] Philip Tetlock (2005) *Expert Political Judgment: How Good Is It? How Can We Know?*, Princeton: Princeton University Press.

analysis of ten differences between consensus and majoritarian democracies, has been highly influential in the theory and practice of democratic systems of government, to the extent that it has been used as an empirical foundation for promoting the use of consensus democratic institutions around the world. Tetlock's book attempts to analyse the prediction of future outcomes by political experts via a statistical analysis of probability judgements, and thus its methodology is of specific interest for the development of the current project.

Statistical methodologies are of particular interest for consideration in this chapter because in looking at the future an obvious consideration is whether to utilise a probability-based methodology such as statistics. If it could be established that certain future outcomes were more probable than others, then a deeper insight might emerge from the data. For example, in the case of China, if it could be established that there was roughly a 66 per cent chance of regime collapse within ten years and only a 34 per cent chance of regime continuation, then this would be a conclusion of considerable academic interest. On the other hand, if such probabilistic approaches could be shown to no more scientific value than the odds given at a bookmakers' when placing a bet on a horse, or an educated guess made by a pundit concerning the outcome of a football match, then the approach would have considerably less value in terms of academic research (although it might still be worth consideration). [160]

Statistical approaches have the apparent merit of providing the potential for deriving firm conclusions supported by empirical data. However, in the social sciences empirical data do not exist in a vacuum but need to be placed within an interpretative framework in order to draw conclusions of some kind. This logically suggests that quantitative methodological approaches are not sufficient on their own, but demand a defining qualitative analysis. Without such an interpretative framework numbers will remain just numbers and thus worthless.[161]

To illustrate this point let us first look at Lijphart's study of democratic institutions in his *Patterns of Democracy*. Lijphart compares two broad models of democracy, which he terms 'majoritarian' (this, according to Lijphart's own analysis, correlates roughly with Westminster-type plurality electoral systems such as that of the UK, which are

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[160] See Silver (2012) for a full discussion of the advantages (and disadvantages) of using Bayesian probabilities and statistics to predict uncertain future outcomes.
[161] See King, Keohane and Verba (1994), and also Silver (2012).

usually dominated by two adversarial parties and rarely have coalition governments) and 'consensus' (correlating with continental European proportional representation systems such as Switzerland's and the Netherlands', which involve coalitions and extensive negotiation between interest groups in executive and legislative decision-making), through the lens of a rigorous comparative statistical analysis of institutions and effects of policies. This allows him to draw the overall conclusion that consensus democracy performs better than (or at least as well as) the majoritarian model over a wide range of variables, and to predict that consensus models will produce better outcomes in terms of governance of a democratic state.[162]

There is no doubting the thoroughness of Lijphart's statistical analysis in terms of pure statistical methodology. He uses regression analysis and other sophisticated tools to analyse his datasets. However, upon careful inspection of the analysis a number of other methodological problems present themselves. These turn out to be of a qualitative rather than quantitative nature, and have to do with the manner of his interpretation and use of the statistical data.

First, the sharp dichotomy that Lijphart creates between the terms 'consensus' and 'majoritarian' and the models of democracy they are said to represent is perhaps not as clear-cut or as value-free as he appears to suggest. The typology of 36 countries into the two categories, for example, is perfunctorily explained and insufficiently examined, and does not go far enough in exploring the possibility that they could be divided in other ways.[163] He appears also to make the assumption that the British model is worse than the Swiss or Dutch one from the outset, which may be said to have influenced the way in which he chooses to interpret the datasets. Indeed, much of Lijphart's academic career, since his publication in 1968 of *The Politics of Accommodation: Pluralism and Democracy in the Netherlands*[164] and through numerous subsequent publications, has been spent trying to prove the superiority of what he calls 'consociationalist' political systems: he has a long-term vested interest in trying to prove what his study claims to prove. As Ian Lustick points out, Lijphart's work has "an impressionistic

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[162] Lijphart (1999).

[163] In his (2010) 'Patterns of Democracy and Its Critics', *Living Reviews in Democracy*, April 2010 (Center for Comparative and International Studies, ETH Zurich and University of Zurich at democracy.livingreviews.org) Nils-Christian Bormann analyses in depth the problems thrown up by Lijphart's typology on pages 3-5 of his review of criticisms of Lijphart.

[164] Arend Lijphart (1968) *The Politics of Accommodation: Pluralism and Democracy in the Netherlands*, Berkeley: University of California Press.

methodological posture, flexible rules for coding data, and an indefatigable, rhetorically seductive commitment to promoting consociationalism as a widely applicable principle of political engineering".[165]

A further problem with regard to the validity of the majoritarian-consensus typology is with the nature of Lijphart's reasoning, which, as Bormann points out, tends to "have an inductive approach that cannot sever the intricate connection between culture and institutions built into the typology."[166] In other words, it is difficult to see where the causal relationship between institutions and culture begins and ends when the dichotomy between the two systems is already set up at the beginning of the book, rather than proved through a long process of reasoning. For instance, the ten differences between the two types are built into Lijphart's "two-dimensional pattern" from the beginning without extended discussion, rather than being extracted from the data via analysis.[167] The causal relationship between these differences and the systems within which they sit is therefore unclear, and the reader is left with the impression that Lijphart has not shown whether, as in the old analogy, the chicken or the egg came first.

Another point is that it is difficult to conduct an analysis of democratic systems without first conducting an in-depth analysis of what the term 'democracy' itself implies (such as that conducted by Robert Dahl[168]). Lijphart never attempts such a discussion and would presumably argue that it is beyond the scope of his book. However, in a research project aiming to establish the effectiveness of different systems of so-called democratic governance, it seems an odd omission: there is no allowance by Lijphart for the possibility of other types of democratic systems than those studied, nor is there any mention of the relative effectiveness of non-democratic systems. In a book whose conclusion is that 'consensus democracy' is the best available model of governance for states, and whose author has travelled around the world propagating this idea based on the findings contained in this book, it seems misleading not to conduct a fuller comparative analysis of a wider range of systems of government than the two related ones presented. It is also odd that he does not include a discussion of the cultural

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[165] Ian Lustick (1997). "Lijphart, Lakatos, and consociationalism". *World Politics* **50** (1): 88–117.
[166] Bormann (2010), p. 1.
[167] See Lijphart (1999), pp. 3-4 for a list of these differences and a discussion of the dimensions.
[168] Robert A. Dahl (1989) *Democracy and its Critics*, New Haven: Yale University Press.

underpinnings of the two types of democracy in his typology, nor an analysis of their suitability to countries with shorter or no history of democratic government.[169]

Lastly, and perhaps most importantly, the soundness of Lijphart's conclusions rests on the datasets used for the study. Many of these are based on statistics whose provenance and rigour is analysed only briefly and inadequately (such as surveys and judgement-based indices), and whose context in the societies from which they originate is under-examined by Lijphart. Thus, while (for instance) Lijphart's use of regression analysis is thorough beyond reproach, the datasets he is using may themselves not be as value-free and scientific as he appears to assume (or want the reader to believe). As a result, as the Dutch scholars Rinus van Schendelen and Hans Daalder have pointed out in relation to Lijphart's body of work, it becomes logically difficult to accept the conclusions of Lijphart's work as being as clear-cut as he would like us to believe when he does not take the full range of factors underlying the statistics into account, or when the bare statistics themselves do not represent the whole, complex reality of a society.[170]

All in all, based on the above analysis, it becomes clear that Lijphart's 'objective' quantitative analysis is not necessarily what it seems, and is based upon a set of largely unstated premises and assumptions which are far from being value-free: in particular, that consensus democracy (as the term is applied by Lijphart) is inherently superior to what he calls majoritarian democracy. It also demonstrates what David Silverman shows to be a weakness of quantitative methodologies such as statistics, namely that the

> quantitative desire to establish 'operational' definitions at an early stage of social research can be an arbitrary process which deflects attention away from the everyday sense-making procedures of people in specific milieux. As a consequence, the 'hard' data on social structures which quantitative researchers claim to provide can turn out to be a mirage.[171]

Silverman also points out that "[s]tatistical correlations may be based upon 'variables' that, in the context of naturally occurring interaction, are arbitrarily defined" and that "unperceived values creep into research by simply taking on board highly problematic

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[169] See Bormann (2010) for a more detailed and in-depth analysis of the points discussed in this paragraph.

[170] van Schendelen, M.C.P.M.. "The views of Arend Lijphart and collected criticisms". *Acta Politica* **19** (1): 19–49; Hans Daalder (1987) 'The Dutch party system: from segmentation to polarization – and then?', in Hans Daalder (ed.) *Party Systems in Denmark, Austria, Switzerland, The Netherlands, and Belgium*, London: Frances Pinter.

[171] David Silverman (2000) *Doing qualitative research: A practical handbook*, Thousand Oaks, CA: Sage, p. 6.

and unreliable concepts".[172] All of these criticisms can be applied to Lijphart's work (as well as to a great deal of quantitative research in political science and the social sciences in general) and show that Lijphart's attempt to predict that what he calls the 'consensus' model of democracy will produce more successful governance across the board, based as it is on an implicit normative agenda, is neither as value-free nor as reliable as it might at first appear.

For these reasons, the use of statistical tools such as regression analysis in political science may be more problematic than many who use them assume. As Henry E. Brady correctly points out, of necessity "quantification is based upon qualitative judgments"[173]: interpretative frameworks cannot be omitted from quantitative studies without rendering them meaningless. Quantification needs to be qualitatively assessed as much as, if not more than, qualitative research needs quantitative data.[174] In fact, it could be argued that where quantitative research cannot exist without qualitative interpretation, qualitative research can very much exist without quantifying anything.

One solution, as King, Keohane and Verba suggest, to the quantitative/qualitative divide is by "breaking down the barriers"[175], so beloved by authors of methodological textbooks, between the two schools of methodology. The way to do this, according to their approach, is, in sum, simply not to reject any research method that may bring extra information of interest to bear concerning the complex phenomena that we, as social scientists, are trying to interpret. The overall interpretative framework of our research may of necessity be qualitative; but that does not mean that we cannot utilise quantitative data where it is available and appropriate. Creswell also recommends combining qualitative and quantitative approaches in an eclectic fashion in order to achieve an optimal solution to research problems.[176] He calls this a 'pragmatic' approach, involving "both quantitative and qualitative sources of data collection"[177], in order at the outset not to needlessly discard any of the full range of research methods and tools available. The essence of this methodological pragmatism is to "focus on the outcomes of the research" and to pursue "a concern with applications – 'what works' –

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[172] Ibid., p. 7.
[173] Henry E. Brady (2004) 'Doing Good and Doing Better', in Brady and Collier (eds.), p. 66.
[174] See Silver (2012) for a discussion of the need to qualitatively analyse quantitative data in order to obtain a useful prediction.
[175] King, Keohane and Verba (1994), p. 5.
[176] Cresswell (2007) pp. 22-23.
[177] Ibid., p. 23.

and solutions to problems"[178], rather than over-emphasising the methods employed in finding these solutions. The only question that thereafter remains is whether the data that we can generate using quantitative tools such as statistical analysis are actually going to add anything of value that will add to the sum of our knowledge in a meaningful and scientifically valid manner.

At this juncture in the discussion it is pertinent to look at our second case study: the psychologist Philip Tetlock's *Expert Political Judgment: How Good Is It? How Can We Know?* In this work of in-depth statistical analysis Tetlock set out to investigate the ability of political scientists (as an example of social scientists more generally) to predict future outcomes. His aim in conducting this research was to assess the judgment of experts in politics and the social sciences quantitatively and according to criteria similar to those by which he claims experts in other fields (such as the hard sciences) are assessed. In other words, Tetlock wants to know, in a Popperian fashion, whether the ideas and theories of social scientists hold up in the real world of hard, empirical facts. Tetlock's hypothesis is that social scientists, by claiming that their necessarily qualitative judgements cannot be quantified, get off scot-free and cannot be held to account for their mistakes.[179]

Tetlock's long-term study – he asked professional political scientists to assess the probability of a range of political events occurring within fixed time frames, and then waited to see which outcomes actually occurred – is interesting in two aspects. The first is that Tetlock attempts, uniquely, to evaluate statistically the extent to which the judgements of political experts are accurate and reliable. This attempt, whether successful or unsuccessful, is in itself intrinsically interesting in a scientific sense: if successful, it would supply us with a method for evaluating the opinions of social science experts on a sliding scale of reliability and accuracy and thus to know whose judgements stack up better against real world developments, and why; if unsuccessful, it would tell us that it is either very difficult or impossible to assess political judgement quantitatively. The other interesting aspect, in terms of the content of the present research project, is that Tetlock's study addresses prediction of the future within the social sciences. Again, for similar reasons, the degree of success of the study should tell us something valuable about the ability of social scientists to forecast future outcomes

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[178] Ibid., p. 22.
[179] Tetlock (2005).

and thence whether it may actually be possible to accurately predict developments in the sphere of human social interactions.

The strengths and weaknesses of Tetlock's study turn out to be similar to those of Lijphart. The rigour and depth of Tetlock's statistical analysis in itself is beyond reproach. On the other hand, just like Lijphart, there are serious problems with the qualitative theoretical framework within which Tetlock places his research.

First, in asking his selected political experts to assess a range of outcomes in terms of probabilities, he assumes that asking them to calculate the percentage chance of future events occurring (much like bookmakers generating odds for punters to bet on) is a valid way of discussing the future in the social sciences: in fact, it is far from being an established research tool, and further research certainly needs to be conducted to demonstrate that it is worth using. While it is possible that probability may be of some value in understanding the future, the work of Taleb on 'black swans' – highly improbable, catastrophic events that occasionally occur and have a massive impact on future developments, such as revolutions or economic crises – suggests that it is inadvisable to lean too heavily on statistical probability (or other associated forms of statistical analysis such as bell curves and regression analysis) as an indicator of outcomes in the uncertain sphere of human interactions, with its wide range of complex variables, many of which may be imperfectly understood at the time of predicting.[180]

Tetlock's choice is also flawed in that he fails to explain why the use of probability (apart from the fact that it conveniently generates numbers that can be statistically analysed) is superior to other (qualitative or quantitative) methods for looking at the future.[181] In this the mistake is similar to Lijphart's omission in his study of a detailed discussion of the concept of democracy, of different types of democracy, and of democratic systems of government in comparison to other political systems.

Second, based on the style of their predictions, Tetlock divides the experts into two broad categories, 'foxes' and 'hedgehogs': the hedgehogs are those who make bold predictions, while the foxes tend to hedge their bets. Unsurprisingly, he finds that the estimates of the hedgehogs tend to have a higher degree of inaccuracy, while the hedged forecasts of the foxes tend to more closely approximate the eventual outcomes in the

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[180] Nassim Nicholas Taleb (2008) *Black Swans: The Impact of the Highly Improbable*, London: Penguin. See also Silver (2012).

[181] Discussed in the next section.

real world, even if they still tend to be quite far removed from what actually happens. From this research finding he draws the conclusion that foxes have better judgement than hedgehogs, although at the same time it seems that both hedgehogs and foxes are not even as accurate as merely 'naively' extrapolating from the present in an automatic fashion using extrapolation algorithms.

Tetlock's findings in this area are problematic but scientifically interesting (particularly for the purposes of this research project) for several reasons. Foremost among these is why the foxes performed better than the hedgehogs, and why both were outperformed by naïve extrapolation. Tetlock's analysis suggests that while the foxes were less inaccurate, the judgements of political experts of both types are too inaccurate and unreliable to be worth much consideration in terms of the empirical evidence. This is certainly indisputably proved in terms of the method (probability) that he asks them to use to predict the future, but this only demonstrates that their expertise does not equip them to make worthwhile forecasts of future outcomes in terms of probability. In other words, Tetlock has demonstrated that political experts would not make good bookmakers or punters, but he has not really demonstrated (as he appears to believe) that the expertise of the whole class of political experts is inherently without value. Without wishing to undertake an elaborate defence of the skills of experts in political science, it is certainly worth considering that the expertise of political scientists may lie elsewhere, in other types of judgement (i.e. judgements not requiring the use of probability guesstimates such as logical argument through inference, hermeneutic interpretivism, and so on). This is a possibility that demands further research, and means that by using probability as a single tool to prove that political experts' judgement is more-or-less worthless Tetlock may have been guilty of what the philosopher Gilbert Ryle calls a 'category mistake'[182]: in other words, he has attempted to assess the judgement of experts in terms of a skill (predicting the future in terms of probability) they do not necessarily claim to possess, and which it appears they do not have, while downplaying the possibility that their expertise may lie in the use of other methods, such as scenario planning.

Furthermore, as the work of Amos Tversky and Daniel Kahneman in the field of cognitive psychology demonstrates, the human brain is simply not very good at assessing probability, which means that making guesstimate assessments of the future

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[182] Gilbert Ryle (1949) *The Concept of Mind*, Chicago: University of Chicago Press.

in terms of numerical quantities, percentages and other odds is bound to be an Achilles heel of all human beings and not just political scientists.[183] Kahneman, a winner of the Nobel Prize in Economics, summarises what he calls the "difficulties of statistical thinking"[184] as "a puzzling limitation of our mind: our excessive confidence in what we believe we know, and our apparent inability to acknowledge the full extent of our ignorance and the uncertainty of the world we live in."[185] Kahneman summarises one experiment conducted by himself and Tversky as follows:

> We prepared a survey that included realistic scenarios of statistical issues that arise in research. Amos collected the responses of a group of expert participants in a meeting of the Society of Mathematical Psychology, including the authors of two statistical textbooks. As expected, we found that our expert colleagues, like us, greatly exaggerated the likelihood that the original result of an experiment would be successfully replicated even with a small sample. They also gave very poor advice to a fictitious graduate student about the number of observations she needed to collect. Even statisticians were not good intuitive statisticians.[186]

So, if even experts in statistics cannot generate accurate statistical predictions in terms of probabilities, Tetlock's expectation that experts in politics would be able to do this lacks a foundation in scientific, empirical evidence. In fact, in setting the political experts this task, Tetlock, a psychologist with an extensive knowledge of psychology literature, must have known that this would be the case at the outset, given that he is, according to his references, well aware of the findings of Tversky and Kahneman in this regard.

The other part of this question is to assess why the cautious foxes performed better than the over-confident hedgehogs. Here Tetlock claims to have categorised his experts according to 'cognitive style'. At the same time, he explains that the hedgehogs tend to be "closer to the political centre" while foxes are "away from the centre" (without, it should be added, sufficiently explaining why this is the case). This gives us a strong clue as to why the close to the centre group is more confident, and, indeed, as to why Tetlock's categorisation according to pure 'cognitive style' may not be the best qualitative interpretation of the data. Here it seems that Tetlock has failed to take

[183] Amos Tversky and Daniel Kahneman (1973) 'Availability: a heuristic for judging frequency and probability, *Cognitive Psychology*, 2: 207-32.
[184] Daniel Kahneman (2011) *Thinking Fast and Slow*, London: Penguin, p. 13.
[185] Ibid., p. 14.
[186] Ibid., p. 5.

sufficient account of the real-world context of political expertise and forecasting. Hedgehogs may be over-confident because they *have* to be in order to get politicians and media to listen to them: over-cautious foxes do not come across as well when it comes to producing sound-bites or grabbing the attention of busy people with deadlines. In addition, forecasting in politics (as in economics) is not only about forecasting impartially: politics is often about agenda-setting too, and this is often likely to be more important than the forecast itself. This may also be why 'close to the centre hedgehogs' are over-confident: it is part of the job description.[187]

Politics, in short, does not occur in a laboratory-like vacuum but in the real world. Those who are paid to express opinions and make judgements and forecasts are necessarily influenced by political processes, e.g. the need for their paymasters to be re-elected, the need to hold onto salaried positions, the need to maintain a clearly-defined position in line with their political affiliation, and so on. Forecast accuracy may well come far down the list of priorities, explaining why 'hedgehogs' who are 'close to the centre' are less accurate than 'foxes' who are 'away from the centre / on the periphery'. Additionally, the foxes themselves may in fact be former hedgehogs who have lost their place close to the centre due to mistaken judgement and have become more cautious based on the principle of 'once bitten, twice shy'. Kahneman confirms this with the findings of an experiment in which he demonstrated to experts from various fields what he calls the "flaws in their own thinking", with the result that many of them began to rethink their assumptions about their reasoning processes.[188]

A connected point is that Tetlock does not appear to take into account the possibility of feedback loops between forecasts and outcomes in the real world: to what extent do forecasts by advisors have effects on policies and outcomes and therefore become self-fulfilling? To what extent is this, in fact, the purpose of many forecasts by committees and think tanks? When policy formation, rather than impartial judgement, is the main goal, then forecast accuracy will obviously suffer, or the outcome will itself be influenced by the forecast, which is part of the intention in the first place. This style of forecasting then becomes ingrained in the cognitive style of the expert; and since political experts of all cognitive styles are generally engaged in attempts to influence as

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[187] See Silver (2012), pp. xx-xx for a discussion of Tetlock's work on foxes and hedgehogs, and on the domination of the media by hedgehogs.
[188] Ibid., p. 9.

well as analyse the future political direction of the state, their forecasts will usually or often have a normative content that Tetlock does not appear to acknowledge.

In sum, Tetlock may very well be correct that the judgement of political experts, in terms of ability to predict future outcomes, is of dubious reliability in terms of empirical, statistical data. But this is to miss the point of the job many political experts are paid to do, i.e. to comment on policy, to set agendas, and so on. It is also not surprising in the light of the experimental findings of the cognitive psychologists Tversky and Kahneman concerning the inability of the human brain to generate accurate probabilities.[189] Additionally, there remains the question whether it is really sensible to emphasise probabilities and statistical analysis to the extent that Tetlock does when assessing political forecasts. Tetlock's study does not encompass the full complexity of the political world, which is essentially a realm of constantly evolving human interaction. His findings are only, at most, useful for understanding cognitive style (which, as we have seen, may be open to other interpretations and factors), not for comprehending the full range of real-world factors which influence the making of predictions.

In conclusion to this section, it is hoped that the two case studies explored above demonstrate some of the methodological and other problems that emerge from an over-reliance on quantitative tools in social science research. Ultimately the central points to be emphasised here are first that there is, as Karl Popper himself ultimately acknowledged, an intrinsic need for the careful qualitative framing of research questions in the social sciences, and second that the positivist methods used in the hard sciences might not always be appropriate for answering particular research questions.[190] Despite attempts by neo-positivists (e.g. Richard Rudner) to discredit the use of what they see as insufficiently rigorous methods, and to claim that all theories should be falsifiable, make predictions, be "empirically testable" and contain "lawlike generalizations"[191], it is difficult to establish that such demands are as realistic or achievable in the human sciences as they are in, for example, physics. Precisely this point has indeed been made by a number of astute observers including Tomáš

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[189] See previous note.
[190] See William A. Gorton (2006) *Karl Popper and the Social Sciences*, Albany: State University of New York Press for an extended analysis of Popper's position.
[191] Richard Rudner (1966) *Philosophy of Social Science*, Prentice Hall, p.10.

Sedláček[192], Nicholas Rescher[193] and David Orrell[194], and seems to have been accepted even by Karl Popper in his later years.[195]

With regard to the specific use of quantitative tools such as statistics, probability, regression analysis, mathematical modelling and so on, the work of Taleb on 'black swans', as well as that of O.H. Pilkey and Linda Pilkey-Jarvis in environmental studies[196] and David Orrell in economics[197], suggests that statistical probability or other types of mathematical modelling may not be the best way of understanding a range of alternative potential futures, and in fact may have no more scientific value than a rough rule-of-thumb for which the exception is said to prove the rule. Furthermore, the weight of evidence outlined above, and further developed in their individual works by a number of the authors mentioned in this section[198] (for whose full arguments there is no space here), suggests that purely numerical analysis, unaccompanied by qualitative methods, does not give as much insight into the complex, intricate workings of the political and social spheres as the supporters of quantitative methodologies claim, and that, if used, it needs to be placed within a qualitative framework or risk being devoid of true scientific value, as King, Keohane and Verba in particular show. Therefore we have no option but to look at the full range of qualitative tools available if we are to move forward with the task of addressing the future in the social sciences, and the future of China in particular, for the purposes of the current project.

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[192] Tomáš Sedláček (2011) *Economics of Good and Evil: The Quest for Economic Meaning from Gilgamesh to Wall Street*, Oxford: Oxford University Press.

[193] Nicholas Rescher (1998) *Predicting The Future: An Introduction to the Theory of Forecasting*, Albany: State University of New York Press.

[194] David Orrell (2007) *The Future of Everything: The Science of Prediction*, New York: Basic Books.

[195] See Gorton (2006) Chapter 3 for a detailed account of Popper's shifting analysis of the possibility of law-like prediction existing in the social sciences.

[196] O.H. Pilkey and Linda Pilkey-Jarvis (2007) *Useless Arithmetic: Why Environmental Scientists Can't Predict the Future*, New York: Columbia University Press. The authors demonstrate the inadequacy of mathematical models for predicting environmental outcomes in specific cases.

[197] David Orrell (2010) *Economyths: Ten Ways That Economics Gets it Wrong*, London: Icon Books. On page 85 Orrell notes the failure of quantitative economic tools such as bell curves and statistical models to predict the current economic crisis.

[198] Namely, Orrell (2007) and (2010), Pilkey and Pilkey-Jarvis (2007), Sedláček (2011), King, Keohane and Verba (1994), and Silverman (2000) and (2010).

3.4 Evaluating qualitative methodologies for investigating the future: what are the options?

To acknowledge that research into understanding the future of a complex socio-political entity such as China needs to be framed qualitatively is still to be confronted with a wide range of methodological approaches, as outlined in the extensive research design literature, examples of which have already been mentioned.[199] In this section I will examine as full a range of the available methods as possible in order to focus in on the ones which appear to be most suitable for this project or, at worst, the least unsuitable.

A good starting point is to look at the five broad approaches to research analysed by Creswell. These are based on his study of "several books" which he has "synthesized to reflect scholarly, rigorous approaches to qualitative research"[200], as well as to assist the social sciences researcher in selecting among "a baffling number of choices"[201] by pinpointing "approaches with systematic procedures for inquiry."[202] The reason for starting with Creswell is that he explains the nature of each approach in detail, including the advantages and disadvantages of each, their application, their design, and so on. It is also necessary, given the large number of qualitative research design textbooks available, to start somewhere, and Creswell's clear division of the task into specific approaches allows a clearly-defined entry point.

The five approaches Creswell discusses are (in his order of presentation) narrative research, phenomenology, grounded theory, ethnography and case studies. In addition, he mentions two others, participatory action research and discourse analysis, which he states are beyond the scope of his book's analysis, but which might be worth considering for the purposes of this project. These "five major types"[203] of approaches, Creswell claims, cover a broad spectrum of methods which are subsumed into one of the approaches, but all lie within what he calls an "*interpretive qualitative research* approach", with a focus on "interpretive elements of procedures."[204] This last point is important because it forces the researcher to be self-reflective concerning methods of data interpretation, which implies taking into account during the process of research

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[199] Namely: Brady and Collier (2004); Bryman (2008); Creswell (2007); Silverman (2000) and (2010); May (2001); and King, Keohane and Verba (1994).
[200] Creswell (2007), p. 9.
[201] Ibid., p. 6.
[202] Ibid., p. 9.
[203] Ibid., p. 5.
[204] Ibid., p. 3 (Creswell's italics).

design the many opportunities for such necessarily non-quantitative interpretation to distort the data in some way that might have adverse effects on the validity of any conclusions reached, as well as to acknowledge occasions on which subjective interpretation has entered into the analysis.

Let us, then, begin by sifting through the qualitative research approaches outlined by Creswell in order to assess which, if any, of them might be used for examining the future in political and social science. The two criteria to be used in this process of sifting are simply these: first, to assess to what extent the approaches can be practically applied to the wide range of data available concerning China's historical development and present circumstances (i.e. scholarly works on history, economics, the environment, politics, etc.) in order to work this information in some way into a projection of the future; and second, whether the approaches will allow something of academic and general interest concerning China's future to be revealed or not. Any approaches that do not meet these two criteria can be immediately rejected.

Beginning with narrative research, Creswell explains that it "is best for capturing the detailed stories or life experiences of a single life or the lives of a small number of individuals".[205] This focus on the experiences of individuals would seem to disqualify narrative research from consideration for this project for two reasons: first, 'experiences' and 'stories' indicate that this approach attempts to establish an account of what has happened in the past, rather than referring specifically to the future; and second, the focus on the 'stories of individuals' would seem not to apply directly to the need here to analyse the future prospects of China. Regarding the latter point, even if the experience of individuals might have some bearing on the future – as indeed it does – there are simply too many individuals involved in creating the future Chinese reality for there to be space here to consider them in detail one by one, except perhaps in terms of examples subsumed in case studies.[206] In addition, in terms of examining expert forecasts of China's future (a task which seems well worth undertaking in the field of political science), it would be a Rylean category mistake to class these expert analyses as 'narratives'. For all these reasons, narrative research can be eliminated from the design structure of this project.

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[205] Ibid., p. 55.
[206] See below for an analysis of the case study approach.

Turning to Creswell's second approach, phenomenology, Creswell states that the "type of problem best suited for this form of research is one in which it is important to understand several individuals' common or shared experiences of a phenomenon."[207] In brief, this appears to disqualify phenomenology from consideration for this project for the same reasons as those given for narrative research.

Creswell's third approach is grounded theory. This approach, developed by sociologists, is used "to *generate or discover a theory*"[208] concerning a particular process involving numbers of people. The research is usually conducted in the field, and is based on interviews and observations of participants involved in the particular process being studied.

For the purposes of the research project here in progress grounded theory certainly seems at first glance to be interesting. Interviewing Chinese people concerning, for example, the transformation of their local environment might be a productive way of generating data concerning the changes occurring in Chinese society going forward. On the other hand, it would be impossible to generate from such research sufficient information concerning the overall direction of Chinese development in the country as a whole, and so a large number of such research projects would need to be compiled in order to get a sense of the larger picture. Even then, the research would consist rather in analysing the results of the grounded theory projects themselves using another methodology to produce some kind of aggregate of the data. At any rate, in terms of this project there simply is not time or space to accomplish such an enormous task, and so a research approach involving a more holistic, larger-scale or more 'macro' approach to the phenomenon of Chinese development is needed. For this reason the grounded theory approach has to be rejected.

Creswell's fourth approach is ethnographic research, which comes from the field of anthropology. Ethnography is used "to describe how a cultural group works and to explore the beliefs, language, behaviors, and issues such as power, resistance, and dominance."[209] This is done through fieldwork, usually observation of the cultural group at close quarters.

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[207] Creswell (2007), p. 60.
[208] Ibid., p. 63 (Creswell's italics).
[209] Ibid., p. 70.

Objections with regard to ethnography are similar to those for grounded theory. While ethnography, like grounded theory, certainly could be of interest in generating information about China's development on a cultural level by means of the researcher gathering data in the field among the Chinese people, it would be difficult to find a way to frame this data in such a way as to give an overall picture of Chinese development at a macro level. Again, a series of such studies would be required for which there is simply no time or space here, as well as another methodological approach to analyse the data compiled from the series of ethnographic research projects. In addition, it is not certain that such research would give an informative picture of China's development on a political and economic level as well as the cultural one that would inevitably be the main focus. For these reasons, ethnography has to be excluded from the current project.

This leaves Creswell's fifth approach, the use of a case study or studies, for consideration. The use of case studies is certainly very useful in qualitative research in the social sciences and, as Creswell notes, is frequently used in political science. As already seen in the section above concerning quantitative methodology, where we looked at two political science research projects as case studies representing quantitative research in general, it is useful when the researcher wants to focus "on an issue or concern, and then selects one bounded case … [or] multiple case studies to illustrate this issue."[210] This use of examples to illustrate or explain a phenomenon is certainly relevant to this project, and demands serious consideration here.

Creswell refers the reader to Robert K. Yin's comprehensive analysis of case study research.[211] In this work Yin indeed points out that a classic use of the case study within political science is Graham Allison's (1971) study of the Cuban missile crisis, which enabled Allison to analyse three competing theories to explain this and other phenomena.[212] Further, Yin describes the case study approach as being a good research tool when "a 'how' or 'why' question is being asked about a contemporary set of events, over which the investigator has little or no control."[213] He also suggests that case study is pertinent when the researcher aims to conduct "an empirical inquiry that …

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[210] Ibid., p. 74.
[211] Robert K. Yin (2003) *Case Study Research: Design and Methods* (3rd edition), Thousand Oaks, California: Sage Publications.
[212] Graham T. Allison (1971) *Essence of Decision: Explaining the Cuban Missile Crisis*, Boston: Little, Brown.
[213] Yin (2003), p. 9.

investigates a contemporary phenomenon within its real-life context, especially when ... the boundaries between phenomenon and context are not clearly evident."[214] This would seem to fit an inquiry into China's development on the level of "cover[ing] contextual conditions – believing that they might be highly pertinent to your phenomenon of study"[215], and so appears to be very useful for studying the present and past conditions of China's rise, as well as other related phenomena such as examples of expert views of China's development; but on the other hand the use of individual case studies still does not seem to provide a framework within which to address the way in which the present circumstances produce or transform into future outcomes.

As regards this project, case studies certainly constitute an effective tool which can be used in order to illustrate specific points (as we saw concerning the use of quantitative research), but it appears difficult to achieve the overall goal of the project in this way. Case studies seem appropriate for illustrative or explanatory use, within the broader framework of understanding China's future development; but to construct that framework (the overarching research design) a different approach is needed, one that enables a macro-scale analysis of China's future, one that encompasses the broad range of phenomena (such as economic growth, political system, cultural and environmental factors, and so on) that contribute to China's development. Thus, while case studies can certainly be used to illustrate specific points along the journey of this research project, they cannot provide an overall structure for the entirety of the project, and it therefore becomes necessary to look elsewhere for this structure.

Before looking elsewhere, however, it is necessary to conclude this examination of Creswell's approaches with a look at the other two other approaches he mentions in passing, i.e. participatory action research and discourse analysis. Participatory action research is "aimed at social change and examining the political structures that deprive and oppress groups of people" by examining the "macro-community level".[216] This appears interesting until we remember that this project attempts to understand what China's future will or might be, a task which precedes any attempt at social change. The current project, in other words, might lay the groundwork for a piece of participatory action research based on some of the findings that may emerge in these pages; but it is

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[214] Ibid., p. 13.
[215] Idem.
[216] Ibid., p. 11.

difficult to see how this approach could encompass a description or explanation of China's future per se for the purposes of this project.

Moving on to discourse analysis, Creswell explains that

> Discourse and conversational analysis involves analyzing the content of text for syntax, semantics, and social and historical situatedness ... The basic premise is that language is not transparent or value free.[217]

Again, this might appear interesting at first glance, but since the analysis occurs, according to Creswell, "[a]t the micro-level"[218], as well as primarily dealing with language, it does not fit the requirements of this project for a macro-level analysis of phenomena. This is not to exclude the analysis of text – for example expert analyses of China's development, forecasts concerning China's future, and so on – but to acknowledge that even were discourse analysis to be used to examine texts, this would still need to be done in a larger framework that permits macro-level analysis. Discourse analysis could indeed be useful for understanding the standpoint of a range of commentators and experts analysing China's development and future; but this still needs to be placed within some other, overarching research design structure.

In sum, of Creswell's seven approaches, the most useful appears to be the case study (as well as acknowledging that some kind of discourse or content analysis of texts could be conducted within specific case studies); but even this approach appears unsuited to attempting to understand political outcomes based on present-day circumstances, and cannot be utilised for the overall research design of the project because it does not have any capacity to encompass an analysis of the future at a macro-level.

At this point the next step could be to explore the range of qualitative methodologies on offer in some of the other research design textbooks. Tim May's (2001) *Social Research: Issues, Methods and Process (3rd edition)* is one possibility. However, a perusal of the methodology chapters reveals that the catalogue of methods outlined is no more helpful than Creswell's: apart from statistics and surveys, which are quantitative, the other methods examined are interviewing, participant observation, documentary research and comparative research. The problems with participant observation and interviews have already been covered in the section on grounded theory above, while comparative

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[217] Idem.
[218] Idem.

research can be ruled out because this is not a comparative project. Documentary research seems promising, but just as with the discussion of discourse and content analysis above, this research method would need to be placed within an overarching research framework that attempts to account for the future in some way.

An exhaustive study of other qualitative social research textbooks such as Silverman (2010) and King, Keohane and Verba (1994) reveals that they are no more helpful when it comes to finding a methodology for analysing the future. So it seems to be necessary to look elsewhere than in the social sciences research design literature for some methodological tools or research designs that would allow an examination of the future specifically. Another possibility for finding such tools or designs is to locate some literature dealing specifically with methodological approaches to forecasting or otherwise assessing future outcomes. It is to this task that we shall turn in the next section.

3.5 Evaluating future-specific methodologies: alternative approaches

Among the academic works which deal with methodologies for examining the future there is one text which offers some hope with regard to future-specific research design. This is Nicholas Rescher's (1998) *Predicting The Future: An Introduction to the Theory of Forecasting*, which examines in detail the ways in which science and academia have attempted to predict or otherwise understand the future, and to assess the effectiveness of the methods employed. Rescher's book is particularly relevant in that it includes a thorough examination of the numerous methodological difficulties involved in trying to forecast complex real world phenomena, such as those in the field of politics.[219] Its author is also uniquely qualified to undertake such a study since he is an academic philosopher of science who, most notably, worked on developing and testing forecasting methodologies at the RAND Corporation between 1954 and 1956.

Rescher is frank about the problems inherent in attempting to predict the future. He does not deny that the track record of prediction in the social sciences (in particular) is patchy, to say the least, and that "[t]he predictor's task is undoubtedly a difficult one,

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[219] Rescher (1998), especially Chapter 6: 'Predictive Methods'.

going along a path strewn with obstacles and dangers."[220] He explains the reason for this as follows:

> The difficulty is that most realistic forecasting models are based on a vast host of interrelated assumptions on which the outcomes predicted hinge in a highly sensitive way. And in the study of complex phenomena (such as world development, for example) it is somewhere between difficult and impossible to establish the tenability of these assumptions sufficiently firmly to engender ready confidence in the resultant predictions.[221]

In other words, none of the methods used to predict the future – for example, use of probabilities, statistics, extrapolations, mathematical modelling, amalgamation of expert forecasts, and so on – has been scientifically demonstrated to be superior to the others in terms of overall reliability and consistency of results:

> As things stand, empirical studies that compare the results of different methods in a systematic way are all too few. And such evidence as there is indicates what is only to be expected – namely that no single predictive method is superior overall, and that the situation must be addressed on a case-by-case basis.[222]

Rescher's conclusion here ties in with Creswell's recommendation to take a 'pragmatic' approach to choosing methodologies.

Others who have examined the track record of prediction, such as David Orrell and William Sherden[223], confirm Rescher's finding that the science of prediction is in its infancy and that none of the current methods for predicting the future in the social sciences has been sufficiently endorsed by empirical research to be considered anywhere close to one hundred per cent reliable. Orrell, whose PhD research was on model error in weather forecasting, and who compares his findings to the fields of health and economics, finds that there are problems with the type of long-range prediction, involving the use of computer and mathematical modelling, that is currently employed in all three fields. It is worth quoting Orrell's conclusions in full:

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[220] Ibid., p. 246.
[221] Ibid., p. 110.
[222] Ibid., p. 111.
[223] Orrell (2007), and William A. Sherden (1998) *The Fortune Sellers: The Big Business of Buying and Selling Predictions*, New York: John Wiley & Sons.

While celestial objects are happy to obey dictates like the law of gravity, and are amenable to modelling by equations, systems like the weather and the economy appear more anarchic. The rules they obey are local and social in nature, rather than global. As a result, in all three areas of prediction, scientists run into the same problems. The underlying system is uncomputable, so models rely on parameterizations that introduce model errors. As the model is refined, the number of unknown parameters increases. The multiple feedback loops that characterize such models also make them sensitive to even small errors in parameterization. As a result, the models are highly flexible and can be made to match past data, but accurate predictions of the future remain elusive. The models are often most useful as tools for understanding the present function of the underlying systems.[224]

Pilkey and Pilkey-Jarvis confirm from their analysis of environmental modelling that sensitivity to initial parameters is an intractable problem in mathematical and computer modelling of the future in complex systems.[225] This means that planning for the future based on modelling (or other related quantitative methods such as extrapolation) is – at least as far as the technical capability of today's science is concerned – fundamentally flawed as far as obtaining accurate long-range predictions is concerned. Since chaos and complexity theory are also relatively in their infancy[226], and the problem of system sensitivity to initial parameters – often referred to as 'the butterfly effect' – has not yet been solved by sufficiently sophisticated computer modelling, the use of modelling for predicting the future in the social sciences has to be put to one side for the foreseeable future, even if one allows for the possibility that the science and technology will one day be able to solve the sensitivity issue.

The rejection of mathematical modelling (at least as far as the present-day state of the science is concerned) appears, once again, to leave qualitative methods such as the analysis of informed expert opinion as the sole remaining alternative. However, given that even the most sophisticated and complex computer model is unable to provide reliably accurate future predictions of world events, what chance is there that individual human beings will be more successful? The separate findings of the psychologists Tetlock and Kahneman demonstrate conclusively that the stand-alone judgements of

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[224] Orrell (2007), pp. 265-266.
[225] Pilkey and Pilkey-Jarvis (2007).
[226] See M. Mitchell Waldrop (1993) *Complexity: The Emerging Science at the Edge of Order and Chaos*, London: Viking.

individual experts in a given field are extremely unreliable for predictive purposes.[227] This conclusion, Rescher notes, is particularly true in the social sciences, with political science at the lower end of predictive accuracy:

> On present indications, the performance record of the predictive resource that expert judgment affords us is rather mixed: good in engineering, fair in medicine, shaky in economics, and distinctly poor in sociopolitical affairs.[228]

Rescher goes on to explore the possibility that amalgamating expert forecasts might lead to a more accurate predictive technique than simply looking at the stand-alone views of individual experts. This would take advantage of Rescher's suggestion that averaging experts' opinions may be "an actually advantageous predictive process in various *particular* contexts by way of outperforming most individual predictions"[229]. One possible solution to the problem of unreliable expert judgement is a method Rescher and his colleagues Olaf Helmer and Norman Dalkey developed while they were working at the Rand Corporation in the 1950s, which they called the 'Delphi' method.[230] This is

> A widely used predictive process that proceeds by way of a structured interaction among a group of predictors ... This predictive technique works without any face-to-face interaction among the group members. Instead, it uses a series of successive questionnaires to elicit responses from a panel of experts to arrive at an aggregate prediction about future developments ... the experts do not meet to debate the question, but are kept apart from each other so that their judgment will not be influenced by social pressure or other distortions of interactive small-group processes. Instead, the Delphi process method calls for information elicitation punctuated by feedback stages in which earlier responses are conveyed to the group in a condensed, statistically summarized form.[231]

Thus, the Delphi method appears to offer a way of obtaining an aggregated, improved expert judgment while avoiding the psychological pitfalls of groupthink, peer pressure, domineering individuals, and so on. Statistician and forecaster Nate Silver, who correctly predicted the outcomes of the 2008 and 2012 US presidential elections, also

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[227] See Tetlock (2005) and Kahneman (2011), as well as the previous section of this chapter.
[228] Rescher (1998), p. 90.
[229] Ibid., p. 92 (italics Rescher's own).
[230] Initially explained in Olaf Helmer and Nicholas Rescher (1959) 'On the epistemology of the inexact sciences', *Management Science* 6: 25-52.
[231] Rescher (1998), pp. 92-93.

recommends combining a wide range of expert opinions in forming an outcome forecast, while ensuring that the opinions used have been formed in isolation from each other as far as possible, as they are in the Delphi method.[232]

So what is the track record of the Delphi method? The answer can only be: mixed. From the original development of the Delphi method in the 1950s until the writing of his book *Predicting the Future* in the late 1990s, Rescher had four decades to review the results of his brainchild. He concludes that, while the method had a degree of success in predicting technological advances, in the social sciences the forecasts produced were no "better than half right"[233] and that

> All the indications are that on such matters one would not be well advised to put much reliance on Delphi methods. After all, even the 'consensus of experts' is no royal road to predictive success. The history of science amply illustrates that consensus in error is no less common than consensus in truth.[234]

This last point is a crucial one. As Thomas S. Kuhn has demonstrated, science often progresses by sudden, unexpected 'paradigm shifts', where the previous consensus opinion is overthrown by a new, emerging one, often thrown up by the revolutionary and original ideas of outsiders such as Einstein, Darwin, Newton, and so on, which challenge the prevailing wisdom of the time.[235] The same can be said to be true of the social sciences, where, despite the fact that the accumulation of knowledge is less incremental than in the natural sciences, unconventional thinkers such as Nietzsche and Marx have unarguably made a major impression on a number of academic disciplines with ideas that stood in stark contrast to the received opinion of their age, which has, in most fields, been replaced over time by the ideas of newcomers.

So, to return to the main theme, if even the consensus opinion of experts is not necessarily to be trusted, is there any possibility of developing a methodologically reliable and systematic approach to prediction in the social sciences? The verdict appears to be gloomy: given the present state of the field that might (if it were to be given a name) be called the 'science of prediction', there appears to be no standardized quantitative or qualitative method for producing accurate, reliable forecasts in the

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[232] See Silver (2012).
[233] Ibid., p. 96.
[234] Idem.
[235] Thomas S. Kuhn (1970) *The Structure of Scientific Revolutions* (2nd edition), Chicago: The University of Chicago Press.

social sciences, and none of the existing methodologies that have been tried to date have been demonstrated to be superior to a naïve extrapolation based on present trends and statistics.[236] It is even doubtful whether Silver's recommendation of a Bayesian approach to forecasting, using a combination of qualitative assessment and statistical analysis, is likely to be successful in forecasting or preparing for real-world socio-political outcomes.[237]

However, there is another way of looking at this negative conclusion: one can adopt an alternative view of the study of the future by exploring *methodologies which do not involve an attempt to predict*. In other words, if there is no established method for predicting the future reliably and rigorously, then what is needed is a method for investigating future outcomes that avoids the attempt to predict altogether by seeking to understand the future through a range of potential alternatives instead of forecasting fixed outcomes. Rescher indicates this possibility in a passage that is worth quoting in full:

> Prediction deals in indicating what the future *will* be (although perhaps only probably or presumably so). To indicate of what the future *might* be is something else again. And this means that prediction is something very different from scenario projection. In constructing scenarios for the future we employ the imagination to explore possibilities. Here the aim of the enterprise is to explore instructive prospects and alternatives. And concern lies outside of the specifically predictive domain, where our concern is with actualities rather than possibilities.
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> To be sure, there is nothing wrong with scenario construction as such; it is unquestionably an interesting and instructive venture. However, the fact remains that scenarios are a matter surveying *possible* courses of future developments. They are imaginative speculations about what *might* happen and not informative speculations attempting to preindicate what *will* happen. By their very nature, then, prediction and scenario construction are different sorts of enterprises. Their pursuit involves different aims and their effective cultivation calls for very different sorts of intellectual resources; namely, realistic foresight in the one case and lively imagination in the other.[238]

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[236] See Kahneman (2011). It should be noted that extrapolation is also far from 100 per cent reliable because of black swans, randomness, and the general complexity of social phenomena.
[237] See Silver (2012).
[238] Rescher (1998), p. 40.

So, could scenario construction, which does not attempt to predict but simply to envisage alternative future outcomes, be a methodology by which the present study of China's future could be accomplished, and by means of which political science could attempt to explore the future? The following section will examine the possibility.

3.6 Scenario construction: envisaging alternative future outcomes without predicting

The detailed analysis conducted in this chapter and the previous one has demonstrated that the interactions of real-world phenomena in social science fields such as politics are extremely complex and (at the present time) either difficult or impossible to predict. It has also shown that methodological approaches which attempt to identify specific outcomes while eliminating others are, given the current state of scientific progress, unreliable. Scenario construction – also often referred to as scenario planning – represents an alternative to outright prediction in that, according to Chermack et al's review of scenario planning literature, "[t]he distinguishing factor for scenarios is that they are not predictions or forecasts", insofar as they "are not concerned with getting the future 'right'"[239]. Scenarios do not aim to provide certainties or even probabilities, but rather to examine alternatives via the "telling of multiple stories that cover a variety of plausible future occurrences."[240] Ditrych concurs that building scenarios implies that "forecasts are abandoned in favour of creative thinking about possible alternative futures with the aim of challenging intersubjectively shared assumptions in the field of both theory and practice, broadening the space of thinking about international affairs, and advancing political wisdom in the process of confronting the future as it unreels with the imagined future(s)."[241] This section will therefore explore the question of whether constructing scenarios of China's future can provide political scientists with a method for understanding potential outcomes that is valuable and informative, and which at the same time is based on something better than mere guesswork or imagination.

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[239] Thomas J. Chermack, Susan A. Lynham & Wendy E. A. Ruona, 'A review of scenario planning literature', *Futures Research Quarterly*, Summer 2001, 7-31.
[240] Ibid., p. 7.
[241] Ditrych (2012), p. 93.

At the outset of this examination of scenario construction there is a need to take care not to over-estimate what can be achieved. It is essential to understand the limitations of the methodology as well as its strengths. It is also important to ensure, if scenarios are to be used, that they are well-constructed and based on sound evidence. Thus the tasks in this section are two: first, to explore the advantages and disadvantages of using scenarios in terms of the strengths and weaknesses of the methodology; and second, to search for a research design framework that will produce scenarios that are both rigorously based on complex real-world data and, at the same time, of interest to political scientists in the sense that they provide new information and can therefore be used as a stimulus and starting-point for further research. In short, before continuing with the remainder of this research project, it is vital to ensure that scenario construction as a methodological tool is capable of producing results that are based on solid empirical evidence, scientifically interesting, and which provide new information with which practitioners can work.

In order, then, to decide whether scenario construction is a tool which can provide useful information about China's future it is necessary to think through the strengths and weaknesses of the methodology. There is a need here to specify, therefore, that the focus of this section is thus on the implications of the practical application of the methodology rather than a review of its history. For the historical development of scenario construction/planning, particularly as it relates to political thinking and IR, the reader is referred to Neumann and Øverland's 2004 article in *International Studies Perspectives*, or Ondřej Ditrych's more recent article (in Czech), which examines in detail the use of scenario construction in IR up to the present.[242]

Beginning, therefore, with an examination of the methodology's strengths, there appear to be four major advantages of using scenarios to explore the future. First, as has been stated, scenarios are unique in that they do not predict definite results, but rather describe alternative possible outcomes. These outcomes can then be analysed in terms of a variety of causal factors of relevance to political science, as well as other disciplines within the social sciences. Among these factors could be, for instance, the present-day decision-making that could cause a particular scenario to occur, or the chain of events that would lead from the present up to the realisation of the scenario. Thus the imagining of a scenario allows the political scientist to think through the circumstances

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[242] See Neumann and Øverland (2004) and Ditrych (2012).

leading up to the scenario event occurring in reality, as well as the consequences if it were to come to pass. This can be of great interest not only to academics but also to real-world decision-makers such as politicians, economists, environmental experts, think tanks, businesspeople and so on. The scenario as an imaginative tool – as long as it is based on reasoning from empirical data – therefore appears to have great potential for assisting real-world decision-making processes as well as academic theorising.

A second, and connected, advantage of scenario planning is that it permits an exploration and discussion of future uncertainties – Taleb's 'black swans'[243] – which cannot be well encompassed by other methodologies. The use of scenarios "encourages organizational leaders to think the unthinkable" with the goal of forcing "planners to consider paradigms that challenge their current thinking."[244] This is a way of overcoming the kind of erroneous thinking – which scenario expert Paul Shoemaker calls "overconfidence and tunnel vision"[245] – that leads to ill-informed certainty about the future which is ultimately not borne out by new developments and hard-to-predict processes of historical change. Shoemaker lists a number of erroneous historical predictions (such as the chairman of IBM announcing in 1943 that "there is a world market for about five computers" and Lord Kelvin's proclamation that "Heavier-than-air flying machines are impossible"[246]) which look ridiculous in hindsight, and which result from under- or over-estimating the likelihood of innovation and radical change. According to Chermack et al, "[s]cenario planning has proven to be an effective method for identifying critical future uncertainties and investigating 'blind spots' in the organization"[247]. This then allows planners to think through the circumstances and effects of less likely but potentially very disruptive future outcomes for which they would otherwise be unprepared, and to prepare contingency measures to help deal with black swans. For political scientists the advantages of having a tool through which to analyse a range of future uncertainties and the circumstances from which such black swans might arise are obvious, although such analysis would need to be undertaken with care to maintain scientific rigour.

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[243] See Taleb (2008).
[244] Chermack et al (2001), p. 7.
[245] Paul J. H. Shoemaker, 'Scenario planning: a tool for strategic thinking', *Sloan Management Review* Winter 1995, 25-40, p. 25.
[246] Ibid., p. 26.
[247] Chermack et al (2001), p. 8.

The third strength of scenario construction is that it is a good match for the natural processes of the human mind as it is neurologically constructed. Psychological studies such as the work of Tetlock, Kahneman and others, as well as neurobiological work such as Damasio's demonstrate that the human brain is ill-adapted to judgement of statistical probabilities concerning the future, but has evolved to evaluate future outcomes by forming and comparing scenarios and mental images of various types (i.e. visual, aural, sensual, verbal, memory-based, emotion-based, and so on).[248] This means that the scenario as a methodological tool is well suited to the way the human brain naturally plans for the future, which it achieves by "imagin[ing] a wide range of potential futures, potential situations"[249]. At the same time, according to Shoemaker, scenario planning differs from complex and difficult-to-digest computer simulations in that it "simplifies the avalanche of data into a limited number of possible states."[250] Alternative scenarios and narratives of the future can therefore be easily assimilated by both experts and non-experts alike without the need for confusing statistics, computer models, and other quantitative methods which, as we have seen, even the brains of experts do not process well at an intuitive level.[251]

The last, and perhaps most important advantage of using scenarios to analyse the future is that this methodological approach has the potential, if used carefully, to negate or minimise many of the flaws inherent in the human brain's approach to making predictions. The Nobel Prize-winning psychologist Daniel Kahneman attributes the tendency to make errors of judgement to the evolved processes by which the brain makes decisions, as numerous psychological studies conducted by Kahneman and others have demonstrated.[252] As discussed above, overconfidence in one's ability to assess the future, particularly among experts, is one problem.[253] Psychological studies have also shown that the human brain has an optimistic bias (which Kahneman calls 'planning fallacy') that tends to produce "plans and forecasts that are unrealistically close to best-case scenarios", leading to disastrous outcomes in planned project

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[248] See Tetlock (2005) and Kahneman (2011) for evidence of psychological inability in humans to assess future probabilities accurately; see Antonio R. Damasio (2006) *Descartes' Error*, London: Vintage for evidence of the brain's use of images and scenarios during the reasoning process.

[249] David McRaney (2012) *You Are Not So Smart: Why Your Memory Is Mostly Fiction, Why You Have Too Many Friends on Facebook, and 46 Other Ways You're Deluding Yourself*, Oxford: Oneworld Publications, p. 21.

[250] Shoemaker (1995), p. 26.

[251] See pages 14-16 above.

[252] See note 97.

[253] See note 100.

outcomes "in the experiences of individuals, governments, and businesses." [254] Kahneman also describes the brain as a "machine for jumping to conclusions"[255]: in connection with the optimistic bias already mentioned, the brain also has a 'confirmation bias' which suppresses doubt and ambiguity and encourages unsupported belief.[256] According to Kahneman's research, other flaws inherent in human decision-making, prediction and judgement, many of which operate in conjunction, include: the 'illusion of skill' (the false notion that one's established method of prediction is more accurate than it is)[257]; the 'illusion of understanding' (the false notion that one comprehends the cause-and-effect process of complex or chaotic phenomena fully)[258]; the 'illusion of inevitability' (also known as 'hindsight bias', i.e. the false notion that past events *had* to turn out the way they did)[259]; the 'narrative fallacy' (also called 'confabulation' by psychologists, i.e. the unconscious creation of simplified or false stories to explain the outcomes of complex, chaotic or random processes)[260]; the 'conjunction fallacy' (believing that two events are more likely to happen together than separately)[261]; and the 'halo effect' (the tendency to attribute superhuman abilities to those who have been lucky or persistent enough to succeed at something difficult)[262]. To Kahneman's psychological analysis, scenario expert Paul J. H. Shoemaker adds that "underprediction and overprediction of change" are "two common errors in decision-making" that can be overcome by the use of scenarios.[263] All of these problems inherent in the decision-making processes and judgement of individuals could potentially be overcome (or at least minimised) by carefully constructing a set of scenarios based on empirical data and evidence derived from as wide a range of sources as possible. According to a range of research into 'group intelligence' reviewed by James Surowiecki, aggregating information in this way is likely to reduce the tendency for individual opinion to be wildly mistaken[264] to a minimum.[265] After construction, the evidence-based scenarios could then be used as the basis for discussions or planning concerning

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[254] Kahneman (2011), p. 250.
[255] Ibid., p. 79.
[256] Ibid., pp. 80-81.
[257] Ibid., pp. 209-221.
[258] Ibid., pp. 199-208.
[259] Ibid., pp. 200-204.
[260] Ibid., pp. 199-200. See also McRaney (2012), pp. 14-26.
[261] Kahneman (2011), pp. 158-159.
[262] Ibid. pp. 82-85.
[263] Shoemaker (1995), p. 27.
[264] See Tetlock (2005).
[265] See James Surowiecki (2004) *The Wisdom of Crowds*, New York: Doubleday, especially Chapter 1.

the phenomena involved, thus potentially bypassing to as great an extent as possible the range of psychological overconfidence, illusions, biases, and jumping to conclusions outlined by Kahneman and others.

Unfortunately, however, scenario construction also has at least two major weaknesses and limitations. The most obvious of these is that, in the words of Shoemaker, scenarios "can still be affected by biases"[266], i.e. the same biases that were outlined in the previous paragraph. The use of scenarios as a methodological tool demands an awareness of the danger of the research being undermined by these biases, as well as care being taken to acknowledge and avoid the psychological tendency to fall into bias. A particular danger is the risk of being persuaded that a specific scenario is more likely to occur than it is in reality. Shoemaker notes that "[c]onjunction fallacies can increase the perceived plausibility of unlikely scenarios, especially if they offer concrete detail and are causally coherent."[267] One antidote to the psychological effect of these fallacies and biases is to remember that scenarios do *not* assess *probability* but *possibility*, while at the same time taking extreme care to exclude scenarios that are not supported by a sufficient weight of empirical evidence. While bias would then inevitably remain a serious problem affecting scenario construction, it is to be hoped that a combination of sufficient awareness of the psychological processes involved in the production of bias and painstaking attention to empirical detail in constructing scenarios can mitigate the effects of such bias. The use of a range of expert opinion should also reduce the effects of individual bias to a minimum.

Another weakness is the potential for wild imaginings to take the place of reasoned analysis. A scenario is, in effect, a story, and a story is, in actuality, a fiction. This fictional, imaginative element to scenario planning is a major weakness that needs to be compensated for by a close attention to the detail of the real-world past and present circumstances from which the future emerges. Some scenario planners such as Wack recommend allowing the subconscious to take over and the imagination to run wild[268]; but this seems inadvisable in the world of political science, which needs to be firmly grounded in reality to avoid the ever-present danger of creating exactly the highly improbable scenarios mentioned in the previous paragraph. Again, taking painstaking care to steer clear of implausible scenarios which lack a basis in fact, even at the risk of

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[266] Shoemaker (1995), p. 38.
[267] Idem.
[268] Chermack et al (2001), p. 16.

failing to pay attention to what Shoemaker calls 'things we don't know we don't know'[269], seems the only course available. A plausibility check of this nature can be achieved by examining a wide range of expert opinion and analysis concerning the phenomenon under study, rather than relying merely on the products of one's own imagination.

At the same time, as we have seen, scenarios can deal with uncertainty and the possibility of black swans better than methodologies which attempt to predict or extrapolate the future. The act of scenario construction thus demands walking a tightrope between avoiding the impossible and/or implausible and accounting for highly improbable but unlikely outcomes that could still come to pass. This constitutes another weakness of scenario construction. How is one to distinguish between an impossible or implausible outcome and a highly unlikely one in the complex, uncertain world of social phenomena? Where is one to draw the line? The only answer can be that this is a question of individual or group judgement, both of which, as we have seen, are prone to psychological bias and fallacy. Again, the only available solution must be to raise awareness of the inherent risks involved in the methodological enterprise. Keeping in mind the possibility of wandering too far into unempirical fantasy – or too close to the type of linear extrapolation or tunnel vision that causes one to omit the black swan scenario – can be the only way to ensure that the scenarios constructed are informative, realistic and based in empirical fact. In addition, the inclusion of some kind of check for plausibility, with an empirical element included (for example in the form of a comparison of the scenarios under consideration with the historical record) in the scenario building process should assist with this difficult task.

In short, looking at the characteristics of scenario construction discussed above it appears that while the methodology has clear limitations and weaknesses, it has enough strengths which are absent from the predictive methodologies discussed in the previous sections to conclude that there is a qualitative case to be made for its use, if only as a *faute de mieux* or lack-of-a-better-alternative approach to the material being researched. In other words, despite the problems inherent in scenario construction, it would seem the best – or least bad – methodological approach available given the present state of forecasting studies in the social sciences. The proviso here is that painstaking care needs to be taken to construct the scenarios based on empirical, real-

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[269] Shoemaker (1995), p. 38.

world evidence and to retain awareness of the possibility of psychological biases creeping into the research in order to mitigate them as far as possible.

In concluding that scenario construction is the best available methodological approach to the material of this research project, all that remains in this chapter is to outline the overall research design and to explain how exactly the scenarios will be constructed. This is the topic of the following, final section.

3.7 Building a research design framework based on scenario construction

To build a research design framework for this project with sufficient rigour to satisfy the demands of political science it is necessary at this point to be very clear about the aims and methods to be used from here onwards. The first necessary step, then, is to outline the aims to be achieved and the methods to be used, and the second is to build a research design framework to encompass these aims and methods. Thus, having decided that scenario construction should be the end goal of the project, it is vital to decide how to construct those scenarios, i.e. what methodological process to use in order to arrive at the scenarios. Given the fact that the debate in the IR literature about developing an optimal variation from among the scenario construction methodologies available is inconclusive,[270] it is probable that the methodological framework ultimately arrived at here will be, like other recent attempts,[271] somewhat experimental in nature, being eclectically adapted from a range of sources. Nevertheless, it is imperative to make the attempt in order to discover if there is a way of constructing scenarios, framed within a clear methodological process that includes expert opinion and analysis[272], which can describe alternative futures based on real-world trends and uncertainties. It is vital to do this because Ditrych's 2012 review of scenario construction in the field of

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[270] See for instance Ditrych (2012) and Neumann and Øverland (2004). Both these papers attempt to establish 'new' scenario construction methodologies for IR, with the implication that scenario construction is very far from being an established, consistently-used methodology in the field.

[271] See previous note.

[272] Developing a clear methodology for including expert analysis, forecasts and opinion in a scenario construction process is not attempted by IR scenario builders such as Ditrych (2012), Neumann and Øverland (2004), or Steven Bernstein, Richard Ned Lebow, Janice Gross Stein and Steven Weber (2000) 'God gave physics the easy problems: adapting social science to an unpredictable world', *European Journal of International Relations*, Vol. 6, No. 1, pp. 43–76. This thesis' attempt to do precisely this is therefore, as far as I am aware, the first of its kind within the field of IR.

IR demonstrates by omission that no attempt to base scenario construction on an examination of expert opinion has yet been made.[273] For his own methodological approach to scenario building Ditrych relies heavily on a 2000 paper (by Bernstein et al[274]) which outlines a (rather unsatisfactory) scenario construction process briefly and without examples. This reveals that scenario construction as a research method remains only partially formed, and is therefore in need of considerable further development.

At this point, the situation is akin to having an empty flowchart with the finished scenarios themselves – followed by a review of the efficacy of the scenarios – in the final two boxes, and working backwards from there (see Figure 1). This figure shows that the central aim of the project is to construct scenarios, while the methods to be used to get to the stage of constructing the scenarios are not yet clear.

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│  Final part (a): Attempt at     │
│  scenario construction based    │
│  on previous parts              │
└─────────────────────────────────┘
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┌─────────────────────────────────┐
│  Final part (b): Critical       │
│  analysis of scenario           │
│  construction project           │
└─────────────────────────────────┘
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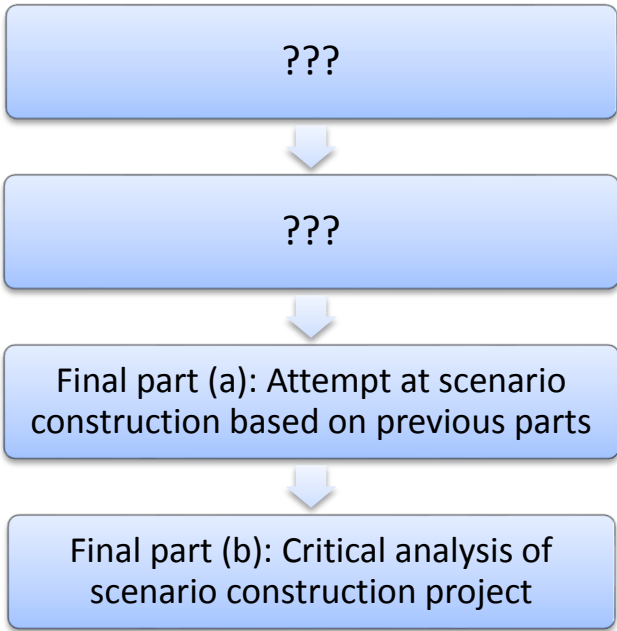
Figure 1: Incomplete research design flowchart

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[273] See Ditrych (2012).
[274] See Bernstein et al (2000).

The first thing to establish is where to get the information about China's future upon which to base the scenarios, and what to do with it once it has been obtained. The (rather sparse) scenario construction literature in political science and IR is generally rather vague and imprecise on these key points[275], and so it seems necessary, for the purposes of this project, to formulate a precise methodological means for acquiring and building in the necessary information for the specific purposes of this study. The previous section demonstrated that it is advisable to use as wide a range of sources as possible to obtain information, but two questions remain. First, from what types of sources is the information to be obtained? And second, how is the information to be processed?

In response to the first question, the best alternative would seem to be an extensive review of literature in the field of China studies, particularly focusing on works dealing with politics, economics, history, the environment, society and culture. Here the focus methodologically should be on a qualitative, interpretative analysis of information that relates to China's present situation and how it formed out of past phenomena. The approach to be used here is comparable to Kevin Dunn's 'historical representation', which he describes as a "deeply contextualised historical analysis"[276] steeped in an analysis of sources, but bearing in mind at all times the origin of those sources – in this case, the authors' backgrounds, political orientation, etc. As Dunn points out, it is important to remember that "researchers are not neutral observers, but often are intimately related to the power hierarchies at play", and therefore "it is important that a researcher be sensitive to these issues."[277] Experts come at the problem of China from different angles (e.g. disgruntled expatriate Chinese, supporters of the Communist Party, liberal institutionalists, realists, American hawks, American doves, and so on), and it is important to pass their interpretations through a critical hermeneutic filter which takes account of possible bias and historical context. Many have pointed to a need for deep interpretation and rich contextualisation of historical texts and authors:

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[275] See for instance Ditrych (2012), Neumann and Øverland (2004) and Bernstein et al (2000). It is important to reiterate that none of these works, nor any other which I am aware of within the political science and IR scenario construction literature, supplies a clear method for inputting historical and current information concerning the phenomenon under study into the construction of scenarios, nor do they attempt to examine, analyse or aggregate a range of expert opinion. It is therefore necessary to develop and outline a suitable approach in the following pages, based on an eclectic interpretation and adaptation of a broader range of literature.

[276] Kevin C. Dunn 'Historical Interpretations', in Audie Klotz and Deepa Prakash (eds.) (2008) *Qualitative Methods in International Relations: A Pluralist Guide*, Houndmills: Palgrave Macmillan, p. 83.

[277] Ibid., p. 82.

there is no space or necessity here to explore their arguments in detail here, but among those who have developed historical interpretivism and hermeneutics in the social sciences are Max Weber, Wilhelm Dilthey and Martin Heidegger, as well as critical theorists such as Jurgen Habermas and Robert W. Cox.[278]

In other words, before China's future can be explored, there needs to be a clear picture of China's present circumstances and how they emerged from the tangle of factors which constitute the nation's past. Such a picture can only be derived, however imperfectly given the need for subjective interpretation of the literature by the author of this work, via an analysis of the historical and contextual factors that created the current situation. Such an analysis demands an interpretative examination of scholarly research within each of the stated fields in order to obtain as clear a summary of China's current situation as possible, even at the clear risk of over-generalising or portraying trends and developments in a way that some scholars may consider incorrect or factually inaccurate.[279]

The historically-contextualised examination to be conducted will therefore be based on extensive critical reading of the relevant scholarly literature concerning China's past and present, remembering the need to filter hermeneutically for bias. This last requirement means that it is "necessary to engage in a wide variety of sources when researching"[280] in order to "historicize and contextualize"[281] as full a picture as possible. Since this part of the study is dealing with the past and present, it is to be hoped that the historical record and detailed examination of the present circumstances of China will produce a set of relatively brief summaries which will encompass the major conclusions of the scholarly literature, even allowing for some variation of opinion concerning China's present situation. Any major variation can be incorporated into the summaries as necessary. Thereafter, these summaries can be used to acquire a reasonably clear and usable overall picture of China's current historical position and the present state of its political, economic, environmental, cultural and social development.

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[278] For concise introductions to the history and study of hermeneutics the reader is referred to Jean Grondin (1994) *Introduction to Philosophical Hermeneutics*, Yale University Press, and Anthony C. Thiselton (2009) *Hermeneutics: An Introduction*, Grand Rapids, Michigan: William B. Eerdmans Publishing.

[279] This fits Silver's (2012) pragmatic suggestions for steadily improving the evidential basis of forecasts via qualitative judgement of a wide range of expert views and other evidence.

[280] Dunn (2008), p. 83.

[281] Ibid., p. 90.

Of course, as stated previously, it is necessary to remember that understanding issues relating to a nation's historical development is always dependent on a great deal of subjective interpretation produced by the subjective act of historicising, and that summaries garnered in this part of the research will also inevitably entail a good deal of approximation and generalisation in order to extract overall trends. Despite such obvious limitations inherent in historical research carried out by a single author, it is hoped that the analysis contained in this part of the study will indicate the major factors and broad trends inherent in China's historical development as it passes from the past and present into the future, even if there is no doubt that some of the conclusions obtained will inevitably be considered contentious by some scholars in the field of China studies. The important thing here is to acknowledge that while this attempt to extract overall historical trends via extensive study of the literature is ambitious, perhaps even in the extreme, and will undoubtedly contain many flaws, it is still essential to make the attempt. Only by this means does it appear possible to produce an informative picture of China's historical development that would otherwise be lacking without the attempt to summarise the literature and generalise about trends and factors influencing the phenomena being studied.

The next step will be to address China's future and the matter of turning it into scenarios. Since in this case there is no historical record and no facts to examine, a different approach is needed. Here the *faute de mieux* option appears to be to extrapolate from the rationale contained within the Delphi method that utilising expert opinion, collected without face-to-face interaction, may be a way to overcome individual bias, but to apply it to an analysis of existing published expert forecasts concerning China's future instead of aggregating and producing probabilities as the Delphi method does. Thus the task in this stage of the research would be to use content analysis to categorise a sample of recent (i.e. published this century, after the year 2000) scholarly and other expert-authored publications (i.e. serious work by non-academic writers with specialist knowledge of China, such as diplomats, government officials, journalists specialising in China, and so on) concerning China's future, with a view to creating a typology of forecasts contained within these works. Such a typology would allow the forecasts to be categorised in order to develop them into a small set of scenarios. For example, it can be anticipated at the outset that the forecasts could be divided into three groups: those expecting China to continue rising and to challenge US

global hegemony on a political and economic level; those expecting China's economic growth and political development to slow and stagnate; and those expecting China to decline or collapse. The analysis and typology of the expert forecasts can therefore take the form of deciding to what extent they fit into these three categories, and whether more or different categories need to be constructed to encompass the forecasts. Thereafter, the typology arrived at should allow a clear, concise picture to emerge of the range of expert opinion at the present time. Scenarios can then be constructed on the basis of this typology of expert opinion, while bearing in mind the possibility of there being alternative scenarios that the experts have missed. Such a typology should also allow one to see exactly what weight of expert opinion supports each conclusion, while excluding forecasts that lie outside the bounds of plausibility and are not supported by evidence.

Of course, it is important to remember here that just because a majority of the experts sampled may support a certain scenario does not imply that the conclusion of this study would be that this outcome will come to pass. Again, it needs to be emphasised that the task being undertaken is not predictive, but an outline of a range of future possibilities. Even if only one expert (or even none) supports a certain outcome, it can still be used to construct a scenario if it is simultaneously qualitatively plausible and possible, and presents an alternative future that is not encompassed by other experts. Awareness of expert fallibility concerning the future, even when the experts broadly agree, combined with the need to take account of the essential unknowability of the future in the realm of social phenomena, necessitates bearing in mind that this study does not aim to produce a definite prediction, but to assess possibilities via scenario construction. The goal, it should be remembered, is to assess and understand alternative futures with a view to providing a clear picture of these alternatives for further research, as well as to create a view of China's possible futures that encourages political scientists and decision-makers alike to plan with a range of contingencies in mind.

Figure 2, taken from Sherden[282], illustrates the rationale for this aspect of the research (please also refer to the Theory / Literature Review Chapter for more detail). An evaluation of China's unknowable path into the future needs to take account of what Sherden calls 'the realm of future possibilities'. Scenario-based planning entails preparing for a range of potential futures, as well as in some cases (e.g. in business)

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[282] Sherden (1998), p. 242.

actively trying to choose among and generate those futures. Clearly in the case of China's future it is difficult for individuals (even if they are China's leaders) to plot an exact course through the future possibilities, particularly if an 'extremely rare event' (black swan) were to occur. The *raison d'etre* of scenario construction in the case of political futures is to allow decision-makers and experts to understand the range of possibilities with a view to preparing for and perhaps even influencing the future in some way, for example by suggesting, developing or implementing policies that take into account the possibilities. This is as relevant for non-Chinese politicians and political scientists as for the Chinese themselves, given that China's development, by common consensus, affects the entire globalised community of nations, and it is therefore important for all involved in international politics to have a clear grasp of the different futures open to China at this point in time.

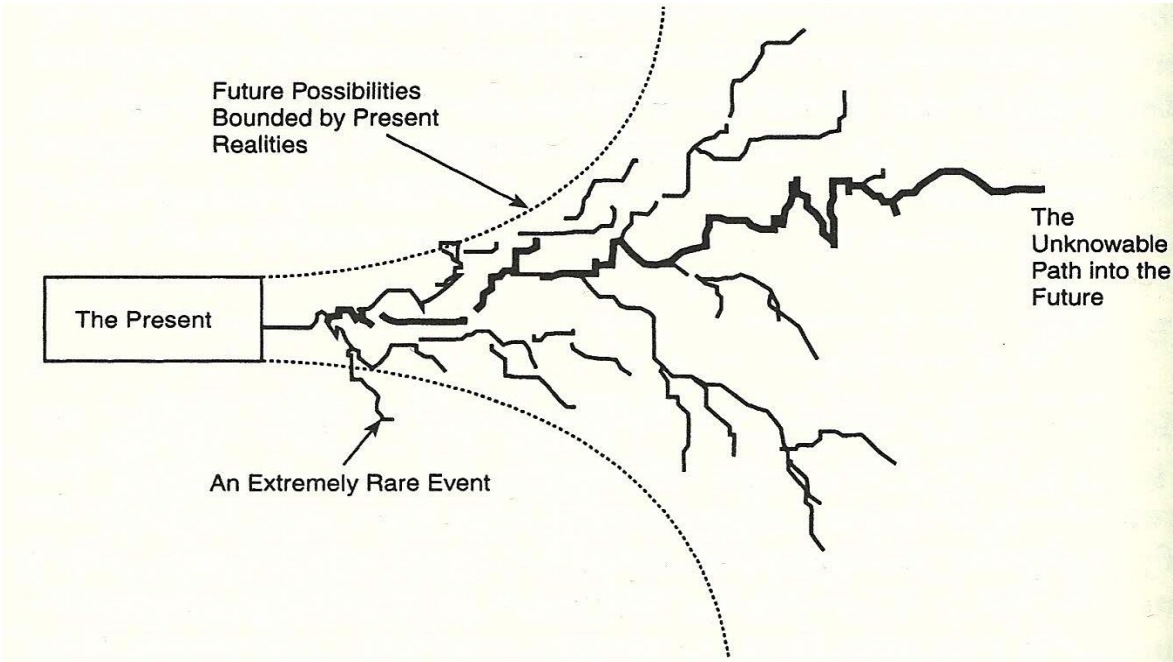**Figure 2: The realm of future possibilities (Sherden)**

One more methodological consideration needs to be mentioned before completing the research design. This is the necessity of striving to make the scenarios fit for use, i.e. to make them scientifically interesting, practically useful and concise enough to be easily comprehended and recalled. To this end it is essential not to construct too many

scenarios since, as Chermack et al point out in their review of scenario planning literature, sheer quantity can be overwhelming.[283] As a case in point, Broadfoot and Enright's attempt to construct scenarios of China's future founders on their decision to outline a set of 16 interconnected futures[284]: it is simply too difficult to assimilate all these possibilities and to assess what they might mean, and so this particular effort is, in fact, of little practical use, instead representing a useful warning as to what a scenario construction exercise should *not* look like. Chermack et al consider an end result of scenario construction containing more than three scenarios "unmanageable."[285] Van der Heijden suggests that there should be "more than two stories, but fewer than five" (i.e. three or four scenarios) in order to "reflect the uncertainty inherent in the future", to "allow a multi-disciplinary approach to developing and discussing theories about the world", to "present findings in a tangible real-world context", and to "use a causal mode of thinking, which is intuitively comfortable."[286] So it would seem that it is best to aim for three or four final scenarios concerning China's future in order that they should be meaningful, interesting and manageable: this is in line with the tentative view of China's future as containing three possible scenarios outlined above.

In addition to the number of scenarios to be constructed, Shoemaker suggests four other criteria for assessing whether, once they are constructed, the scenarios are "any good."[287] These appear to be a useful guide both for how to construct the scenarios once the typology of expert views has taken shape, as well as how to review their efficacy in the final stage of the project. The first of these criteria is for the scenarios to be relevant and, if possible, to have an impact on the reader which challenges current paradigms. The second criterion is internal consistency within the scenario (plausibility). The third proviso is that the scenarios should be "archetypal", i.e. "they should describe generically different futures rather than variations on one theme."[288] And the last is that "each scenario ideally should describe an equilibrium or a state in which the system might exist for some length of time, as opposed to being highly

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[283] Chermack et al (2001).
[284] Robert C. Broadfoot and Michael J. Enright (2008) 'Different Futures for China', in W. John Hoffmann and Michael J. Enright (eds.) *China Into the Future: Making Sense of the World's Most Dynamic Economy*, Singapore: John Wiley & Sons.
[285] Chermack et al (2001), p. 24.
[286] Idem. (summarising Van der Heijden's suggestions).
[287] Shoemaker (1995), p. 30.
[288] Idem.

transient."[289] These four criteria provide a clear framework within which both to construct and review the scenarios, which Shoemaker summarises thus: "In short, the scenarios should cover a wide range of possibilities and highlight competing perspectives ... while focusing on interlinkages and the internal logic within each future."[290]

The actual steps to be undertaken throughout the process of constructing the scenarios need now to be specified. Shoemaker's ten steps for constructing scenarios outline a systematic process, and identify a suitably clear and coherent progression.[291] The systematic clarity of Shoemaker's steps is appealing, since this is lacking in most descriptions of scenario building methodology. Using Shoemaker's steps thus introduces a logical methodological framework for the scenario construction process to be built upon, and ensures that the experimental use of scenarios to examine the future of China will consist of something more than plucking imaginary narratives out of a hat. However, his steps need to be adapted to the needs of the present project (Shoemaker's scenario planning process was designed for businesses rather than the social sciences, so steps such as 'Identify the Major Stakeholders' are not relevant here). Simplifying Shoemaker's process for the sake of relevance and simplicity, we end up with the following scenario construction diagram:

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[289] Idem.
[290] Idem.
[291] Ibid., pp. 28-30.

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┌─────────────────────────────────────────┐
│        Step 1: Define the scope          │
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┌─────────────────────────────────────────┐
│        Step 2: Identify basic trends     │
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│     Step 3: Identify key uncertainties   │
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                    ▼
┌─────────────────────────────────────────┐
│     Step 4: Construct scenario themes    │
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│ Step 5: Check for consistency and plausibility │
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│ Step 6: Develop final ('learning') scenarios │
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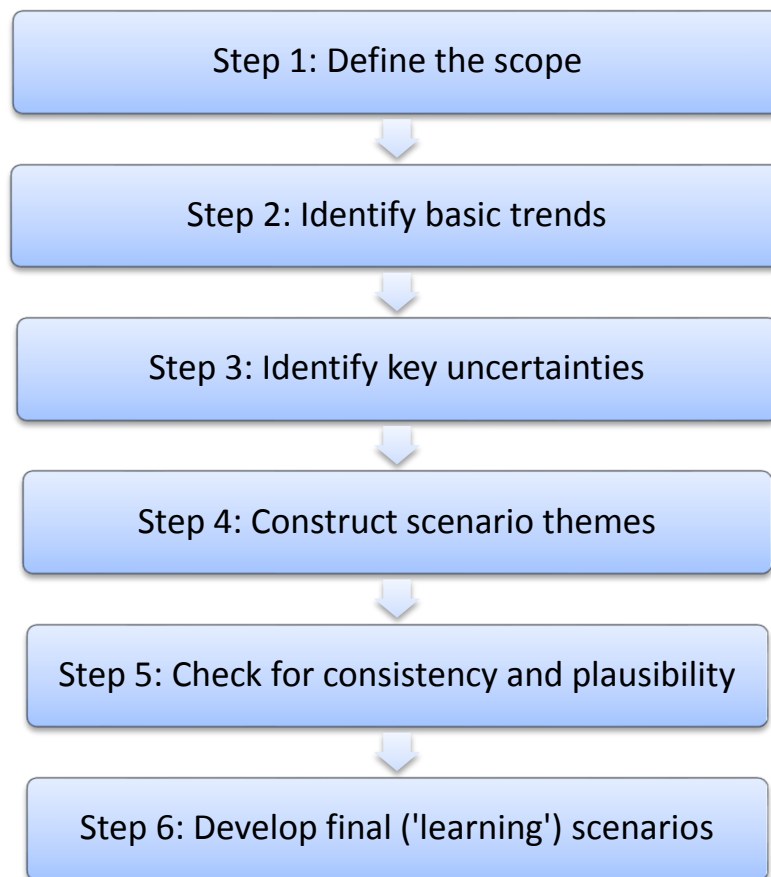
Figure 3: Scenario construction process[292]

It is a good idea to analyse these steps in more detail before completing the research design. Step 1 (constituting the "time frame and scope of analysis"[293]) here would correspond to identifying what the scenarios are meant to describe (i.e. China's future), what time frame they are mean to include (e.g. 10, 20, 50 or 100 years ahead), and what specific aspects of China's future to include (e.g. political developments, economic developments, environmental developments, sociocultural developments, international relations, etc.). This scope needs to be specified in the first stage of the research, i.e. before commencing on an analysis of the literature. Step 2 involves analysis of the literature concerning China's past and present to identify major trends in the nation's development. Step 3 involves further analysis of the literature to identify key uncertainties. Step 4 depends on the typology of expert China forecasts. Step 5,

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[292] Based on Shoemaker (1995), pp. 28-30.
[293] Ibid., p. 28.

according to Shoemaker, specifically involves assessing whether the trends are "compatible within the chosen time frame" and whether "the scenarios combine of uncertainties that indeed go together"[294] and should be conducted after the typology is in place. Step 6 involves completing each scenario by constructing a short, memorable story from the disparate elements collected together, as well as "capturing its essence in a title" in order to "make the story easy to follow and remember."[295] At Step 6 (which corresponds to Shoemaker's Step 7, having omitted his Step 2, 'Identify the Major Stakeholders') "you have constructed learning scenarios, which are tools for research and study".[296] This seems sufficient for the purposes and scope of the present project, since the scenarios are intended to provide material for further discussion and research of China's future, not to be the basis for the decision-making processes of an institution such as a company (Shoemaker's Steps 8-10).[297]

After considering the methodological factors influencing the project discussed in this section, the broad structure of the research design has taken shape, enabling the flowchart representing the stages in the research to be completed (Figure 4). This flowchart correlates the steps in the scenario construction process (in bracketed italics) with the specific research activity to be undertaken (placed first).

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[294] Ibid., p. 29.
[295] Idem.
[296] Idem.
[297] Ibid., pp. 29-30. Shoemaker's Steps 8-10, which constitute a review and finalisation process for completing the scenarios and planning action to be taken on their basis, could be undertaken as a future extension of this project, if the conclusions here arrived at should suggest that it is worth building on the findings.
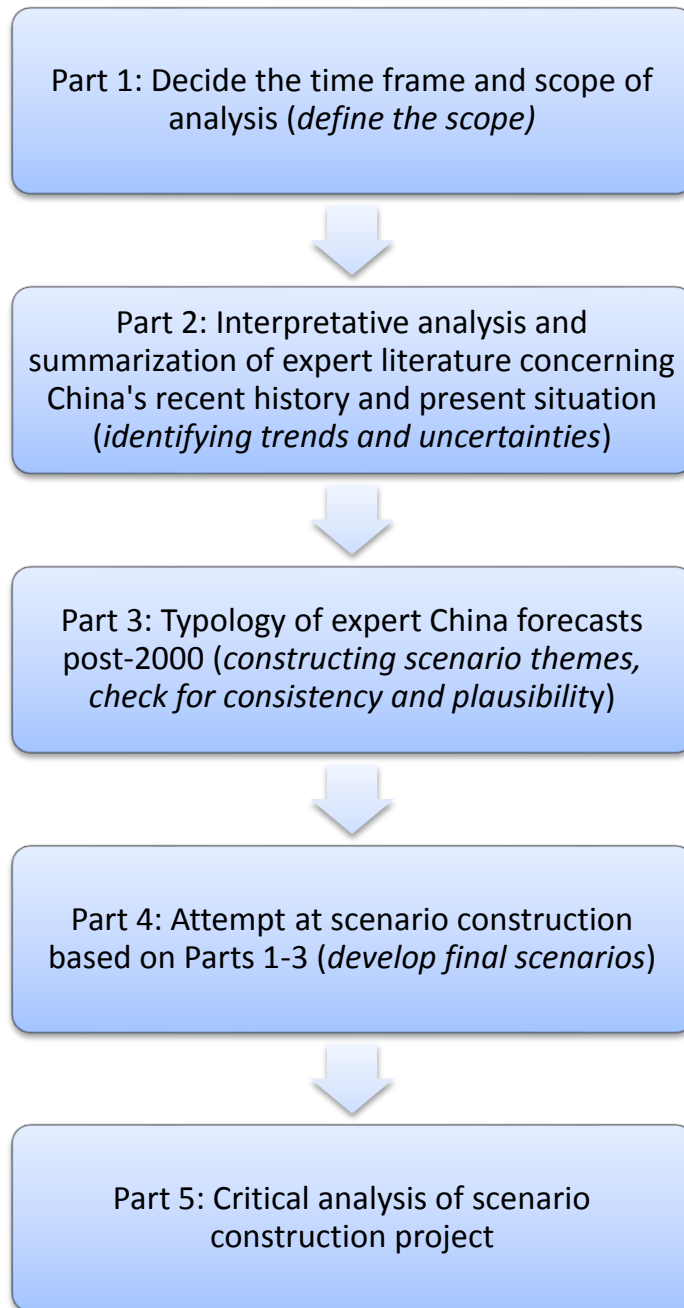
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┌─────────────────────────────────────┐
│  Part 1: Decide the time frame and   │
│  scope of analysis (*define the      │
│  scope)*                             │
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┌─────────────────────────────────────┐
│  Part 2: Interpretative analysis and │
│  summarization of expert literature  │
│  concerning China's recent history   │
│  and present situation (*identifying │
│  trends and uncertainties*)          │
└─────────────────────────────────────┘
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┌─────────────────────────────────────┐
│  Part 3: Typology of expert China    │
│  forecasts post-2000 (*constructing  │
│  scenario themes, check for          │
│  consistency and plausibility*)      │
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┌─────────────────────────────────────┐
│  Part 4: Attempt at scenario         │
│  construction based on Parts 1-3     │
│  (*develop final scenarios*)         │
└─────────────────────────────────────┘
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┌─────────────────────────────────────┐
│  Part 5: Critical analysis of        │
│  scenario construction project       │
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Figure 4: Complete research design flowchart

3.8   Conclusion and summary

In conclusion to this section there remains only the necessity to point out (as this chapter and the theory chapter have demonstrated) that futures in political science and the social sciences are uncertain, unpredictable and unknowable and that there is as yet

no methodological approach which can soundly and scientifically arrive at a detailed description of what is yet to come (and, in all probability, never will be). The justification, therefore, for using scenarios as a *faute de mieux* methodology to outline possible futures is that the future *needs* to be considered in detail in order that today's decision-makers and analysts can achieve a clearer understanding of the range and consequences of potential outcomes. It is hoped that the resulting scenarios and the conclusions ultimately generated by this project will be of some interest to both China experts and to the wider world of political science, international relations and other related fields such as economics and environmental studies, as well as providing some stimulating insight and a basis for discussion by political decision-makers and anybody else who is interested in China's development and its impact on the future of our world.

Chapter 4:   China, past and present

4.1   Introduction: defining the scope of the analysis

In order to build on the theoretical and methodological considerations discussed in the previous two chapters, the next step is to set about the process of constructing scenarios of China's future according to the flowchart (Figure 4) at the end of the preceding chapter. This means that the task of the present chapter is to work through Steps 1 to 3 in the scenario construction process framed in Figure 3 above, i.e. 'Step 1: Define the scope', 'Step 2: Identify basic trends', and 'Step 3: Identify key uncertainties' (equivalent to Parts 1 and 2 in Figure 4).

Step 1, defining the scope, will be accomplished in this introduction, while Steps 2 and 3, identifying basic trends and key uncertainties, will be conducted towards the end of the chapter. In between Steps 1 and 2 there will be a detailed analysis of key aspects of China's history, culture, society, philosophy, economy, environment, science and politics in order to lay the basis for drawing out the basic trends and uncertainties in China's present situation upon which the scenarios will subsequently be constructed. At the end of the chapter there will be a brief conclusion and summary to present the results of Steps 1 to 3. The whole chapter will thereby correspond to Parts 1 and 2 in the complete research design flowchart (Figure 4), and will constitute the foundation for the next stage in the research, i.e. a typology of expert forecasts of China's future as a basis for constructing scenario themes.

What remains for the remainder of this section is to define the scope of the overall analysis of the research project. This means answering the following three questions. First, what exactly are the scenarios intended to describe? Second, what time frame should they encompass? And third, what specific aspects of China's development should be included in the analysis from which the scenarios will be constructed?

The answer of the first of these questions could be simply 'China's future'. However, closer consideration reveals that there are at least two aspects of China's future that are relevant to constructing scenarios. These are its domestic politics (i.e. its internal affairs) and its international relations (i.e. its impact on the world as a whole). It is, in fact, self-evidently impossible to separate these two aspects of China's rise and

development: what transpires in China domestically will have an impact on its international relations, and how its international affairs evolve will also necessarily affect its domestic politics.[298] Thus the scenarios will need to describe both China's domestic and international future development, and be organised in such a way that the interconnectivity between these two aspects is built-in.

The second question concerning the time frame is difficult to answer. Should the scenarios project 10, 20, 50 or 100 years ahead, or even further? This decision seems arbitrary; but thinking about the time frame forces us to consider the fact that dating future developments with precision seems both impossible to achieve and unnecessary in practice. The perils of attempting to predict outcomes at exact points in future time, as Vaclav Smil points out, "are particularly great in China's case".[299] Remembering also the conclusion in the preceding chapter that scenarios are designed to indicate possibilities rather than predict, it perhaps makes more sense to define the scenarios in terms of the approximate timeframe that most current expert predictions (as well as the Chinese government's own planning processes[300]) about China's future consider. This is especially important because this project's scenarios, according to the research design formulated at the end of the preceding chapter, need to be constructed upon the basis of the expert forecasts available. Thus, this means restricting the scenarios to the range included in the majority of the expert analyses, i.e. the next few decades leading up to about the middle of the coming century (approximately 2050), bearing in mind Smil's warning that strictly "date-bound quantitative predictions" lead only to "failed prophecies", especially in such as complex case as the future of China.[301]

Regarding the final question concerning the aspects of China's development to be considered in the construction of scenarios, the conclusions reached in the theory chapter demand that China be regarded as a complex system (or complex phenomenon), with multiple contributing factors. This necessitates the inclusion of all relevant aspects of Chinese historical development. These, as already mentioned, include the following: culture/philosophy/society, economy, environment, scientific development

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[298] Milner (1991) demonstrates that domestic and international politics are interconnected, not separate as Waltzian neo-realism suggests.

[299] Vaclav Smil (2004) *China's Past, China's Future: Energy, Food, Environment*, New York: RoutledgeCurzon, p. 8.

[300] The Chinese Academy of Sciences has published a series of 8 scientific studies under the title 'Roadmap to 2050', indicating that this timeframe is the one that Chinese medium- to long-term scientific projects in energy, agriculture, the environment and other areas of technological development are using.

[301] Smil (2004), p. 8.

and politics. These five aspects of China have interacted in a complex way to create its present, and will continue so to interact in the formation of the country's future. As we saw in the theory chapter, scholars such as Robert Cox and George Lawson have emphasised the necessity of keeping the complex processes of history in mind when attempting to understand international phenomena and to construct theories in international relations.[302] This, they stress, is particularly true when considering processes of historical change such as the shift in global power structures involved in the rise of China. Vaclav Smil, a leading expert on China's environment, has also warned repeatedly of the tendency of Western observers to have "ahistorical assumptions and unrealistic expectations"[303] regarding China's future development. Thus there is no alternative to considering all the complex historical aspects of the rise of China – in terms of its economic, environmental, sociocultural, scientific and political development – in the building of the scenarios, trying as much as possible to draw multiple threads together in the construction process. To leave out some of these factors would mean falling back into the errors of over-simplification, ahistoricity and excessive reliance on quantification (discussed in the preceding two chapters) that deprive the positivist, neo-realist turn in contemporary IR and political science of true explanatory power.

In short, the scope of the analysis will be the following: the scenarios will be designed to include China's sociocultural, economic, environmental, scientific and political development, in terms of both the domestic and international spheres, projecting forward approximately to the middle of the present century, in an interlocking network of interdependent effects (see Figure 5: 'Defining the scope of the analysis'). This is obviously a task of daunting difficulty. However, it can be achieved by putting the secondary literature in these five areas through a historically-informed, critical-hermeneutic filter[304], with the clear aim of summarising key factors influencing China's development and nothing more. In the next sections we will therefore begin the task of

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[302] See Cox (1981, 2010) and Lawson (2010).

[303] Smil (2004), p. 174.

[304] Throughout his body of work, the influential international critical theorist Robert W. Cox emphasises the intrinsic importance of incorporating history into the study of IR "as a way of understanding processes that go on in the world … to understand the meaning of things in terms of the thought-processes of the people who were acting, and their understanding of the structure of relationships within which they lived. To understand history in those terms is what gives meaning to events" (Schouten, P. (2009) 'Theory Talk #37: Robert Cox on World Orders, Historical Change, and the Purpose of Theory in International Relations', *Theory Talks*, http://www.theorytalks.org/2010/03/theory-talk-37.html (12-03-2010), p. 3).

analysing the China literature for evidence of cultural, social, economic, environmental and political trends arising from China's past and present in order to establish a basis for the analysis, assessment and typology of the expert forecasts upon which our scenarios are to be constructed. At the end of each section a bullet-pointed summary will provide the key conclusions to take forward to the next stages in the scenario construction process.

Figure 5: Defining the scope of the analysis

4.2   Analysis of the China literature: an overview

The first section of the first part of this chapter will include a concise analysis of China's social and cultural development within a historical framework, drawing out the major long-term philosophical, socio-cultural and socio-political developments which have shaped the contemporary Chinese nation.   This historically-based analysis will terminate with the foundation of the PRC in 1949, leaving the examination of the present era of Chinese history (i.e. post-1949) for the following sections. The next three

sections will cover the past development and present state of China's scientific, environmental and economic spheres. The fifth and sixth sections will then analyse China's domestic politics and international relations. Each of these sections will focus on the key historically-framed aspects of China's development in these five areas in order to draw out the most significant factors for the task of understanding China's future through scenarios.

The final part of the chapter will equate to Steps 2 and 3 in Figure 3, i.e. 'Identify key trends' and 'Identify key uncertainties'. This will be done by drawing together the key information from the first six sections in this chapter on Chinese culture and society, scientific development, environment, economy, domestic politics, and international politics. The conclusion will then summarise the chapter's findings, and set the stage for the remaining steps in the scenario construction process to be carried out in subsequent chapters.

4.21 China's culture and society

Understanding China as a complex system or complex network of system effects means that it is essential to analyse its culture and society within a framework of its historical development. The sociocultural aspects of a nation arise from long historical processes and behaviour defined by tradition, and will also affect other aspects of its development such as its politics. As former US National Security Advisor Henry Kissinger – whose diplomatic role in restarting relations between the US and the PRC in 1972 was pivotal – puts it, "Any attempt to understand China's twentieth-century diplomacy or its twenty-first-century world role must begin – even at the cost of some potential oversimplification – with a basic appreciation of the traditional context."[305]

In China's case it is especially important to consider the sociocultural context carefully because of the sheer longevity and depth of the traditions: the Chinese civilisation-

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[305] Henry Kissinger (2011) *On China*, New York: Penguin, p. 3.

state[306], as a historical entity, has a clear developmental arc stretching back to at least 1500 BCE. The origins of the Chinese ideographic writing system, and thus China's recorded history, date back to at least this period, and arguably even earlier.[307] Buried turtle shells and the shoulder blades of cattle – referred to as 'dragon bones' or 'oracle bones' – inscribed with divinations have been found in large quantities in archaeological digs near the city of Anyang in Henan province: these provide firm evidence of an early form of Chinese writing as well as a rudimentary account of a polity, traditionally called the Shang dynasty, that can clearly already be described as Chinese.[308] Thus, whereas the history of most modern European states dates back only to the late Roman Empire at most, China as a socio-political entity can already be seen in the archaeological record almost two thousand years earlier.

Amid many complex developments through more than three millennia, the basic facts of the historical evolution of the Chinese nation-state are these. Emerging from the grain farming communities of the semi-arid Chinese heartland along the course of the Yellow River[309], what is now called Han Chinese civilisation at first took the form of a number of 'warring states' competing with each other for hegemony down to the end of the third century BCE (see Figure 6). When one of these states, the Qin, merged the kingdoms by force in 221 BCE under the rule of the first emperor, Qin Shihuang (秦始皇, which means 'first Qin emperor'), the Chinese civilisation-state that exists today as a unified entity was born.[310] This polity persisted, in one form or another, with various additions, losses and regaining of territory, through a long succession of dynastic rulers (some of whom were foreign conquerors from the regions to the north, such as the Mongols and the Manchus) until the overthrow of the last dynasty, the Qing, in 1911. The period of anarchy, Japanese occupation and civil war that followed the overthrow of the last imperial dynasty was ended by the seizure of power in 1949 by the Chinese Communist Party (CCP) under Mao Zedong.[311]

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[306] Jacques (2009, p. 201), influenced by the work of Lucian Pye, uses this term to refer to China, arguing that the country consists of a number of former kingdoms that have been drawn together into one polity that is larger than Europe in terms of both geography and population.

[307] See Michael Loewe and Edward L. Shaughnessy (eds.) (1999) *The Cambridge History of Ancient China: From the Origins of Civilisation to 221 B.C.*, Cambridge: Cambridge University Press, pp. 180-183.

[308] John Keay (2008) *China: A History*, London: HarperPress, pp. 42-47.

[309] Smil (2004), p. 111.

[310] For more on China's pre-unification history, see Loewe and Shaughnessy (eds.) (1999).

[311] For more on China's history between 221 BC and 1949, see Keay (2008) or John King Fairbank and Merle Goldman (2006) *China: A New History (Second Enlarged Edition)*, Cambridge, Massachusetts: The Belknap Press of

Figure 6: The Warring States period and the Qin unification of China (278-221 BCE)[312]

Despite the political upheavals inevitable over such a long period of time, in China a definite continuity of sociocultural tradition has been retained through the many generations that have subsisted under dynastic central rule. A uniquely Chinese sensibility has been preserved in the rural communities tied to the land by the need to scratch a living from the ancestral plot.[313] The foundation of Chinese civilisation, in sharp contrast to the nomadic peoples to the north and west, has always been subsistence agriculture, "done largely without the help of draft animals."[314] This traditional reliance on human labour led naturally to a preference amongst the Han

Harvard University Press. Raymond Dawson (1978) *The Chinese Experience*, London: Weidenfeld & Nicolson, pp. xvii – xxiv also provides a clear, concise survey of the main events in Chinese history.

[312] Map obtained from Ian Mladjov's resources at the University of Michigan, available for non-commercial educational purposes at: http://sitemaker.umich.edu/mladjov/files/china256bc.jpg (accessed June 4, 2013).

[313] Dawson (1978), pp. 170-1.

[314] Smil (2004), p. 112.

Chinese for sons to till the land, and an emphasis on patriarchal father-son ancestral bloodlines and collectivist family ties.[315] Thus there persists in Chinese society today a culture of ancestor worship, as well as respect for the family ties and social harmony needed to eke out an existence in what were previously often harsh conditions of frequent floods, droughts, wars, and famines.[316]

In an adapted form which still contains recognisable elements of the ancient proto-culture, the Chinese veneration of fixed relationships and harmonious social order has come to be called 'Confucianism' in honour of the philosopher – Confucius, or Kongzi (孔子，551-479 BCE) – who began to organise the traditional rites and rituals into the basis of a unified, secular national socio-political system. This Confucian system of government and social order was endorsed by the majority of emperors and their courts, beginning with its systematization during the Han dynasty (206 BCE – 220 CE).[317] Through this official endorsement Confucianism overcame rival systems of thought such as Taoism, Legalism and Buddhism, becoming firmly cemented in Chinese civilizational socio-culture via the Neo-Confucian re-entrenchment during the Song dynasty (960 – 1279 CE).[318]

However, it was the Han dynasty emperors who first introduced the Confucian system of state bureaucracy by creating a class of scholar-bureaucrats (who were selected by examinations in the Confucian classics) to run it according to the instructions of the court in Beijing.[319] Vestiges of this system still persist today in the system of Chinese university entrance examinations and the academic hierarchy which it creates: most of the current CCP elite came through this system and thus arguably constitute a contemporary class of Confucian scholar-bureaucrats.[320] In the 12th century CE, Confucianism was condensed into an "immensely influential synthesis of ideas"[321] by the Neo-Confucian philosopher Zhu Xi (朱熹, 1130-1200 CE), which, despite the efforts

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[315] See Dawson (1978), pp. 138-141 and Pye (1985), pp. 61-63.

[316] For some historical examples of disasters affecting Chinese food production, see Elizabeth C. Economy (2004) *The River Runs Black: The Environmental Challenge to China's Future*, Ithaca, New York: Cornell University Press, pp. 36-41.

[317] See Keay (2008), pp. 151-3 and Dawson (1978), pp. 6-9.

[318] See Keay (2008), pp. 346-350.

[319] See Dawson (1978), pp. 19-24.

[320] The CCP's present relationship with Confucian tradition is very complicated. For useful, concise discussions see Jacques (2009), pp. 95-97 and 217-219, or Wu Zhong (2007) 'Beyond Confucius and communism', *Asia Times* (online version), October 3, 2007, available at: www.atimes.com/atimes/China/IJ03Ad02.html, (accessed May 29, 2013).

[321] Ibid., p. 349.

of Mao Zedong to extinguish it during the Cultural Revolution (1966-1976)[322], has suffused Chinese socio-politics ever since, even profoundly influencing Mao's own cognitive style.[323]

Confucius is the originator of the most influential system of philosophical thought in Chinese history, a fact which is all the more remarkable given that he himself claimed to have innovated nothing and to be merely a preserver of the traditions created by older, nobler men.[324] The hallmarks of Confucianism, at least as it has evolved over the centuries out of the words of the master and the scholars who built upon his philosophical foundations (especially Mencius (孟子, c. 372-289 BCE) and Xunzi (荀子, c. 312-230 BCE)) are conservatism, respect for tradition, promotion of a formal education system consisting of inculcation in traditional patterns of thought and patriotism, and the prioritising of social peace and harmony (*he*, 和) above all else – certainly above the rule of law in a formal sense, and also above the rights of the individual.[325]

A uniquely Chinese style of Confucian nationalism can therefore be seen, on the domestic Chinese level, as a doctrine for encouraging or enforcing compliance among a very large and disparate citizenry.[326] This aspect of the philosophy has in the last decade been revived by the CCP as a means of oiling the wheels of China's 'peaceful rise' (和平崛起).[327] The idea is to keep dissatisfied segments of the Chinese population in check through Confucian-style nationalist propaganda disseminated by the government and its media outlets such as *The China Daily* and *The Global Times*.[328] This tactic is intended to discourage attempts to overturn the existing order by appealing to the citizenry's sense of patriotism, defined (in part) in terms of the Confucian tradition of harmonious society (*he*).[329]

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[322] See Jonathan Spence (1990) *The Search for Modern China*, New York: W.W. Norton, pp. 635-6.

[323] Dawson (1978), p. 80.

[324] *Ibid.*, p. 70.

[325] For more on Confucian thought, see Keay (2008), pp. 69-71, or Dawson (1978), Chapter 4.

[326] For more on the intricacies and complexities of Chinese nationalism, see Wu (2007) and Lucian Pye (1985) *Asian Power and Politics: The Cultural Dimensions of Authority*, Cambridge, Massachusetts: The Belknap Press of Harvard University Press, p. 190 and pp. 194-196.

[327] See Daniel A. Bell (2008) *China's New Confucianism: Politics and Everyday Life in a Changing Society*, Princeton: Princeton University Press.

[328] See Shirk (2007), p. 85.

[329] See Bell (2008).

Thus, although the Confucian revival flies in the face of Mao's determination to eradicate what he saw as a feudal system of thought and behaviour, the hierarchical principles of Confucianism are deeply engraved in the Chinese psyche today. On the whole, younger brothers continue to defer to older brothers, sons to fathers, wives to husbands, and above all the citizens to the central government in Beijing[330] – at least as long as it keeps the economy growing at a rate which permits more and more of them to join the ranks of the urban middle classes. Indeed, the interpretation of the theory of 'peaceful rise' as an economic reward for good behaviour is the unspoken, unwritten pact that today governs relations between the Chinese government and the Chinese people.[331] This is why the frequent protests in today's PRC (despite the notable exceptions of the Tiananmen incident in June 1989 and the Falun Gong protest outside the Zhongnanhai compound in Beijing on April 25, 1999) tend to be against corrupt or overbearing local cadres and businessmen rather than the leaders of the CCP.[332]

Confucianism's impact on China thus goes far beyond the sphere of domestic social relationships and enters the realm of politics and international relations.[333] Raymond Dawson explains that

> The world of man was seen to match [the] antithesis between heaven and earth with its contrasts between superior and inferior, ruler and subject, gentleman and 'small man'. The earth was referred to as the below-Heaven (or all-under-Heaven, as it is often translated) and as a political entity it was as limitless as the vast skies above.[334]

The Confucian conception of the world as 'all-under-Heaven' (*tianxia*, 天下), with its view of a hierarchical system of governance that benevolently benefits all who participate in the system, with the rulers of China located at the centre, has profoundly influenced the Chinese view of their pivotal place and role in the world.[335] This is due

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[330] Lucian Pye (1985, p. 184) explains that "The Chinese conviction that all power should reside in the central authority – a fact that is acknowledged by the entire population – has been one of the most powerful factors in shaping Chinese history."

[331] In her (2012) 'Chinese middle class at European doorsteps', *Visegrad Insight* 2/2012: 34-37, p. 35, Marta M. Golonka explains that "The Chinese recognize that without a solid base of middle class participation, there is no way forward."

[332] Pye (1985) refers to this Chinese tendency to mistrust local leaders and factions and to prefer a unified, centralised government as a stabilising force as 'The Fear of Local Kingdoms' (pp. 189-191).

[333] Ibid., pp. 56-7.

[334] Dawson (1978), p. 75.

[335] Evidence of this can be found in Zheng Yongnian's (2010) edited volume, which contains eighteen index references to *tianxia*, including an extended discussion of the significance of the concept for contemporary IR in the chapter by Ren Xiao ('Traditional Chinese theory and practice of foreign relations: a reassessment', pp. 111-3).

to the fact that China has always been surrounded on all sides by numerous neighbouring tribes and nations with which it has had to deal: today it has land borders with 14 countries, as well as marine boundaries with three more. The Chinese name for China, *zhongguo* (中国), literally means 'central land' or 'Middle Kingdom', a linguistic indication of the psycho-culturally entrenched Chinese idea of their nation's centrality (Martin Jacques refers to this as the 'Middle Kingdom Mentality').[336] Historically this was experienced as a tributary system, whereby all surrounding peoples (i.e. the Japanese, Koreans, Vietnamese, Mongols, and so on) were supposed to kowtow to the Chinese emperor, acknowledging him as the 'Son of Heaven' (*tianzi*, 天子) in possession of the 'Mandate of Heaven' (*tianming*, 天命), in exchange for receiving "the beneficence of the Son of Heaven's rule".[337] In return, the emperor was supposed to maintain broadly peaceful relations with his neighbours and in the whole East Asian region which surrounds China.[338] The reality of this tributary system, as James Hsiung explains, was that:

> Translated into modern social-scientific terms, the hierarchy was formed by the natural interactions of China with neighboring states up and down the rungs of the prevailing ladder of relative power, although it was often expressed in quasi-familial terms (like uncle–nephew or big brother–small brother ties).[339]

Henry Kissinger, in a perceptive summary of the traditional Chinese approach to international politics, explains that

> Through trade incentives and skillful use of political theater, China coaxed neighboring peoples into observing the norms of Chinese centrality while projecting an image of awesome majesty to deter potential invaders from testing China's strength. Its goal was not to conquer and subjugate the barbarians but to "rule [them] with a loose rein" (*ji mi*) … In pursuit of these aims, the Chinese court was remarkably pragmatic about the means it employed. The Chinese bribed the barbarians, or used Han demographic superiority to dilute them; when defeated, they submitted to them, as in the beginning of the Yuan and Qing Dynasties, as a prelude to Sinicizing them. The Chinese court regularly practiced what in other contexts would be considered appeasement, albeit through an

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[336] See Jacques (2009) and Hsiung (2010), p. 29. Jacques appears to derive his notion of 'Middle Kingdom Mentality' from Pye's conception of a 'Middle Kingdom complex', which "is in part nurtured and sustained by the Chinese child's warm experience of having once been the center of his universe" (p. 199).

[337] Dawson (1978), p. 4. For more on the concepts of *tianzi* and *tianming* see ibid., pp. 9-15.

[338] For a full explanation of the tributary system, see Jacques (2009), pp. 274-6.

[339] Hsiung (2010), p. 29.

elaborate filter of protocol that allowed the Chinese elites to claim it was an assertion of benevolent superiority ... The objective was a compliant, divided periphery, rather than one directly under Chinese control.[340]

The option of warfare was, therefore, only seen as a last resort, i.e. one to be used when all else had failed. As Lucian Pye explains, "In China, order could only mean static harmony and the repression of aggression"[341], requiring, in contrast to the Japanese Samurai code of the warrior, the avoidance of direct military confrontation if at all possible. This is in line with the teachings of another important Chinese school of thought: that represented by Sun Tzu[342] (or Sunzi, 孙子), whose slim volume *The Art of War* is essentially a manual on how to wage war by minimising risks and maximising gains.[343] This is to be achieved, where possible, via craft, cunning and deception rather than physical force in order to avoid losses and guarantee success. In this aspect, Sun Tzu's ideas on warfare gel with the Confucian *tianxia* philosophy: winning wars without fighting connects to benevolent rule in a uniquely Chinese formula for establishing a harmonious society which can maintain harmonious (i.e. conflict-free, as far as possible) international relations. The ultimate aim of this approach to politics and IR is to construct a relatively peaceful, hierarchical world order in accordance with Chinese Confucian values and with the Chinese civilisation-state at its centre.

Thus, according to many scholars of Chinese political philosophy, the concept of *tianxia* lies at the core of the Chinese sociocultural and socio-political experience.[344] It is likely to have an impact, in distinct but connected ways, on both the domestic and international spheres. In the domestic sphere, the traditions of Chinese society which affect psycho-cultural, socio-cultural and socio-political attitudes today lie mainly in the Confucian ideas of hierarchical order, social harmony, and the *tianxia* concept of a unified Chinese state led by a strong, centralised, patriarchal government.[345] These traditions mean that Chinese conceptions of a well-run polity are likely to turn inevitably more towards collective strength and authoritarian government than to the ideas of individual rights and democracy which dominate European political philosophy.

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[340] Kissinger (2011), pp. 20-22 (abridged).

[341] Pye (1985), p. 57.

[342] The dates and biography of the author of *The Art of War* are unknown, although it is thought by modern scholars that the text was written during the Warring States period (476-221 BC).

[343] Sun Tzu (2006) *The Art of War*, New York: Cosimo (transl. Lionel Giles, 1910).

[344] See Zheng (2010).

[345] See Pye (1985), pp. 193-200, for a fuller explanation of the deep links between paternalism, patriotism and collectivism in Chinese political culture.

In the international sphere, *tianxia* political philosophy implies that China should ideally be situated at the heart of an international system which pays tribute, even if that tribute should consist only of formal recognition of China's status and hegemony. It is arguably this goal of global hegemony by non-military means – i.e. by increasing China's economic strength and soft power – towards which the CCP is trying to guide China's 'peaceful rise'. [346]

To sum up this section, the following are the key conclusions concerning China's history, culture and society:

- ❖ China's deep agricultural roots and long, continuous cultural tradition feed into a patriarchal, collectivist system of social organisation that emphasises hierarchical relationships and centralised political authority at the expense of the rule of fixed laws and individual rights.
- ❖ Confucian concepts of 'harmonious society' and the *tianxia* system of 'benevolent' government of 'all under heaven' colour Chinese leaders' approach to domestic and international politics – an approach which the CCP now calls 'peaceful rise' or 'peaceful development'.
- ❖ China's central location and traditional hegemony in East Asia give the Chinese people a sense of the centrality and importance of their civilisation – what Martin Jacques calls the 'Middle Kingdom Mentality'.
- ❖ The Chinese approach to warfare and strategy is influenced by the ideas of Sun Tzu – i.e. to plan carefully for long-term success and triumph, if possible, through the use of cunning and guile rather than via direct military means.

Bearing these conclusions in mind, and retaining them for the later purpose of progressing through the scenario construction process outlined in Figures 3 and 4 above, let us now move on to detailed examinations, again within a critical-hermeneutic historical framework, of China's scientific development, environment, economy, domestic politics and international relations.

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[346] See Shambaugh (2013), p. 21, for a discussion of China's theory of 'peaceful rise'/'peaceful development'.

4.22 China's scientific development

The history of Chinese science over the last five or six centuries and up to the present, for better and for worse, is closely connected to the Confucian socio-political system outlined in the previous section. Up to the Ming dynasty (1368-1644), China had produced numerous technological innovations centuries ahead of their diffusion or re-invention in Europe.[347] Significantly, these included the enormous treasure ships under the command of the eunuch admiral Zheng He (郑和, 1371-1433) which reached the Philippines, Arabia and the east coast of Africa, and which would have dwarfed Columbus' vessels.[348] For reasons which are disputed[349], however, Chinese science withered from the second half of the Ming dynasty onwards, and the technical expertise which produced the treasure ships was mostly lost.

The great work on the history and development of Chinese science is Joseph Needham's sequence of volumes, the result of a lifetime's research, entitled *Science and Civilisation in China*.[350] In these, he and his co-authors demonstrate conclusively that inventions such as paper[351], iron casting[352], gunpowder[353] and printing[354], which later turned out to be so important for European domination of the globe[355], originated in China. China was also far ahead of Europe for a long time in areas such as bridge-building, weapons, nautical technology and hydraulic engineering: many of these technologies were in fact transmitted from China to Europe over the centuries and were "of vital importance for the development of Europe."[356]

Be this as it may, there is little doubt that the achievements of Chinese science began to grind to a halt during the Ming and Qing (1644-1911) dynasties, probably, as Lucian Pye

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[347] For a detailed list of Chinese technological innovations and the time-lag in their transmission to the West, see Colin A. Ronan (1978) *The Shorter Science and Civilisation in China: An Abridgement of Joseph Needham's Original Text: Volume 1*, Cambridge: Cambridge University Press, pp. 76-77.

[348] Keay (2008), pp. 379-386.

[349] For a concise discussion of the various reasons forwarded by generations of scholars for the stagnation of Chinese science, see Pye (1985), p. 60. See also the page below.

[350] The reader is referred to Ronan (1978), an abridged version of Volumes I and II of Needham's enormous work, which outline the history of scientific thought in China. For an excellent account of Needham's life, see Simon Winchester (2008) *The Man Who Loved China: The Fantastic Story of the Eccentric Scientist Who Unlocked the Mysteries of the Middle Kingdom*, New York: HarperCollins.

[351] *Ibid.*, p. 39.

[352] Ibid., p. 75.

[353] Ibid., p. 52.

[354] Ibid., p. 49.

[355] For a full account of the role of technological development in European global domination, see Jared Diamond (1997) *Guns, Germs and Steel: The Fates of Human Societies*, New York: W.W. Norton.

[356] Ronan (1978), p. 75.

posits, because of a combination of the influence of the conservative Confucian value system and the need to devote precious resources to preservation of power and national unity.[357] Since "the prime tasks of government were the same as those of the family: to provide security, continuity, cohesion, and solidarity"[358], this has historically meant that "tremendous energies have had to be expended merely to maintain unity, with the result that little energy has remained for other objectives."[359] As discussed above, scholarship and bureaucracy were linked in Neo-Confucianism, meaning that "in China the highest forms of knowledge were directed toward the tasks of government and administration".[360] This meant that, in contrast to the revolution in scientific thought that was emerging in Europe at the same time, in China there was little reason or motivation for the intellectual classes to pursue technological innovation during the late Ming and Qing, and Chinese science as a result stagnated.

By the nineteenth century it had become clear to most observers that Western science and technology, now for the first time industrialised, had far outstripped that in China and the rest of East Asia. British ships and guns smashed Chinese fleets of junks like so many toys during the Opium War (1839-42).[361] While the Japanese, accepting the obvious, began to modernise during the Meiji restoration (1868-1912), enabling them to defeat Russia in 1905 and to colonise Korea and Manchuria, the Chinese were, according to Pye, "only able to respond to defeat emotionally, seeking strength from the pangs of humiliation".[362] This meant that modern Chinese scientific development would have to wait another hundred years, until after the CCP had seized power under Mao in 1949.

One result of the re-unification of China under Communist rule was an immediate drive to modernise, at first, during the 1950s, with the help of technical advisors from the Soviet Union.[363] This modernisation, however, stalled due to a combination of the breakdown in 1960 of relations with the Russians[364], the disastrous famine caused by the misallocation of resources from farming to steel smelting during the Great Leap

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[357] Pye (1985), pp. 60-61.
[358] Ibid., p. 63.
[359] Ibid., p. 64.
[360] Ibid., p. 61.
[361] See Spence (1990), pp. 152-8 or Keay (2008), pp. 455-467.
[362] Pye (1985), p. 67.
[363] Spence (1990), p. 584.
[364] Ibid., pp. 588-590.

Forward (1958-1962)[365], and the chaos of the Cultural Revolution. Thus, despite the fact that the Chinese carried out their first nuclear test in 1964[366], and introduced huge improvements in health care which led to increased lifespans and reduced infant mortality (and hence a rapid leap in population size)[367], the task of modernising China's technology and science largely had to wait until after Mao's death in 1976.

The transformation of China's economy after Deng Xiaoping's ascent to power in 1978 brought with it an immediate emphasis on boosting China's scientific development. Aware of the PRC's backwardness, and famously fascinated with new technologies, Deng initiated and began to implement a drive for scientific, industrial and technical modernisation. Fields such as energy, computers, space technology, physics and genetics were prioritised, and research centres established.[368] Schools and universities, which had been closed or in chaos during the Cultural Revolution, were re-established, and students began to be sent overseas to acquire advanced degrees in science.[369] A total of 1.39 million students (in all disciplines) are reported to have studied overseas between 1978 and 2008, even though the majority of these remained abroad after completing their studies, seriously impeding the advance of domestic Chinese scientific research.[370] Indeed, lack of intellectual freedom due to political constraints, combined with a continuing emphasis on rote memorisation in education derived from Confucian tradition, means that China still has difficulty establishing its scientific research on an equivalent level to developed countries.[371]

Today, although the PRC still lags far behind the USA and Europe in scientific innovation – the lack of China-based Nobel laureates in science attests to this – it is steadily catching up in many areas of practical expertise. Chinese scientists, for instance, are at work developing the nation's energy infrastructure, still heavily dependent on coal[372]: nuclear energy was introduced in 1992, and hydro-electric power facilities are being hugely expanded, most notably in the form of the world's largest dam, the Three Gorges. [373] Major advances are being made in the area of transportation:

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[365] See Keay (2008), pp. 523-5.
[366] Spence (1990), p. 598.
[367] Ibid., p. 685.
[368] Ibid., pp. 655-6.
[369] Ibid., p. 656.
[370] Shambaugh (2013), p. 241.
[371] Ibid., p. 244.
[372] Smil (2004), pp. 11-12.
[373] Ibid., p. 22.

China has a fast-developing high-speed rail network[374]; is building subway systems in major cities, as well as some of the world's longest bridges; is engaged in highway construction on a massive scale to cope with millions of new cars; and has constructed a mega-port in the form of an innovative custom-made island in the sea off Shanghai to cope with increased shipping loads.[375] The ability of Chinese agriculture to overcome natural disasters and feed its ever-growing population is, thanks to the use of industrial fertilisers and genetically modified crops, greatly enhanced.[376] Despite the persistent problems inherent in coping with hundreds of millions of potential patients, China's healthcare has improved rapidly since the CCP gained power, demonstrated by increased lifespans and lower infant mortality.[377] The nation also now has its own manned space programme[378], intends to put a crewed space station in orbit by 2020[379], land a man on the moon around 2025[380], and has demonstrated (by destroying a meteorological satellite with a ballistic missile in 2007) that it has the capacity to shoot down objects in orbit.[381]

Militarily, the PRC has embarked on a systematic programme of overhauling its army, navy and air force, upgrading its hardware while reducing the overall number of personnel and retraining the remainder, with the aim of drastically improving its fighting capability.[382] In this area, although China's military is still undeniably vastly inferior to the USA's, at the time of writing it has, to give just a few examples, somewhere between 300 and 3000 nuclear warheads[383], 2000 modern tanks (in addition to 5000 out-of-date models)[384], 1600 combat aircraft[385], 71 submarines[386], and

[374] Peter Kammerer (2013) 'In praise of China's high-speed trains', *South China Morning Post*, May 14, 2013, available at: http://www.scmp.com/comment/insight-opinion/article/1236923/praise-chinas-high-speed-trains, (accessed June 1, 2013).
[375] Mu Yang and Lionel Ho (2006) 'Shanghai's Yangshan deep water port: an international mega port in the making', *EAI Background Brief No. 290*, East Asian Institute, National University of Singapore, available at: http://www.eai.nus.edu.sg/BB290.pdf, (accessed June 1, 2013).
[376] Smil (2004), Chapter 3, pp. 72-140.
[377] Ibid., p. 174.
[378] Shambaugh (2013), pp. 295-6.
[379] Leonard David (2012) 'China eyes new rockets for space station, moon missions', *Space.com*, October 25, 2012, available at: http://www.space.com/18209-china-new-rockets-long-march-5.html, (accessed June 1, 2013).
[380] Ian Sample (2011) 'China plans manned moon mission'. *The Guardian*, December 30, 2011, available at: http://www.guardian.co.uk/science/2011/dec/30/china-manned-moon-mission-lunar, (accessed June 1, 2013).
[381] Shambaugh (2013), p. 296.
[382] Ibid., pp. 273-295.
[383] According to Benjamin Schreer (2013) 'Thinking about China's nuclear weapons, *The Strategist: The Australian Strategic Policy Institute Blog*, April 30, 2013, available at: http://www.aspistrategist.org.au/thinking-about-chinas-nuclear-weapons/, (accessed June 1, 2013), US intelligence estimates that China has around 300 nuclear weapons, but Professor Philipp Karber claims the number could be as high as 3000.
[384] Shambaugh (2013), p. 286.

one aircraft carrier.[387] However, a litany of recent American complaints[388] indicate that it is in the area of cyber warfare that China is extending its global reach the quickest and furthest: hacking, cyber espionage and attacks emanating from the People's Liberation Army (PLA) have become, according to one report, a "major global concern".[389] In May 2013, for instance, Chinese hackers were reported to have stolen blueprints for more than two dozen of the USA's most advanced weapons systems.[390] This and similar cyber-attacks suggest that the lack of scientific innovation inherent in the PRC's research science – it "lags significantly behind developed countries in approved patents (an important measure of innovation)"[391] – will likely not prevent it from rapidly acquiring military technology on the level of the USA's before too many more decades have passed. It is this probability of eventual Chinese military catch-up that fuels, as we shall see in the next chapter, the 'China threat' thesis emanating from hawks and realists in the USA such as Bill Gertz.[392]

In terms of overall scientific and technological development and industrialisation, China may well be currently passing through a similar phase to the ones experienced by its neighbours Japan and South Korea in their modernisation processes. In both cases, the early stage of industrialisation consisted of state-supported companies 'borrowing' existing technologies such as shipbuilding and steelmaking from developed countries, and then manufacturing finished products for the world market at a cheaper price.[393] Japan imported technologies in the 1950s and 1960s, while Korea's industrialisation and 'cheap replica' phase lasted from approximately the 1960s to the 1980s. [394] Thereafter both Japanese and Korean companies began to work more at the cutting edge of research and development in order to compete in world markets at a higher technological level. Such a process of development in the area of commercial technologies and other scientific research may in fact be unfolding in China today in the

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[385] Idem.

[386] Ibid., p. 291.

[387] Ibid., p. 292.

[388] Ewen MacAskill (2013) 'Obama to confront Chinese president over spate of cyber-attacks on US', *The Guardian*, May 28, 2013, available at: http://www.guardian.co.uk/technology/2013/may/28/obama-chinese-president-cyber-attacks, (accessed May 31, 2013).

[389] Shambaugh (2013), p. 297.

[390] MacAskill (2013).

[391] Shambaugh (2013), p. 243.

[392] Bill Gertz (2000) *The China Threat: How the People's Republic Targets America*, Washington, D.C.: Regenery.

[393] Tuvia Blumenthal and Chung H. Lee (1985) 'Development strategies of Japan and the Republic of Korea: a comparative study', *The Developing Economies*, XXIII-3, pp. 221-235.

[394] Ibid., p. 228.

wake of Deng Xiaoping's Southern Tour and call for more rapid modernisation in 1992. Of course, there remains the proviso that the PRC's authoritarian politics are rather different from the political systems in Japan and South Korea, meaning that the historical development process may not necessarily follow the same course: in other words, as David Shambaugh points out, China may run up against a brick wall if it cannot develop education and research environments which will permit and encourage innovation rather than the stealing of information, copyright infringement and the cloning of other countries' products.[395]

Today, the centralised, government-led drive to develop China's technologies and scientific expertise to meet the needs of an environmentally-challenged (see the following section) and rapidly developing civilisation-state continues. In 2006 the 'National Outline for Medium and Long Term Science and Technology Development Planning (2006–2020)' was published by the Ministry of Science and Technology of the PRC.[396] As Sylvia Schwaag Serger and Magnus Breidne point out, this publication is significant because "it reflects Beijing's ambitions to make China one of the world's most important knowledge bases … [and] contains an explicit target to reduce China's dependence on foreign research and development as well as to use public procurement to strengthen China's domestic industry."[397] The year 2010 saw the publication by the Chinese Academy of Science (CAS) of a series of volumes, collectively entitled *A Roadmap to 2050*, on many aspects of China's scientific progress. The series includes, among others, specialised books on agricultural, manufacturing, water, energy, marine and information technology, and represents a further indication of China's grand view of its own scientific and technological development as "as a transformative revolution in the human history of modernization."[398] Whether this ambitious vision can be realised is at present a question for debate, and will be analysed with reference to expert forecasts in the next chapter; but the simple hard fact that the Chinese government and CAS are devoting so much time, money and effort to developing a framework for long-

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[395] Shambaugh (2013), p. 244.

[396] 'National Outline for Medium and Long Term Science and Technology Development Planning (2006–2020)', Ministry of Science and Technology of the People's Republic of China, *China Science and Technology Newsletter*, no. 456, February 9, 2006, available at: http://www.most.gov.cn/eng/ newsletters/2006/200611/t20061110_37960.htm, cited in Sylvia Schwaag Serger and Magnus Breidne (2007) 'China's fifteen year plan for science and technology: an assessment', *Asia Policy*, No. 4 (July 2007), pp. 135-164, p. 137.

[397] Idem.

[398] Yongxiang Lu (ed.) (2010) *Science and Technology in China: A Roadmap to 2050* (Strategic General Report of the Chinese Academy of Sciences), Heidelberg: Springer, p. vii.

term scientific research and development suggests that the vision should be taken seriously, certainly as far as the construction of scenarios for China's future are concerned. This is especially true given China's rapid progress in just over three decades with developing its space and nuclear programmes, energy, agriculture, resources, transportation networks, manufacturing sector, and other technological advances from a relatively low base in 1978.

In summary to this section, here are the key conclusions concerning the past and present state of China's scientific development:

- ❖ China, although not a scientific pioneer since the early Ming dynasty, has been rapidly catching up with developed countries since 1978 by acquiring Western technologies and adapting them to its needs.
- ❖ China is a present in a 'borrowing and copying' phase of industrialisation and technological development, but it is possible that in due course it will begin innovating in the same way that Japan and South Korea have done.
- ❖ China has a state-sponsored research programme with a focussed research agenda to enable the country to improve its scientific approach to problematic areas such as energy, agriculture, natural resources, the environment, healthcare and transportation by around 2050.[399]
- ❖ China has made rapid progress with industrialisation, technology and scientific progress since 1978 and this trend appears set to continue.

4.23 China's environment

Vaclav Smil's extensive research, conducted since the 1970s, of the extent of damage to Chinese ecosystems makes clear that problems arising from environmental exhaustion due to excess population and overuse of natural resources are not entirely new, although they are of course becoming more and more pronounced under the strain of modernisation.[400] China has, for example, been struggling with deforestation[401],

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[399] Ibid., pp. vii – x.
[400] Vaclav Smil's three major works on China's environment are: (2004) *China's Past, China's Future: Energy, Food, Environment*, New York: RoutledgeCurzon; (1993) *China's Environmental Crisis: An Inquiry into the Limits of*

droughts and flooding[402] for millennia already. However, there is no doubt that the modernisation and industrialisation process described in the preceding and following sections, as China rushes towards a hoped-for future of economic prosperity and technological development, has taken a huge toll on the present-day Chinese environment in a variety of different ways.[403] This section will therefore attempt to describe, in a concise form, the present state of China's environmental degradation, before laying the foundation for an analysis of the potential for the Chinese to overcome the situation and arriving at a more sustainable environmental future, and the possibility of them failing to achieve this.

The basic reality of China's environment in relation to the activities of its population is formed, as Smil repeatedly points out, by the constant struggle to maintain an extremely large population in a relatively limited area of arable farmland.[404] The 'core' or 'heartland' area of China[405] (which means roughly the eastern part of the country between Beijing in the north and Hong Kong in the south) is home to approximately 90 per cent of the total population (i.e. about 1.2 billion people) but only about 50 per cent of the total landmass of the PRC. In addition, much of this heartland is mountainous and therefore not suitable for agriculture. These problems are exacerbated by the fact that about 45 per cent of China's industrial production and a large proportion of its population live in the "densely inhabited" semi-arid north of the country and thus require more water and food to support them than the land is capable of supplying.[406]

China's core and peripheral areas are shown in Figure 7. This map emphasises the long-term historical heartland of China where most agriculture occurs (in brown). The outlying areas (in yellow) were either acquired under the Qing dynasty in the seventeenth century (e.g. Tibet, Xinjiang), or remain sovereign states today (Vietnam, Nepal, North Korea, etc.).

National Development, Armonk, New York: M.E. Sharpe; and (1984) *The Bad Earth: Environmental Degradation in China*, Armonk, New York: M.E. Sharpe.

[401] For evidence of long-term deforestation in China prior to the twentieth century, see Spence (1990), p. 13 and Jacques (2009), p. 80.

[402] Smil (1993), pp. 38-40.

[403] For other book-length accounts of the many effects of Chinese environmental degradation, see also Elizabeth Economy (2004) *The River Runs Black: The Environmental Challenge to China's Future*, Ithaca, New York: Cornell University Press, and Jonathan Watts (2010) *When a Billion Chinese Jump: Voices from the Frontline of Climate Change*, London: Faber and Faber.

[404] See Smil (1993) and (2004).

[405] Keay (2008), p. 10.
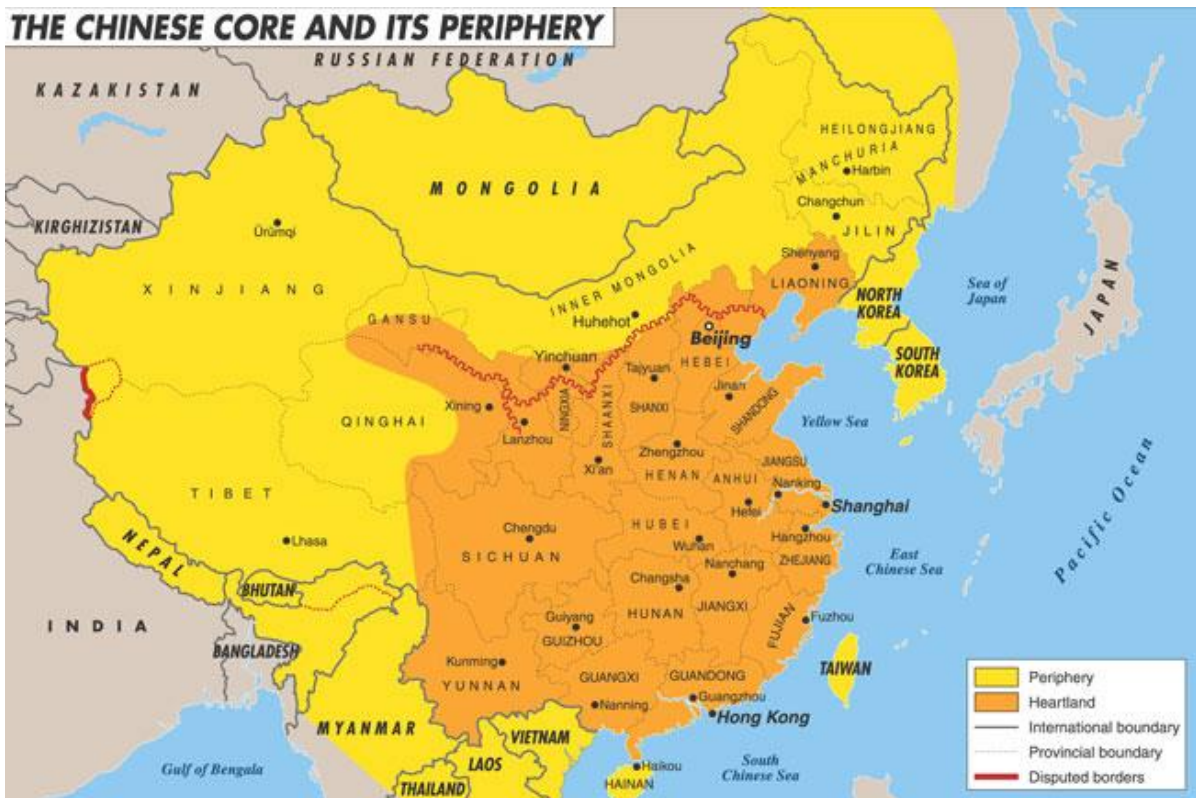
[406] Smil (2004), p. 156.

Figure 7: Map of China, showing core and peripheral areas[407]

The remaining 50 per cent of the PRC's territory consists chiefly of inhospitable deserts in the west and north, chiefly the Tibetan plateau, the Tarim basin, and the Gobi. The far north-east of the PRC, previously known as Manchuria, has arable land but experiences extremely harsh winters, with temperatures of minus 20 and minus 30 degrees Celsius commonplace. All these peripheral areas can thus support a relatively small proportion of China's population. Figure 8 is a satellite photograph of the PRC, clearly showing the fertile areas in the core and the desert areas in the north and west.

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[407] Map by Laura Canali, originally published in *Heartland: Eurasian Review of Geopolitics*, 2/2001 (public access), available at: http://temi.repubblica.it/limes-heartland/the-chinese-core-and-its-periphery/740, (accessed June 3, 2013).
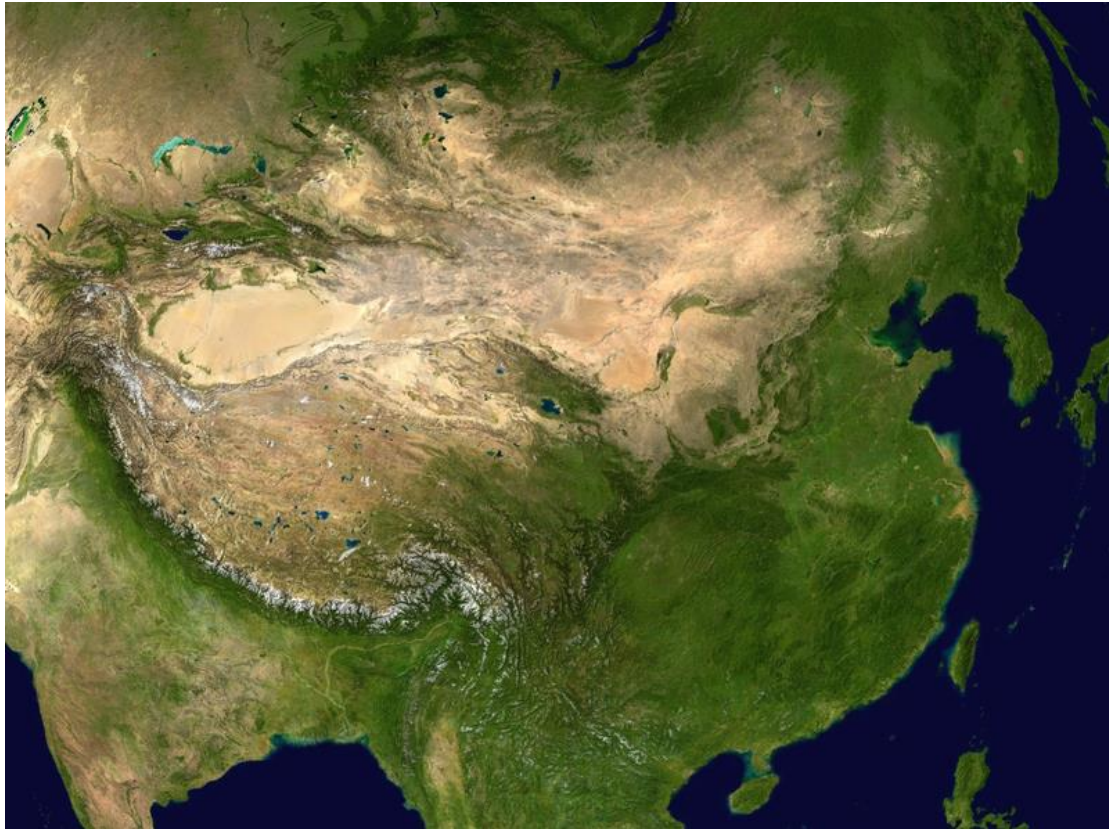
Figure 8: Satellite photograph of the People's Republic of China[408]

The relative lack of arable land – Smil points out that "China must feed slightly more than one-fifth of humankind from less than one-fifteenth of the world's farmland supply"[409] – means that Chinese agriculture has had an ages-long struggle to support its ever-increasing population, especially given that much of the core area contains mountains which cannot easily be farmed.[410] This is exacerbated by the fact that the north of China (i.e. north of the Yellow River) is not well-supplied with water for much of the year.[411] Thus the perpetual difficulties of eking a living from the land have formed the basis of the Chinese experience for millennia, and at the same time have

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[408] Image obtained from Wikimedia Commons (public domain), taken as part of NASA's Worldwind Program, March 30, 2009.

[409] Smil (1993), p. 9. In his (2004) volume Smil revised this estimate upwards thus: "China, with 21 per cent of the world's population in the year 2000, had only nine per cent of the world's farmland" (p. 149).

[410] See Fairbank and Goldman (2006), pp. 4-5 for a vivid description of China's mountainous landscape and the difficulties of supporting a large population on the available land.

[411] Fairbank and Goldman (2006), p. 5, and Smil (2004), p. 162.

resulted in drastic transformation and degradation of the natural environment in large parts of the core area.[412]

The environmental degradation caused by the needs of agriculture, as documented by Smil and others[413], consists chiefly of the following effects: near total deforestation, especially in the north and east, to allow a greater and greater area to be cultivated[414]; massive diversion of water from rivers for irrigation, resulting in, for instance, the Yellow River (*huanghe*, 黄河) failing to reach the sea in many recent years[415]; the depletion of underground water sources and lowering of water tables to make up for the exhaustion of river water[416]; the contamination of river, lake and sea water by run-offs resulting from high levels of use of man-made fertilisers, resulting in the production of choking algae blooms (eutrophication) and the subsequent destruction of freshwater and marine seafood stocks[417]; the erosion of topsoil[418], exhaustion of nutrients[419], and desertification of large areas of over-farmed arable and semi-arable land, including hillsides[420]; and "the displacement of all natural ecosystems by a mosaic of fields and settlements".[421]

Thus the relationship between man and environment in over-populated China is already a very strained one.[422] Although, as Smil points out, food production per capita is now better than before due to the use of large-scale farming techniques and artificial fertilisers[423], the intensification of agriculture to produce food for an ever-growing population has exacerbated environmental degradation.[424] Worsening this situation, particularly with regard to resource depletion and pollution, has been the rush to

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[412] See Watts (2010) for a detailed account of environmental degradation in China, region by region.

[413] Apart from Smil's body of work, the most significant contributions are Economy (2004) and Watts (2010).

[414] Smil (1993), p. 52.

[415] Smil (2004), p. 149.

[416] Jim Yardley (2007) 'Beneath booming cities, China's future is drying up', New York Times, September 28, 2007, available at: http://www.nytimes.com/2007/09/28/world/asia/28water.html?pagewanted=all, (accessed June 4, 2013).

[417] See Watts (2010), pp. 315-6, and Smil (2004), p. 119.

[418] Tun Lin and Timothy Swanson (2010) 'Economic growth and environmental regulation in the People's Republic of China', in Lin and Swanson (eds.) (2010) *Economic Growth and Environmental Regulation: The People's Republic of China's Path to a Brighter Future*, London: Routledge, p. 1.

[419] Smil (2004), p. 185.

[420] Smil (1993), p. 52.

[421] *Ibid.*, p. 53.

[422] See Watts (2010) for detailed descriptions of localised environmental problems across China.

[423] Smil (2004), pp. 92-105.

[424] Epoch Times, October 11, 2011, 'Fertilizer overuse damages agriculture and environment in China', available at: http://www.theepochtimes.com/n2/china-news/fertilizer-overuse-damages-agriculture-and-environment-in-china-62671.html, (accessed June 4, 2013).

modernise by focusing on economic growth and manufacturing.[425] The massive increase of industrial manufacturing across large swathes of China's heartland, especially in the water-deprived north, has produced additional depletion of water supplies (because large volumes of water are needed for many industrial processes)[426] and contamination of water supplies with toxic waste[427], as well as pollution of the air with sulphur dioxide, carbon dioxide and other gases produced as side-effects of manufacturing, domestic use[428], and vehicle exhausts.[429] The air quality in many Chinese cities is now "among the worst in the world"[430], meaning significant impacts on people's health[431], especially in winter when large volumes of coal are burnt in the north to heat homes.[432] Adding to the smog is an exponential increase in car sales[433]: for example, in 2010 two thousand new cars daily joined the gridlocked traffic on Beijing's packed, newly-constructed six-lane highways.[434]

Overall, then, the picture of China's contemporary environment is not a pretty one. Severe air and water pollution mingle with deforestation, desertification, soil erosion and depletion of rivers and water tables to produce an image of imminent catastrophe.[435] Indeed, some commentators, such as Wang Jinnan, the vice president of the Chinese Academy of Environmental Planning (CAEP), believe that China's environmental crisis "has yet to reach a peak", and that disaster on a major scale is imminent.[436] The outlook, at least if one is to believe the prognostications of the

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[425] See Guang Xia, Xiaofei Pei and Xiaoming Yang (2010) 'Economic growth and environmental protection in the People's Republic of China', in Lin and Swanson (eds.), for a detailed analysis of the history of the impact of economic growth on the environment and the need for increased regulation.

[426] Smil (2004), pp. 156-7.

[427] Ibid., p. 183-4.

[428] Economy (2004), pp. 72-3.

[429] Lin and Swanson (2010), p. 11.

[430] Economy (2004), p. 257.

[431] See The World Bank (2007) *Cost of Pollution in China: Economic Estimates of Physical Damages*, Washington, D.C., available at: http://siteresources.worldbank.org/INTEAPREGTOPENVIRONMENT/Resources/ China_Cost_of_Pollution.pdf, (accessed June 4, 2013), and Economy (2004), p. 72.

[432] Smil (2004), p. 182-3.

[433] Economy (2004), p. 74, reports an increase in officially registered vehicles from 1.3 million in 1978 to nearly 26 million in 2001.

[434] Barbara Demick (2011) 'In Beijing, car ownership rules drive auto sales', *Los Angeles Times*, January 24, 2011, available at: http://articles.latimes.com/2011/jan/24/world/la-fg-china-cars-20110124, (accessed June 4, 2013), states that there were 700,000 new car sales in 2010 in Beijing.

[435] See Lin and Swanson (2010), p. 1 for a concise, bullet-pointed summary of the major environmental problems.

[436] Tom Phillips (2013) 'China facing 'extremely grave' environmental crisis', January 6, 2013, *The Telegraph*, available at: http://www.telegraph.co.uk/news/worldnews/asia/china/9783784/China-facing-extremely-grave-environmental-crisis.html, (accessed June 4, 2013).

western media, appears bleak, not least as far as the health of the Chinese people is concerned.[437]

However, although clearly dire, some experts on the long-term development of China's environment insist that the situation may not necessarily be quite as desperate as it appears. Smil claims, for instance, that China's use of water and coal is inefficient, and that greater efficiency of use resulting from technological improvements already known to western science, allied with new, environmentally-friendly technologies designed to reduce greenhouse gas emissions, will therefore inevitably bring with them an easing of the pressure on the environment.[438] In fact, he suggests that rapid improvements in some areas of energy efficiency have already occurred at an unexpectedly faster rate than they did in already-developed countries at a similar stage of their industrial development.[439]

Elizabeth Economy concurs that there is still hope for change and environmental regeneration in the long-term.[440] This, she demonstrates, is because the Chinese government (whose headquarters at Zhongnanhai is located right in the middle of Beijing's steadily worsening smog) is well aware of the extent of the problems[441], and is therefore actively engaged in finding long-term solutions to them via state-sponsored scientific research and initiatives [442], not least because of the potential for environmental meltdown on a nationwide scale to provoke civil unrest.[443] A major aim of the Chinese Academy of Science's *Roadmap to 2050* initiative discussed in the previous section is to develop scientific answers to the need to find a balance between economic growth and environmental protection.[444] To this end, the PRC is already engaged in pursuing and funding large-scale, long-term plans for greater energy

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[437] For example, according to Economy (2004), pp. 2-3, cancer rates have mushroomed in some regions affected by the contamination of water sources by toxic waste from factories.

[438] Smil (2004), pp. 212-5.

[439] Smil (2004), pp. 60-68, is an account of unexpectedly improved efficiencies in China's energy intensity (EI) of the national economy during the 1980s and 1990s.

[440] Economy (2004), pp. 258-9.

[441] Ibid., p. 87.

[442] Elizabeth C. Economy (2004) for instance reports that "Official investment in environmental protection by the central government – practically non-existent in the 1970s – increased to 1.3 percent of the country's gross domestic product (GDP) at the turn of the century" (p. 259).

[443] See Patrick Brown (2013) 'China's gathering environmental storm: earthquakes, polluted air, cancer clusters may threaten the ruling regime's 'mandate of heaven'', April 23, 2013, *CBC News*, available at: http://www.cbc.ca/news/world/story/2013/04/22/f-vp-brown-china-environment.html, (accessed June 4, 2013).

[444] Economy (2004), p. 274.

efficiency using cleaner technologies.[445] This goal is to be achieved by decreasing reliance on coal and oil by replacing them, as far as possible, with natural gas, nuclear power, hydroelectric power, solar energy, wind and wave energy, and other less polluting sources through phased developments up to the middle of the century and beyond.[446] This is the rationale, for instance, behind the controversial construction of the world's largest dam, the Three Gorges; although whether this mega-dam will be a success or a further environmental disaster remains to be seen.[447]

In addition, the PRC is actively engaged in following a number of other avenues to environmental amelioration. These include: diversifying away from fossil fuels by building 27 new nuclear power plants to add to the 13 already in operation[448]; attempting, via newly-built pipelines, to obtain natural gas and oil supplies from Xinjiang, central Asia and Russia[449]; managing, leasing or buying farmland in Africa[450], Asia and South America[451] to produce foodstuffs for the Chinese market and ease the pressure on Chinese land; diverting water from the south to the north via the ambitious South-North Water Transfer Project (SNWTP, *nanshui beidiao gongcheng*, 南水北调工程)[452]; investing in high-speed rail links as an alternative to gas-guzzling planes and cars[453]; seeking to obtain new, greener technologies for more efficient use of fossil fuels,

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[445] Watts (2010), p. 387.

[446] See Lu (2010), pp. 24-25 and 42-46, for timelines and proposals for achieving technological breakthroughs in cleaner and renewable energy sources by establishing "an innovation-based energy industry system with Chinese characteristics" (p. 45).

[447] See Economy (2004), pp. 205-9, for an account of the problems and controversies surrounding the construction of the Three Gorges Dam.

[448] Shambaugh (2013), p. 151.

[449] Barry Naughton (2007) *The Chinese Economy: Transitions and Growth*, Cambridge, Massachusetts: MIT Press, p. 342.

[450] See Deborah Brautigam (2009) *The Dragon's Gift: The Real Story of China in Africa*, Oxford: Oxford University Press, Chapter 10, for a detailed account of Chinese agricultural activity in Africa.

[451] See Carin Smaller, Qiu Wei and Liu Yalan (2012) *Farmland and Water: China invests abroad*, Winnipeg, Canada: The International Institute for Sustainable Development (available at www.iisd.org) for detailed information about China's overseas agriculture investment in Africa, Asia and South America.

[452] See Economy (2004), pp. 125-7, Watts (2010), pp. 69-70, and Smil (2004), pp. 164-8, for analyses of the conception and progress of the South-North Water Transfer Project.

[453] Steven Jiang, 'China's high-speed trains attract frustrated fliers', *CNN.com*, April 12, 2013, available at: http://edition.cnn.com/2013/04/11/travel/china-high-speed-rail, (accessed June 5, 2013).

especially coal [454]; experimenting with environmentally-friendly eco-towns [455]; and planting trees on a large scale to counteract deforestation and desertification. [456]

None of these attempted solutions is without problems: tree planting has slowed but failed to halt desertification in the north [457], for example, and the SNWTP is still unfinished after two decades of work, its outcome unknown and cost escalating. [458] Nevertheless, the scale of effort, backed by the huge financial and organisational resources of the Chinese state, and given urgency by the growing complaints of the suffering Chinese populace, appears capable of bringing long-term results in terms of major improvements to the natural environment. These effects, history suggests, should, if China modernises its economy, industry and technology effectively, turn out to be similar to those found in other recently developed countries which have cleaned up their industrially-polluted environments, such as Japan and South Korea. [459] This effort should be aided by the fact that China's population growth is projected to slow to a halt in the next several decades. [460] Nevertheless, there is no denying that in the short- to medium-term the strain on China's environment caused by economic growth appears likely to continue. [461]

Thus, the key conclusions to this section are as follows:

- ❖ The present degradation to China's environment caused by rapid industrialisation and economic growth is very serious, overlaying as it does many centuries of damage.
- ❖ China's continuing growth does not appear likely to bring much improvement to the natural environment going forward into the medium-term (e.g. one to two

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[454] Lu (2010), p. 45, and Watts (2010), pp. 223-4.

[455] See Watts (2010), pp. 278-80, and Gaia Vince (2012) 'China's eco-cities: sustainable urban living in Tianjin', *BBC.com*, May 3, 2012, available at: http://www.bbc.com/future/story/20120503-sustainable-cities-on-the-rise/2, (accessed June 5, 2013).

[456] Smil (2004), pp. 145, 175, and Watts (2010), pp. 335-6.

[457] Daniel Chinoy (2010) 'Building last line of defense against desert', China Daily, May 25, 2010, available at: http://www.chinadaily.com.cn/china/2010-05/25/content_9889308.htm, (accessed June 5, 2013).

[458] See Watts (2010), pp. 69-70, and Scott Moore (2013) 'China's massive water problem', *New York Times*, March 28, 2013, available at: http://www.nytimes.com/2013/03/29/opinion/global/chinas-massive-water-problem.html?_r=0, (accessed June 5, 2013).

[459] Bill Emmott (2008) 'What China can learn from Japan on cleaning up the environment', *The McKinsey Quarterly* 4/2008, pp. 125-129, available at: http://www.mckinseychina.com/wp-content/uploads/2008/09/whch08.pdf, (accessed June 5, 2013). Emmott reports that the smog in Japanese cities circa 1970 was as bad as it is in Chinese cities today, but that a combination of popular protest and a switch to cleaner, more energy-efficient technologies cleaned up the air (p. 128).

[460] Smil (2004), p. 147, and Watts (2010), p. 385.

[461] See Watts (2010), pp. 383-392.

decades ahead), and is in fact likely to result in an even worse environment during this period.

❖ The potential for long-term improvement in the environment, if a range of technological improvements are made, is real but not certain, being largely based on a number of projected developments (e.g. mega-dams, water transfer projects, reforestation, green fuels, etc.) whose effectiveness is at present unknown.

4.24   China's economy

The astonishing rapidity of the PRC's economic growth – which averages somewhere between 7 and 10 per cent per year[462] since Deng Xiaoping took power in 1978 – is well-known to anybody who has taken an interest in the world economy in the last two decades. Much ink has been spilled in order to describe China's steady, seemingly inexorable ascent towards the position of ever-increasing economic ascendancy it enjoys today. The PRC is now second only to the USA in terms of total Gross Domestic Product (GDP), i.e. overall size of the economy[463] (even though its per-capita GDP remains far less impressive[464]). China's phenomenal growth was also, as Vaclav Smil points out, extremely difficult (or even impossible) to predict before Deng's rise to pre-eminence and initiation of economic reform.[465]

Careful consideration of these two facts – i.e. China's extraordinary economic growth post-1978 and the unpredictability of this phenomenon in the mid-1970s – suggests that the aim of this section should be not only to analyse the explanatory factors underlying China's extraordinary economic rise in the last 35 years, but also, especially given the circumstance of the on-going global financial crisis which began in 2007-8, to

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[462] The variation is due to the unreliability of Chinese statistical sources and different methods used for assessing economic variables. See Smil (2004), p. 7, for a brief account of the controversy concerning China's GDP growth, and the demand of some economists and historians that the official 10 per cent figure be downgraded towards 7 per cent.

[463] BBC News, 'China overtakes Japan as world's second biggest economy', February 14, 2011, available at: http://www.bbc.co.uk/news/business-12427321, (accessed June 6, 2013).

[464] The Central Intelligence Agency (CIA) World Factbook ranks China 122nd in the world in terms of GDP per capita (see https://www.cia.gov/library/publications/the-world-factbook/rankorder/2004rank.html, (accessed June 6, 2013).

[465] Smil (2004), p. 212. Smil was one of a panel of experts who tried to predict China's future via the Delphi method in 1975, but who "did not foresee … either the speed or the sweep of post-1978 reforms. We have taken these developments increasingly for granted, but they still appear astonishing when seen from the 1975 perspective."

examine the primary characteristics of the Chinese economy today. If the basis of China's economic growth is not, as some observers[466] suggest, as solid as it seems, this would imply that the possibility of a drastic change in direction has to be entertained in the construction of scenarios for China's future.

Although China's recent economic rise took the West by surprise[467], looking at the phenomenon through a long-term historical lens makes it appear in a different light. Estimates of historical GDP[468], backed up by the observations of awed Europeans (chiefly Jesuits) who visited China in the seventeenth and eighteenth centuries[469], suggest that China's emerging economic dominance is more of a return to a long-term position of global pre-eminence after a period of stagnation than an innovation.[470] The economic output of Europe, the USA and Japan overtook China's (and, in south Asia, India's) only in the nineteenth century, chiefly as a result of the industrial revolution and the superior technology it brought with it (which allowed, for example, the British to force their will upon China in the Opium War).[471] This would imply that China's post-1978 growth may be seen simply as a resumption of its traditional global position after the 'long century of shame and humiliation' rather than a brand-new phenomenon.

Regardless of the nature of such long-term historical developments, China's economic growth after 1978 was achieved thanks to the change of atmosphere brought by the accession of Deng Xiaoping.[472] Realising that Mao's experiments with collective agriculture and industry had failed, Deng decided to prioritise economic growth by whatever means necessary in order to enable China to compete with developed countries. Following his own recommendations that 'It doesn't matter if a cat is black

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[466] Among works which cast doubt on China's capacity to keep its economy growing at present rates and to avoid economic crisis or collapse are: Shirk (2007); Carl E. Walter and Fraser J. T. Howie (2011) *Red Capitalism: The Fragile Financial Foundation of China's Extraordinary Rise*, Singapore: John Wiley & Sons; and Joe Studwell (2002) *The China Dream: The Elusive Quest for the Greatest Untapped Market on Earth*, London: Profile Books.

[467] As late as the mid-1990s, for example, observers in the US were still chiefly concerned with the Japanese challenge to their global hegemony, not the emerging Chinese one. See for instance: George Friedman and Meredith LeBard (1991) *The Coming War with Japan*, St Martin's Press.

[468] See Jacques (2009), p. 29, and Andre Gunder Frank (1998) *ReOrient: Global Economy in the Asian Age*, Berkeley and LA: University of California Press, p. 173.

[469] Spence (1990), pp. 132-3.

[470] See Frank (1998) for an extended examination of the idea that Asia is at present re-establishing its long-term global economic dominance.

[471] See Jacques (2009), pp. 23-30, for a detailed discussion of China's fall from global economic pre-eminence as it was overtaken by the West.

[472] See Studwell (2002), pp. 26-62 for a balanced appraisal of Deng's (sometimes accidental or lucky) contribution to China's economic growth from 1978 onwards.

or white as long as it catches mice'[473] and 'To get rich is glorious'[474], Deng focussed on dismantling the Maoist worker communes [475] and growing the economy through promoting the capitalist idea that it was acceptable to hunt for a profit wherever it lay.[476] This entailed 'crossing the river by feeling the stones', i.e. trying out different approaches to achieving increased productivity, profit and growth, even if – as in fact happened – some of these economic experiments ultimately failed.[477]

Deng's policies led (often with some degree of luck[478]) to the following transformations. Agricultural collectives (communes) came to an end during the 1980s, and were quite rapidly replaced with a return to individual farmers working their own plots of land.[479] Special economic zones (SEZs) were set up along the eastern seaboard (the most notable of which was Shenzhen, next to Hong Kong) in order to promote the growth of entrepreneurial industrial enterprise and develop the Chinese economy via an export-led model similar to that previously used by Japan, Taiwan and South Korea in developing their economies.[480] Workers were allowed to migrate from their villages to the SEZs to work in the factories set up by the new companies.[481] By the mid-1990s, despite the 'hiccup' of the Tiananmen incident in June 1989, the Chinese economy was beginning to boom thanks mainly to the growth engendered in the SEZs.[482] This boom has continued largely unchecked until the present, even in spite of the global financial crisis: the PRC still experienced a GDP growth rate of almost 8 per cent in 2012[483], thereby steadily continuing to gain ground on the stagnating economies of the developed countries in Europe, North America and East Asia.

In terms of growth in GDP and the size of the economy, then, the PRC's story has been one of success. However, as commentators such as Susan Shirk have pointed out, this

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[473] Keay (2008), p. 526. This exhortation to prioritise pragmatism ahead of theory was first uttered in 1961.

[474] See Studwell (2002), p. 65. This is a quotation from Deng's 'Southern Tour' of 1992.

[475] See Will Hutton (2007) *The Writing on the Wall: China and the West in the 21st Century*, London: Little, Brown, pp. 102-3.

[476] Ibid., p. 110.

[477] Ibid., p. 95.

[478] Ibid., p. 96.

[479] Studwell (2002), pp. 32-39, describes how the communes were disbanded and quickly replaced by the 'household farming' system.

[480] Shambaugh (2013), pp. 157-8.

[481] For a detailed exploration of the lives of migrant factory workers, see Leslie T. Chang (2008) *Factory Girls: From Village to City in a Changing China*, New York: Spiegel & Grau.

[482] Studwell (2002), pp. 64-8.

[483] *China Daily*, January 18, 2013, 'China's GDP growth eases to 7.8% in 2012, available at: www., (accessed June 11, 2013).

GDP growth masks a range of weaknesses which constantly threaten to derail the Chinese economic juggernaut.[484] One of the most important of these is the economic imbalance between the newly rich and the still very poor, an effect of the rapid development of the booming cities in the east (Shanghai, Guangzhou, Shenzhen, and so on) and the lack of investment in the rural Chinese interior.[485] It is this imbalance that largely explains China's lowly position on global rankings of per-capita GDP (122nd, according to the CIA World Factbook),[486] justifying Beijing's constant re-assertion that the PRC is still a developing country.[487]

Another possible weakness is the nation's financial sector, especially the banks, the majority of which are largely or entirely state-owned, and through which most of China's capital and debt flows.[488] Non-performing and under-performing loans, used to stimulate growth throughout the Chinese economy over the last three decades, have created a burden of bad debts which some observers believe threatens to cause a banking collapse.[489] This looming threat has been seen off at least three times by complex debt restructuring programs within the banking sector which have left specially-created banks holding most of the bad debts.[490] On the other hand, the fact that the banks are state-controlled may mitigate their internal weaknesses if the state can afford to continue subsidising them via partially-concealed debt restructuring, or via mechanisms similar to those used during the 2007-8 banking crisis in the US and Europe. In the end, as far as all questions of debt and ownership in China are concerned, as Will Hutton astutely points out, "The party-state is at the centre of a spider's web of control" in the economy, which "means that attempting to assess how much of China is public and how much private is a fool's errand".[491] What Hutton dubs

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[484] See Shirk (2007), pp. 19-34.

[485] Ibid., pp. 30.31.

[486] Based on an estimate of the PRC's 2012 performance. See 'Country comparison – GDP per capita (PPP)', The CIA World Factbook, available at: https://www.cia.gov/library/publications/the-world-factbook/rankorder/2004rank.html, (accessed June 6, 2013).

[487] Shambaugh (2013), p. 38.

[488] Walter and Howie (2011), pp. 25-7.

[489] Concerns about the fragility of China's banking system have been expressed by Shirk (2007), p. 28, Studwell (2002), pp. 199-215, and Walter and Howie (2011).

[490] See Walter and Howie (2011), Chapters 2 and 3.

[491] Hutton (2007), p. 147.

'Leninist corporatism'[492] can be seen as either a strength or a weakness, but undoubtedly affects all considerations of China's supposedly 'free market' economy.[493]

Connected to the problem of bad debts in the banking sector and questions of private ownership is a two-decade-long boom in property prices as increasing numbers of people seek to buy better homes in cities and middle class investors jump on the bandwagon.[494] In conjunction with this there has been a corresponding construction boom. The Chinese government has been taking measures to slowly deflate what many observers see as a real estate bubble, the effect of which has been to create inflationary pressures and excessive debt in the overall economy, not to mention the dangers of sudden deflation of the bubble itself.[495] While these measures appear to have had some effect, the demand for housing among the new middle classes means that the tendency for property prices to spiral upwards continues, putting the cost of a house far beyond the purchasing power of a person on an average salary and fuelling a spate of excessive construction of luxury housing on a massive scale.[496] The resulting housing bubble has fuelled property speculation, constructor debt and corruption, all of which may endanger the health of the Chinese economy even if the bubble does not burst in the near future.

Corruption is another danger, both to the economy and (as we shall see in the next section) to the political system.[497] Chinese business culture emphasises personal connections (*guanxi*, 关系) over transparency and institutional ties, which means that many negotiations, transactions and payments occur in secret.[498] This in turn means that there is a blurring of boundaries between what is considered legal and illegal,

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[492] Idem.

[493] See James Kynge (2006) *China Shakes the World: The Rise of a Hungry Nation*, London: Weidenfeld and Nicolson, pp. 186-90, for a description of the mismatch between China's supposed free market capitalism and the reality of tight CCP control over market mechanisms.

[494] Studwell (2002), pp. 66-7, traces the beginnings of the housing boom in China.

[495] See 'China Vanke chairman says country faces risk of home bubble', June 6, 2013, *Bloomberg Businessweek*, available at: http://www.businessweek.com/news/2013-06-05/china-vanke-chairman-says-country-faces-risk-of-property-bubble, (accessed June 11, 2013), and Matt Reeder (2013) 'China's property bubble will burst in latter half of 2013, says research firm', *Financial Post*, March 13, 2013, available at: http://business.financialpost.com/2013/03/13/chinas-property-bubble-will-burst-in-latter-half-of-2013-says-research-firm/, (accessed June 11, 2013).

[496] For an excellent analysis of these problems, watch 'China's real estate bubble', *60 Minutes*, CBS News, March 3, 2013, available at: http://www.cbsnews.com/video/watch/?id=50142079n, (accessed June 11, 2013).

[497] Shirk (2007), pp. 31-2

[498] Shambaugh (2013), p. 154-5, Jacques (2009), p. 225.

undermining both the reputation and financial solidity of Chinese business.[499] The world of grey areas and shady transactions in the conducting of business (which the Chinese call *heishehui*, 黑社会, or 'black society') extends further into the CCP itself, since all large-scale business can be conducted only with the endorsement of the ruling party.[500] This creates a dangerous situation politically whereby tens of thousands of CCP officials are arrested on corruption charges every year.[501] In economic terms the culture of *guanxi* and corruption is also dangerous because it can potentially undermine investors' confidence in the Chinese economy and deter foreign direct investment (FDI).

A number of other factors threaten to undermine or endanger Chinese economic growth. The cost to the economy of environmental damage and pollution has been estimated by Smil as "at least ten per cent of the country's annual GDP"[502], and there is therefore a question how many more such 'externalities' China can absorb before they become overwhelming.[503] Interdependence with the world economy can also be perceived as a threat, since, for example, international financial crises can endanger China's export-led growth[504] – even though China, despite some prognostications to the contrary[505], so far seems to have ridden through the turbulence created by the 2007-8 global financial crisis without being too severely affected. In a similar vein, China's complex and precarious financial relationship with the United States, in which the USA's balance of payments deficit is offset by the PRC's purchasing of US government bonds (in effect, China lends the USA money to enable it to keep buying Chinese goods), is likely, as things stand, to lead to an economic downturn for China if the US national debt becomes too large and sinks the American economy: this would mean both reduced demand for Chinese goods and reduced capacity for the US to pay back what it owes China.[506]

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[499] Shambaugh (2013), pp. 187-8.
[500] Idem.
[501] Shambaugh (2008), pp. 131-4.
[502] Smil (2004), p. 125.
[503] Shirk (2007), p. 34.
[504] Ibid., p. 24.
[505] Gordon G. Chang, the author of *The Coming Collapse of China* (2002, London: Arrow), was for example very active on the Fox News US TV channel in 2011 restating his thesis that China's economy was in danger of imminent collapse.
[506] Shirk (2007), pp. 25-8.

However, thus far the Chinese economy has continued to grow in spite of all these apparently serious problems, suggesting that what might appear to be severe structural weaknesses may ultimately turn out to have a more limited impact than expected. In fact, as Susan Shirk points out, the most serious issue the Chinese economy is likely to face is one that has not yet even materialised, one which she calls 'racing the demographic clock'.[507] This epithet summarises the problem of an increasingly aging population, supported (thanks to falling birth rates, partly due to the so-called 'one-child policy'[508], and partly due to urban migration) by a decreasing number of people of working age, as Shirk explains in detail thus:

> China's growth will slow after 2025 as its population ages. Right now, China is blessed with a huge working-age population — 70 percent of total population in 2000 — that can easily support dependent children and elderly parents. As the number of people over sixty years old multiplies from one hundred twenty-eight million in 2000 to three hundred fifty million in 2030, the demographic shift will put a heavy burden on China's pension and health-care systems unless they are shored up between now and then. In 2065, 54 percent of the population will be over sixty and only 22 percent will be working (unless the government starts providing incentives for people to have larger families or opens up to immigration). Other countries like Japan and Korea have grappled with the strain of an aging population. It will be harder in China, however, because as Barry Naughton observes, "China will grow old before it has had the opportunity to grow rich."[509]

China's other economic problems thus pale into insignificance next to the inevitability of this ticking demographic time-bomb going off within the next fifteen years or so. This is inevitable because of the high levels of fertility encouraged by Mao[510] and the low levels of fertility resulting from the family planning policy introduced in 1979.[511] Figure 9 demonstrates clearly how the population imbalance caused by the rapid shift

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[507] Shirk (2007), p. 20.
[508] Watts (2010), p. 428 n46, explains that "The 'one-child policy' does not mean every couple is restricted to a single child. The single-child rule is enforced in most cities, with some exceptions, but in the countryside most families can have a second child if the first is a girl. Ethnic minorities, particularly in sparsely populated regions such as Xinjiang, are often allowed three children."
[509] Shirk (2007), p. 20. Shirk here quotes Naughton (2006), p. 176.
[510] Watts (2010), p. 203.
[511] Ibid., p. 204.

from a fertility rate of between 5.5 and 6 children per woman between 1950 and 1970[512], to 2.6 in 1980 and 1.6 in 2011[513] has already impacted China's demographics, and will continue to do so.
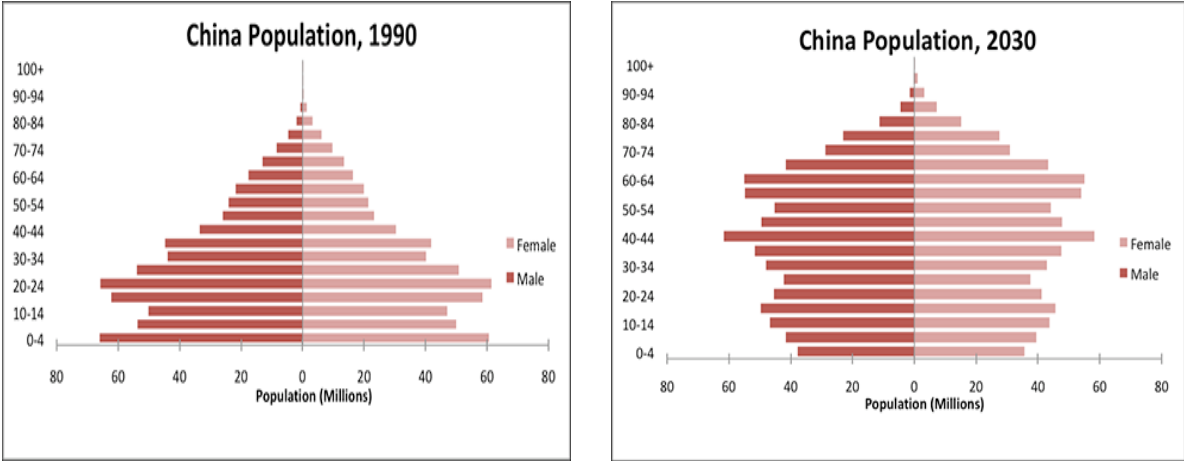

Figure 9: China's population distribution in 1990 and (projected) in 2030[514]

Figure 9 clearly demonstrates that the demographic time-bomb is one major reason why the Chinese government is so eager to develop the economy at seemingly breakneck speed by maintaining high GDP growth: essentially, it is rushing to take the development process as far as possible as quickly as possible in a demographic race against time, even at the expense of all else – including the environment and many citizens' health. If the time-bomb explodes before China has got far enough along its developmental path, the consequences for both the Chinese economy and, by implication, the Chinese people's faith in their government could be very serious indeed. This means that if the problem of the demographic time-bomb does indeed prove to be the most serious in terms of its effects on China's economic growth, then the resulting

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[512] Data for 1950-1970 obtained from United Nations, Department of Economic and Social Affairs, Population Division (2011): *World Population Prospects, the 2010 Revision*, New York, and presented as a graph at: www.china-profile.com/data/fig_WPP2010_TFR_1.htm, (accessed June 11, 2013).

[513] Data for 1980 and 2011 obtained from The World Bank's website at: data.worldbank.org/indicator/SP.DYN.TFRT.IN, (accessed June 11, 2013).

[514] Source: U.S. Census Bureau, International Data Base, available at: http://www.census.gov/ipc/www/idb/country.php, (accessed in order to generate these graphs April 13, 2011). 1990 is the first year for which the U.S. Census Bureau has data, but clearly demonstrates the demographic shift already occurring at that time.

economic slowdown after about 2025 could be the most significant factor from this section to be taken into account in our scenarios.

To sum up this section:

- ❖ China's export-led, Leninist corporatist growth since the opening of its economy in 1978 has transformed the nation to a remarkable degree, and shows little sign of slowing even in the wake of the present global financial crisis affecting developed countries.
- ❖ Despite this growth, China's economy is beset by a number of serious problems, including widespread corruption, the fragile banking sector, the interference of the CCP in the supposedly 'free market' economy, the imbalance between rich and poor, over-dependence on export-led growth, the costs of environmental damage, interdependence with the global economy and especially the US, and inflation caused by the housing bubble, a rising currency and other factors.
- ❖ The most serious problem facing China's economy is almost certainly the demographic time-bomb, set to go off around 2025-2030 when the elderly population will reach around 350 million[515], probably causing China's economic growth to slow down and stagnate like Japan's in the 1990s.

4.25 China's domestic politics

If China's economic growth is beset by a number of serious problems, its domestic politics are also troubled by an equally extensive (and connected) range of issues. This, in fact, is not surprising when one considers the contemporary reality of China as a Leninist corporatist political economy. Politics and economics, as in all other countries in today's globalised, interdependent world, are in China closely linked. However, in the case of China's domestic politics, virtually all the important issues revolve around one central one: the vexed (certainly as far as advocates of democracy are concerned) question of the nature and future of the PRC's political system.

At the heart of the problems facing China's political economy is the in-built contradiction between the putative ideology of its ruling Communist Party and the

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[515] Shirk (2007), p. 20.

PRC's post-1978 economic growth based on export-led economics derived from the western capitalist model. The present-day CCP is laden down with a good deal of historical baggage as it attempts to modernise China: it is, at one and the same time, the conduit of a successful revolutionary past (i.e. the defeat of the Kuomintang and unification of the country in 1949), a failed Maoist period consisting primarily of famine (the Great Leap Forward, 1958-1962) and chaos (the Cultural Revolution, 1966-1976), a radical economic transformation along western capitalist lines (post-1978), and a fateful decision to suppress political dissent rather than open the country up to democracy (during the Tiananmen incident of June 1989).[516] Deng's 1992 dictum that 'To get rich is glorious'[517] (disconcertingly reminiscent of the claim by Michael Douglas' character Gordon Gekko in the 1987 film *Wall Street* that 'Greed is good') conflicts with the ideology of a Party that is supposed to be based on collectivism rather than the profit motive. The tension created by this ideological oxymoron, combined with the unmentionable (in the PRC) decision to use the army to suppress a democratic movement led by unarmed students, unfortunately stands like the skeleton of a half-remembered ancestor in the background of all discussions of China's political present and future.

The trauma of China's relatively recent political past has thus created an ominous, ineradicable question mark which looms over its future. In a country that has always struggled because of its vast size and disparate peoples to maintain itself as a unified entity, the problem of whether the CCP can maintain control of China's future is the key one as far as the task of constructing scenarios is concerned. It is therefore necessary in this section to analyse in considerable detail the aspects of China's domestic politics that affect its recent past and present and will likely influence the nature of the nation's political development up to the middle of the current century.

If one steps back to take a long view of China's history before approaching the detail of its present situation, it becomes evident that the volatility of the last sixty years is, in fact, nothing unusual. This in itself, as Smil points out[518], is a significant observation in considering China's political future, because if socio-political volatility can be considered more-or-less routine in the unwieldy civilisation-state that is China, then socio-political volatility will also have to be allowed for as a strong possibility in

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[516] For more on all of these historical developments, see Spence (1990) or Fairbank and Goldman (2006).
[517] Studwell (2002), p. 65.
[518] Smil (2004), p. 208.

scenarios of its future. Understanding the nature of change in China's domestic politics through a historical lens is therefore, as stated in the introduction to this chapter, of vital importance.

In Chinese socio-political culture, regime change has its own political theory, stemming chiefly from the Confucian philosophy of Mencius (*Mengzi*, 孟子, 372-289 BCE) concerning dynastic cycles, just rule, and the right of revolution.[519] The ouster and replacement of dynastic rulers (according to Mencius a justifiable action under certain circumstances) who have lost the 'Mandate of Heaven' (*tianming*, 天命) – which means in practice that they are governing in a manner that is harmful to the people – has long formed the background to the historical Chinese political experience.[520] The concept of the Mandate of Heaven is worth exploring in more depth, because, as a number of analysts point out, it informs Chinese attitudes towards their rulers even today.[521]

Throughout the imperial dynastic era of China (221 BCE – 1911 CE) the Emperor was viewed as being, according to Confucian and Mencian doctrine, paternally responsible for the welfare of the nation, and only liable to be overthrown if he lost the 'Mandate of Heaven'. In practice this meant that if the empire fell into disorder, expressed through the dissatisfaction of a large proportion of the people, and a successor emerged who won Heaven's favour, i.e. the support of the people, then the Emperor could be dislodged by force and even killed.[522] Indeed, exactly this happened numerous times during Chinese history: often dynasties changed as alternative rulers challenged the existing order; many other popular revolutions (notably, the extremely bloody Taiping rebellion in the 19th century CE[523]) failed.

According to Mencius, a ruler who is not considerate of the needs of his people is certain to lose control of his state by being overthrown, as is clearly stated in the following extract:

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[519] For an in-depth analysis of these areas of Mencius' political philosophy, see Justin Tiwald (2008) 'A Right of Rebellion in the Mengzi?' in *Dao: A Journal of Comparative Philosophy, Vol. 7/3, 269-282*.

[520] Jacques (2009), p. 207.

[521] Among those who emphasise the enduring importance of the concept of the Mandate of Heaven in contemporary Chinese politics are Jacques (2009), Zhang Weiwei (2012) *The China Wave: Rise of a Civilizational State*, Hackensack, NJ: World Century Publishing, and Kissinger (2011).

[522] Fung Yu-lan (edited by Derk Bodde) (1948) *A Short History of Chinese Philosophy*, New York: The Free Press, p. 74.

[523] See Spence (1990), pp. 170-178.

> If the emperor be not benevolent, he cannot preserve the empire *from passing from him.*
>
> If the sovereign of a State be not benevolent, he cannot preserve his kingdom.[524]

What, then, according to Mencius, is benevolence? In essence, it is benign, paternalistic rule with the interests of the whole people in mind, the ruler acting as "the parent of the people."[525] This is strictly in keeping with the Confucian idea of the importance of maintaining a traditional hierarchy of relationships (i.e. ruler and ruled, father and son, husband and wife, older brother and younger brother) in order to establish a harmonious, well-functioning society. Mencius considered that a ruler who did not govern with consideration for his/her subjects was no longer fit to be called a ruler, and could be overthrown or even executed by a subordinate on the principle that "If the emperor does something wrong, it throws the universe out of kilter."[526] The following extract from the *Works of Mencius* illustrates the point:

> King Xuan of Qi asked, "For a minister to slay his ruler – can this be countenanced?"
>
> Mencius replied, "Someone who robs his people of humane virtue is a thief; someone who robs them of rightness is a ruffian. Someone who is a ruffian and a thief is a mere fellow. I have heard of the punishment of the fellow Zhou but never of the slaying of a true ruler."[527]

Under Mao's leadership after 1949, Confucianism was rejected as being contrary to the egalitarian principles of the revolutionary movement, particularly during the Cultural Revolution.[528] In recent years, however, there has been a move by China's leaders back towards acceptance of some degree of Confucian doctrine, and an increasing rhetorical tendency to endorse paternal-style leadership by patriarchal cliques within the CCP.[529] This means that the Mencian conception of the right of revolution, while obviously not discussed in public, can still be seen as having some implicit influence in Chinese political life, particularly since China's traditional Confucian culture has never really disappeared despite Mao's attempts to eradicate it.[530] The idea that the ruling elite

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[524] James Legge (transl.) (1875) *Works of Mencius*, New York: Hurd and Houghton, p.100 (Book 4A 3.3).

[525] Legge (1875) *Works of Mencius*, p. 35 (Book 1B 7.6).

[526] Richard E. Nesbitt (2003) *The Geography of Thought: How Asians and Westerners Think Differently … And Why*, London: Nicholas Brealey, p. 17.

[527] Mencius Book 1B 8.2-8.3. Here I have adapted and simplified the translation of this passage for reasons of greater clarity from several versions including Legge (1875), and Wm. Theodore de Bary and Irene Bloom (eds.) (1999) *Sources of Chinese Tradition, 2nd edition, Vol. 1*, New York: Columbia University Press.

[528] Spence (1990) pp. 635-6.

[529] See Bell (2008).

[530] Ibid., p.10.

could be legitimately overthrown if the people became dissatisfied with it is thus undoubtedly still relevant to today's China, especially in the light of a multitude of historical examples of violent dynastic power transitions well-known to the Chinese public, and is implicit in the 'Mandate of Heaven' conceptualisation of right to rule.[531]

In fact, precisely this fear of the power of the will of the people is clearly demonstrated in a good deal of present-day CCP government policy, specifically designed to keep the people more-or-less satisfied with the status quo order and to deter dissent. For example, in order to maintain public support for the party, or at least to quell stirrings of dissatisfaction, the government tries to emphasise consistent and rapid economic growth, improvements to healthcare and the public transport network, and attempts to keep the cost of housing from spiralling out of control. On the other hand there are frequent appeals to Chinese patriotism, intolerance of dissent, and strict censorship of the media and the Internet (particularly when it comes to blocking news about demonstrations and dissent).[532] All of these actions can be seen, in a sense, as connecting to a Mencian set of values concerning correct, benevolent rule which benefits the collective as a whole, even if this is achieved, at times, at the expense of individual lives and freedoms.[533]

The preceding analysis therefore suggests that western views of China's regime as oppressive, dictatorial, and abusive of individual rights and freedoms, while certainly not without a great deal of justification, tend to miss or downplay one significant point: paternalistic authoritarianism, as throughout the rest of Confucian East Asia (i.e. Japan, Korea, Taiwan, Singapore and Vietnam), has a long tradition in Chinese political culture, and is therefore the type of rule to which the Chinese are socio-culturally and psychologically accustomed.[534] China has adhered to a hierarchical, supposedly benevolent conception of government as long as it has been unified (i.e. since 221 BCE), and has never yet experienced anything akin to western democracy: all attempts to transform the centralised authoritarian system along the lines of western democracy

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[531] See Zhang (2012), p. 65, and Jacques (2009), p. 207.

[532] For more on these points, see Shirk (2007), especially Chapter 3.

[533] While the latter set of policies do not appear particularly 'benevolent' in a Western sense, in terms of Mencian philosophy, the suppression of individual rights can be justified if it promotes the collective good. See Legge (1875) *Works of Mencius*, p. 180 (Book 7A 13.1-13.2) for Mencius' exposition of this point.

[534] See Pye (1985) for a full discussion of the cultural dimensions of politics in Confucian East Asia.

have thus far failed (most notably after the fall of the Qing dynasty in 1911).[535] This makes the enacting of democratic change, while undoubtedly desired in theory by a large proportion of the PRC's population, highly problematic in practice due to psycho-cultural patterns of thought which, as in every culture, are resistant to being quickly altered.[536]

Here, in order to firmly establish the point that democratic transition is unlikely to be easily achieved in China, we can compare the PRC with some other countries with long histories of authoritarian rule that have attempted to introduce European-style democratic systems of government. The transition to democracy in Russia, for example, has been far from smooth in the two decades since the break-up of the Soviet Union.[537] Russia, somewhat like China, is a vast landmass containing disparate peoples and cultures and, until the 1917 October Revolution, was held together by a feudal, hierarchical system containing a tsar at the top, and under him a pyramid of noblemen and peasants. Likewise, Russia's Communist era was authoritarian in practice, and dismissive or disregarding of European-style human rights and democratic institutions right through to the Gorbachev era in the 1980s.[538] By implication, therefore, the transition to democracy since 1992 has been a radical innovation, one that has not immediately gelled with Russian political culture on a sociocultural and psychological level, as can be seen from the Russian electorate's apparent preference, after the Yeltsin years of chaos in the 1990s, for a return to a strong, authoritarian leader like Vladimir Putin at the head of a centralised and powerful government, rather than a western-style culture of democratic consultation, regional representation, and laissez-faire economics.[539]

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[535] Ibid., p. 188. Andrew J. Nathan (2000) 'Chinese Democracy: The Lessons of Failure', in Zhao Suisheng (ed.), lists failed Chinese attempts at democratisation, and then goes on to analyse the reasons underlying these failures.

[536] For in-depth discussions of some of the issues surrounding Chinese Confucian culture and the possibility of adopting western democratic institutions in China, see Jacques (2009), pp. 211-220, and Hu Shaohua (2000) 'Confucianism and Western Democracy', in Zhao Suisheng (ed.) *China and Democracy: Reconsidering the Prospects for a Democratic China*, New York: Routledge. For a detailed analysis of psycho-cultural differences between the cognitive patterns of thinking of East Asians and Westerners, including summaries of numerous scientific, peer-reviewed psychological experiments, see Nesbitt (2003).

[537] See Gregory L. Freeze (2009) *Russia: A History (Third Edition)*, Oxford: Oxford University Press, Chapters 14 and 15, for a detailed analysis of the collapse of communism, the anarchic failure of the Yeltsin years in the 1990s, and the return to authoritarianism under Putin.

[538] For an in-depth account of Russia's 20th century development see Robert Service (2009) *The Penguin History of Modern Russia: From Tsarism to the Twenty-First Century, Third Edition*, London: Penguin.

[539] For a direct comparison of political developments in China and Russia from the 1990s onwards, see Peter Rutland (2007) 'Globalization and the post-socialist transition: Russia and China compared', *Working Paper CSGP*

Japan, as an East Asian Confucian-influenced nation which has taken on the institutions of western democracy, constitutes an even better point of comparison. Although on paper it possesses a European-style parliamentary democracy, Japan's system of government is not entirely what it seems at face value. For one thing, a single party (the Liberal Democratic Party or LDP) has governed from 1955 until the present with only two interruptions (for 11 months between 1993 and 1994, and from 2009 to 2012), constituting in effect a near-monopoly on power which is unusual among mature democracies.[540] Like Russia, Japan has long resisted a system of European-type public debate, and has instead tended to favour decision-making behind the scenes by an elaborate hierarchy of patriarchal figures within a "tight party/bureaucracy/interest group"[541] system which is close to being a nationwide closed-shop, one-party political structure. Thus, despite appearances to the contrary, there is arguably not as great a difference between the present-day models of Japanese and Chinese governance as there seems to be. Both countries have emerged into modernity direct from bureaucratic Confucian systems with an emperor at the head (the Japanese emperor is still there). Both have adopted, in the modern era, closed governance by hierarchically-constructed cliques of men with close links to local and national business interests. Both have systems of government that, in practice, have few aspirations to western-style transparency. And both tend to have paternalistic, authoritarian government – although it is clear that rule by the CCP is in an altogether different class of authoritarianism than Japan's government, in that the latter is elected by popular vote, whereas the former is selected via consultation among the powerful cliques within the CCP behind closed doors and without direct input from the Chinese people.[542]

The preceding analysis is intended to demonstrate that any democratic power transition in China would have to take place in a socio-cultural context that is accustomed to Confucian-type hierarchical governance by backroom machinations

rather than a culture of consultation and transparency.[543] Furthermore, authoritarian rule via elaborate hierarchies of thousands of scholar-bureaucrats not only has a long tradition in China, but may in the long term emerge as the only pragmatic option for the governance of a population whose size (1.4 billion approximately) exceeds that of all previous states or empires in world history, is divided into 20 provinces of up to 100 million people each, and which is spread out over a total land mass only slightly smaller than Europe.[544] This geographical area also includes 55 official ethnic minorities (apart from the majority Han, who constitute about 91.5 per cent of the population, according to official census data[545]), numbering approximately 114 million people. The most recalcitrant of the minorities – the Tibetans and the Muslim Uighurs in Xinjiang province – are in the most distant provinces, making these the hardest to control.[546] Thus, a range of geographical and social factors (which occupied much of the time and attention of a succession of emperors who had to grapple with the logistics of administering their far-flung dominions) suggest that democratisation would be very problematic to implement, very uncertain of success (as in Russia), and very prone to inducing grass-roots protest and rebellion, which could quite possibly lead, by a domino effect, to systemic collapse or regionalised anarchy (as occurred after the fall of the Qing dynasty in 1911).[547]

It can therefore readily be understood that the present-day Chinese government, whatever one may think of it, is faced with an extraordinary feat of juggling an abundance of different political, economic, social, industrial, environmental and other balls in order both to maintain its power and to modernise China effectively. It constantly has to stave off accusations that it might have lost the Mandate of Heaven by betraying its peasant power base, while attempting to maintain constant economic growth via a capitalist economic system intended to meet the demand of the emergent middle classes for an improved standard of living. It has to expand and improve China's industrial base and infrastructure, while attempting to stem a rising tide of

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[543] See Pye (1985) and Emmott (2008) *Rivals*.
[544] See Jacques (2009), pp. 422-424, for a more expansive discussion of this point.
[545] Data obtained from *Xinhua News* (Beijing), 'Han Chinese proportion in China's population drops: census data', April 28, 2011, available at: news.xinhuanet.com/english2010/china/2011-04/28/c_13849933.htm, (accessed July 9, 2013).
[546] See Jacques (2009), p. 251, and Shirk (2007), p. 58.
[547] For an analysis of China's historical struggles (and failure) to introduce democratic institutions, and the unfortunate possibility of similar problems besetting any future attempt, see Suisheng Zhao (2000) 'A Tragedy of History: China's Search for Democracy in the Twentieth Century', in Suisheng Zhao (ed.).

discontent concerning environmental degradation and the negative effects of industrial pollution on health and well-being. It has to try to provide better services (better health care, pensions, transport, etc.) for a vast population while trying to keep income taxes low enough to deflect dangerous accusations of exploiting China's hundreds of millions of low-paid workers and peasants. It has to try to ensure a high employment rate in a newly capitalist economy of (supposedly) private corporations while continuing to dismantle the 'iron rice bowl' system of guaranteed jobs for life in state-run industries. It has to be seen to be dealing with official corruption, much of it within the CCP itself, while keeping the cash flowing into Party coffers in large quantities in order to fund an ever-lengthening list of expenditures. It has to listen to the people's complaints and protests concerning property developers' seizures of land, lack of individual legal rights, cancer epidemics resulting from industrial water pollution, and so on, while striving to maintain political control by manipulating public opinion through patriotic fervour (meaning essentially nationalistic/xenophobic tendencies). And it has to keep all of these different-sized and different-shaped balls in the air at one and the same time, because if one should fall then the whole juggling act will come crashing to the floor, and with it, quite possibly, the CCP and the PRC.[548]

In this context, the reasoning behind many of the Chinese government's recent and on-going policies becomes quite transparent. It is necessary to keep tight control over internet content, for instance, because allowing open discussion in the public sphere of the sensitive issues of (for instance) the June 1989 Tiananmen Square incident, the fates of dissidents such as Ai Weiwei and Liu Xiaobo, or Tibetan and Taiwanese independence (among many other issues) might easily lead to a rapidly swelling and out-of-control popular protest movement along the lines of the Arab Spring or 1989's Velvet Revolution in Czechoslovakia. [549] Such an eventuality could threaten the existence of the PRC itself in the same way that the Soviet Union was ended by the popular uprisings in Central and Eastern Europe (CEE). For the same reason, experiments with democratisation (such as the village elections initiated in the 1990s)

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[548] The most comprehensive account of this political juggling act is Susan Shirk's (2007) work, *China: Fragile Superpower* (Oxford: Oxford University Press), particularly Chapters 2 and 3, where all the issues listed in this paragraph are discussed in detail.
[549] See Shirk (2007), Chapter 4, and Shambaugh (2008), pp. 106-111, for concise discussions of internet and other media censorship in the PRC.

have not been extended or expanded in recent years, and remain deliberately limited in scale and effect.[550]

Furthermore, according to evidence presented by David Shambaugh in his 2008 book *China's Communist Party: Atrophy and Adaptation*, between 1991 and 2004 there was in China an intensive period of study by both government think-tanks and scholars in the Chinese Academy of Social Sciences (CASS) of the causes of the downfall of the Soviet Union and the Communist Eastern bloc.[551] This resulted in the CCP drawing up an official document containing a very detailed set of directives, based on the lessons learned from the fall of Communism in CEE, to guide a broad range of future policy in the PRC.[552] In the forefront of the lessons learned was the need to avoid economic stagnation by ensuring that the economy was growing and providing the Chinese people with the kind of goods and material comforts they increasingly desired, especially in view of the loss of faith in Communism and the resulting ideological vacuum.[553] However, there was also a realisation that the necessity (for the reasons outlined in the preceding pages) of suppressing potentially anti-government protest movements such as Falun Gong meant that pro-government propaganda, in order to be effective, would have to be presented in a far more interesting and attractive way in order to counteract the seductive lure of Western values and freedoms. This implied that the government-controlled media – such as the state-owned China Central Television (CCTV) and state-controlled newspapers such as the *Global Times* – would have to be more entertaining and subtle in their presentation of CCP agendas, as well as somehow integrating into their content issues which interested the readers, viewers and listeners of this output. [554]

The end result of this drive to provide the Chinese public with censored, propagandistic content which at the same time would still be entertaining and thus willingly consumed was an intriguing shift towards tabloidization of the state-controlled media in recent years.[555] More shocking themes (such as news stories with sexual or violent content)

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[550] Jacques (2009), p. 223, states that "The purpose of village elections … has been good governance and functional efficiency rather than any move towards a wider process of democratization."
[551] See Shambaugh (2008), Chapter 4.
[552] Ibid., p. 60.
[553] Ibid., pp. 73-4.
[554] Shirk (2007), Chapter 4.
[555] Ibid., pp. 86-7.

could be covered by state organs as long as they did not touch in any way upon sensitive political areas.[556] This means, as Susan Shirk points out, that

> If you peruse the Chinese blogosphere or even a newsstand, you will be amazed at the fascination with Western cultural icons like Madonna and Britney Spears and shocked at the images of violent and sexually explicit acts. As Xiao Qiang, director of the China Internet Project at the University of California–Berkeley said, "It's a wild place. Outside of politics, China is as free as anywhere." The CCP lacks the manpower and resources to control everything, so it keeps its thumbs on the types of information that officials believe could arouse political opposition and subvert the Party's power. When it comes to sports, technology, lifestyles, movie and music stars, health, and sex, almost anything goes, especially on the Internet.[557]

At the same time, patriotic fervour came to be emphasised increasingly through news stories which focussed on supposed affronts to Han Chinese pride[558], for instance coverage of Japanese activity in the area of the disputed Diaoyu (Senkaku) Islands or of foreign heads of state meeting the Dalai Lama.[559] The ability of the People's Liberation Army (PLA) to react swiftly to natural disasters such as the 2008 Sichuan Earthquake (which affected majority Tibetan areas) was also covered extensively by the media in order to demonstrate the ruling party's ability to deal with unexpected catastrophe and thus its right to retain the Mandate of Heaven: as Deng Xiaoping's former English interpreter Zhang Weiwei (now an IR scholar) explains, "crises often provide opportunities for consolidating legitimacy."[560] In such ways the Party has learned to draw the attention of the Chinese public towards themes to which it was happy to allow them access (because they would occupy the public's attention while encouraging patriotism and doing no damage to the CCP's standing), and simultaneously away from the more taboo topics mentioned earlier.

With regard to the media in China, the issue of internet freedom and censorship is an intriguing one. While censorship of certain terms and themes (e.g. Tibet, Dalai Lama, Taiwanese independence, etc.) as well as certain websites (e.g. Facebook, Youtube) is well documented and immediately apparent to any foreign visitor who turns on a computer, what is perhaps less well-known outside China is the influence of the activity

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[556] Ibid., pp. 89-90.
[557] Idem.
[558] Shambaugh (2013), p. 234.
[559] Ibid., p. 93.
[560] Zhang (2012), p. 133.

of what are called in China 'netizens' (*wangmin*, 网民), i.e. activist internet users.[561] In the last decade, as use of the internet has mushroomed and China has overtaken the US in numbers of internet users[562], the potential influence of Chinese netizens on government policy has also become a major factor, even in spite of censorship.[563] This new form of direct and rapid public pressure has been openly acknowledged by the government in the form of a call by ex-president Hu Jintao in 2007 for improved official measures to control content and improve security in order to "cope with the Internet"[564] and maintain "the stability of the state".[565]

Evidence of the potential power of the internet to influence politics, if any were needed, is provided by the uniquely Chinese phenomenon of 'human flesh search engines' (*renrou sousuo*, 人肉搜索).[566] These are something like online vigilante groups which spring up in response to news items and chase down individuals accused of offences against human dignity (such as abuse by parents of children), or behaviour which reflects badly on the Chinese nation (e.g. uncultivated behaviour by Chinese tourists overseas), thereafter swiftly publishing the personal details of the accused online and pressing for action from the authorities.[567] This frequently results in real-world problems for the 'offenders' when they lose their jobs or are castigated in the street.[568] The remarkable power of the human flesh search engines bears testament to the potential of the internet to enable popular movements to arise, and therefore must be taken seriously as a possible force of change in China. However, the influence of Chinese netizens in the political sphere is (at least at present) clearly tempered or even negated by the over-arching power of the state to control online content through direct censorship, as well as by manipulation of forum content achieved by "planting positive

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[561] Susan L. Shirk (2011) 'Changing Media, Changing China', in Susan L. Shirk (ed.) *Changing Media, Changing China*, Oxford: Oxford University Press, p. 13.
[562] According to Xiao Qiang (2011) 'The Rise of Online Public Opinion and Its Political Impact', in Shirk (ed.) (2011), p. 204, there were more than 384 million internet users in China by 2009, more than any other country on earth.
[563] Xiao (2011), p. 206.
[564] Ibid., p. 207.
[565] Ibid., p. 208.
[566] Shirk (2011), p. 28.
[567] Xiao (2011), pp. 213-6, illustrates the phenomenon with several examples.
[568] For examples of the activity of Chinese cyber-vigilantes, see Tom Downey (2010) 'China's cyberposse', *The New York Times*, March 3, 2010, available at: www.nytimes.com/2010/03/07/magazine/07Human-t.html?pagewanted=all, (accessed July 9, 2013).

online commentary"[569], chiefly by means of paying contributors to add pro-government comments.

One last important issue in Chinese domestic politics is the question of unity within the Communist Party. This is clearly a complicated but vital issue, as it is in all governments, dealing as it does with the possibility of factions and schisms within the upper echelons of the ruling group, and the potential danger to the CCP's control this presents if such disagreements should become public. However, due to the secrecy with which negotiations are conducted at this level of the CCP, the degree to which there is disagreement and jostling for position and power cannot really be established with any certainty. [570] It can be stated with authority, however, that the well-documented disagreement over economic policy from the 1960s onwards between Mao and Deng Xiaoping[571], which resulted in a drastic change of direction upon Deng's taking up the reins of power in 1978, reveals that there has always been intense debate within the Party, and that the CCP houses members of many different backgrounds and beliefs. The disagreement between Deng and Zhao Ziyang in May and June 1989 over how to deal with the student protestors on Tiananmen Square also reveals that CCP opinion about opening up to democracy was not uniform.[572] It can therefore be safely assumed that internal disagreements and debates continue within what Susan Shirk calls the 'black box' of the Chinese government.[573]

Nevertheless, whether the range of opinions and discussion of policy direction that undoubtedly today exists, as it does in all governments, beneath the veneer of monolithic official policy is to be considered a strength or a weakness is difficult to assess. All that can be said with confidence is that since the handover of power from Deng to Jiang Zemin in 1993 the Party has learnt what it regards as the political lessons of Tiananmen, despite rumours of dispute between factions and cliques, and kept a remarkably disciplined and tight party line.[574] This is still more remarkable in that discipline has been maintained through two scheduled handovers of the presidency, from Jiang to Hu Jintao in 2003, and from Hu to Xi Jinping in 2013. It therefore

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[569] Shirk (2011), p. 26.
[570] Shirk (2007), p. 39.
[571] Spence (1990), p. 595.
[572] Shirk (2007), pp. 35-8.
[573] Ibid., p. 39.
[574] The CCP's three lessons of Tiananmen, which "constitute a formula for stability", are, according to Susan Shirk (2007), p. 39, the following: "Avoid public leadership splits"; "Prevent large-scale social unrest"; and keep the military on the side of the Party".

seems, given the history of the last two decades since Deng voluntarily stepped down and initiated a process of formal, scheduled succession on the basis of ten-year presidencies rather than irregular coups and power shifts, increasingly unlikely that the downfall of the CCP would be caused by an internal split, or that any such disagreement would even be revealed in public.

In summary to this section, here are the most significant points:

- ❖ China's present-day domestic politics has been dominated since 1949 by the unbroken rule of the CCP, which retains, despite the 1989 Tiananmen Square incident, tight control over the domestic politics of the PRC.
- ❖ Traditional Confucian political philosophy means that the CCP constantly has to demonstrate to the public that it is worthy of retaining the 'Mandate of Heaven' in the face of the daunting range of challenges and problems presented by the rush to modernise China.
- ❖ Governing modern China, with its huge population and geographical area, is a massively complicated political juggling act – but the CCP has thus far managed to keep the balls in the air effectively while pushing through modernisation measures as rapidly as possible.
- ❖ Given the CCP's tight hold on power and its ability to keep internal disagreements secret for the last two decades, it appears unlikely that the Party will be easily overthrown either from within its ranks or from the outside, meaning that at present there is no real prospect of substantial political change in China.

4.26   China's international politics

While China's present-day domestic politics is dominated by the Confucian concept of retaining the mandate of heaven (*tianming*), the philosophical background to the nation's international relations is arguably formed by the notion of 'All under Heaven', known in Chinese as *tianxia* (天下). In traditional Chinese philosophy this concept placed the unified Chinese empire at the centre of a system of tributary states, with which negotiations would take place via envoys sent to the emperor's court. The system,

as Wang Gungwu points out, was intended to preserve the unity and territory of the Chinese civilisation-state while constantly and peacefully expanding its influence.[575] This made sense in terms of China's geography, surrounded as it was by hostile nomadic tribes to the north and west, by the Koreans and Japanese to the east, and by Vietnamese, Thais and others to the south; but it was also logical in economic, cultural and political terms, as Chinese norms and ideas came to dominate the East Asian arena in all these areas.[576]

In the ancient Chinese conception of *tianxia*, the 'son of heaven' (the emperor) was located at the centre of a world in which it was his moral responsibility, as far as possible, to maintain peaceful relations among the participants in the system.[577] This view of international relations, in contrast to the Western realist conception of competing individual states in a zero-sum game, each pursuing their own national interest at the expense of the others, sees international politics (and economics) as potentially a positive sum game where all can benefit if compromises can be found which suit all actors.[578]

The aim in *tianxia* politics is thus to seek peaceful solutions to the interconnected, interdependent problems of actors – with the important proviso, as Wang Gungwu demonstrates, that all such solutions, from the Chinese point of view, should ensure the continuation of the Chinese civilisation-state and the promotion of Chinese interests on the global stage.[579] In earlier periods of Chinese history this meant avoidance of inter-state war at all costs, even if this resulted (as in fact it often did) in the necessity of buying off hostile tribes with gifts and concessions.[580] In fact, China's history, as David Kang demonstrates, has generally been relatively (although obviously not entirely) free of inter-state conflict.[581] Between 1368 and 1841, for example, Kang shows that there were only two international conflicts in East Asia: China's invasion of Vietnam (1407-

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[575] Wang Gungwu (2008) 'China and the international order: some historical perspectives', in Wang Gungwu and Zheng Yongnian (eds.) *China and the New International Order*, Abingdon, UK: Routledge.

[576] See Kissinger (2011), pp. 15-22 for more detailed explanation of the Chinese *tianxia* and tributary systems of international relations.

[577] Ibid., pp. 15-16.

[578] Zhang (2012), pp. 174-5.

[579] See Wang (2008).

[580] Kissinger (2011), p. 21.

[581] David C. Kang (2010) *East Asia Before the West: Five Centuries of Trade and Tribute*, New York: Columbia University Press.

1428) and Japan's invasion of Korea (1592-1598).[582] This is clearly far fewer than the frequent bloody wars among European powers during the same period.

In contemporary times, particularly since a seminal publication by Zhao Tingyang in 2005 [583], this historical *tianxia* philosophy has been updated by some Chinese authors[584] into a radically new conception of IR theory, which is positioned either in contrast or as a complement to Western ones. In this reformulation of *tianxia*, the ancient Confucian idea of perceiving the world surrounding and including China as 'all under heaven' is taken to imply that China's notional 'peaceful rise' or 'peaceful development' (as propagated by the CCP) can lead to an improved future for the whole of mankind – conceived as 'one family under heaven', or *tianxia yijia* (天下一家)[585] – without the need to resort to large-scale inter-state conflict. Ren Xiao summarises Zhao's argument as follows:

> Zhao argues that China's world view *is* the *tianxia* theory. China's idea of *tianxia* is above and beyond the idea of the state. While Western thought thinks of conflict, Chinese thought is capable of thinking of harmony. Distinct ideas do exist and they can serve as an important and constructive anchor for the world's future. They cannot be expressed within the Western intellectual framework, and thus they need to be displayed in a new framework and developed into a new theory.[586]

Thus the philosophy of 'all under heaven', when combined with the CCP's aim of 'peaceful rise', has normative content in terms of a global positive sum game, with an imagined, scientifically more advanced and enlightened future underwritten by Chinese conceptions of benevolent political leadership.[587]

At this point it needs to be noted that the reformulation of the ancient Confucian *tianxia* philosophy outlined above is clearly a utopian, idealistic one. Setting up an ideal future to aim towards, however, is characteristic of all normative theories, and does not therefore prevent *tianxia* theory from fulfilling the oft-repeated demand by

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[582] Ibid., p. 2.

[583] Zhao Tingyang (2005) *Tianxia Tixi: Shijie Zhidu Zhexue Daolun* (The *Tianxia* System: A Philosophy for the World Institution), Nanjing: Jiangsu Jiaoyu Chubanshe. This publication is in Chinese, but Zhao has summarised the central ideas of the book in English as: Zhao Tingyang (2006) 'Rethinking Empire from a Chinese Concept ''All-Under-Heaven'' (Tian-xia)', *Social Identities*, Vol. 12, No. 1, pp. 29–41.

[584] Most notably David C. Kang and Zhang Weiwei, whose 2012 book *The China Wave* sold about a million copies in its original Chinese-language version.

[585] See Ren (2010), p. 112.

[586] Ren (2010), p. 113.

[587] See Zhang (2012) for a book-length exposition of this idea.

many IR scholars, both Western and non-Western, for a coherent non-Western theoretical perspective through which to understand international politics and IR.[588]

Zhao's reformulated *tianxia* theory also serves a second purpose in the context of this thesis: that of opening a window onto Chinese conceptions of international politics. This opened window can here assist us in two ways: first, it reveals to us a uniquely Chinese vision or version (as opposed to the many Western ones available in English) of how a future world with China as a major power might appear; and second, a critical analysis of the Chinese conception of IR, in both its normative and descriptive aspects, can contribute to the task of constructing scenarios of China's future based on expert forecasts.

Before that, however, in terms of obtaining a better understanding of China's present-day approach to international politics it is necessary to conduct a more detailed analysis of the nature of China's historical involvement with other states. This is so because, as Wang Gungwu shows, taking an 'inside out' perspective reveals that the Chinese approach to international affairs is deeply entrenched in historical experience:

> From inside looking out, it does seem that key Chinese leaders and thinkers take as their starting point the deep structure that gave shape to the civilization and state that came to being over 3,500 years ago. They have turned regularly to all the historical experiences that they had in dealing with external powers since the beginning and then to their more recent introduction to a Western-dominated world. It is possible to find some consistent underlying themes in these experiences.[589]

Thus it is important to note, as we have seen in this chapter, that since its unification in 221 BCE, China, the 'Middle Kingdom' or 'Central State' (*zhongguo*, 中国), has always perceived itself (and been perceived by others) as being defined by its relations with the smaller neighbouring states by which it has always been geographically encircled in the East Asian sphere. Two millennia of international interactions have thus been largely characterised by China's socio-political hegemony over its neighbours in a so-called 'tributary' system: this consisted of endless rounds of negotiations in which the

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[588] A seminal article in this context is Amitav Acharya and Barry Buzan (2007) 'Why is there no non-Western international relations theory? An introduction', *International Relations of the Asia-Pacific*, Vol. 7, No. 3, pp. 287-312. Among the numerous texts which follow up and expand upon the points introduced in this article are: Ching-Chang Chen (2011) 'The absence of non-Western IR theory in Asia reconsidered', *International Relations of the Asia-Pacific*, Vol. 11, No. 1, pp. 1-23; and Acharya and Buzan (eds.) (2009) *Non-Western International Relations Theory: Perspectives On and Beyond Asia*, Routledge.
[589] Wang (2008), p. 23.

neighbouring states sent emissaries to the Chinese court to establish terms for trade and other usually peacefully resolved interaction.[590]

The most significant of China's neighbours can be divided into two main groups: those to the east and south, and those to the north and west. The neighbouring states in the east and south – most importantly the Koreans, Japanese and Vietnamese – became so enmeshed in Chinese influence, especially once they became settled agriculturalists like the Chinese themselves, that their later-evolving cultures adopted and adapted many features of Chinese culture, in particular Confucian traditions and aspects of the Chinese language such as Chinese characters.[591] Conflicts between this group of states and China, while they did occur, were relatively infrequent down the centuries and were usually resolved without recourse to armed warfare and to the mutual benefit of both sides as far as possible.[592]

The other group of nations, to the north and west, consisted of a number of nomadic tribes such as the Mongolians, Tibetans and Manchus. These, in that they were pastoralists and their livelihood depended on roaming and finding good pastures, or raiding farms and cities when times were hard, were culturally very different to the Chinese and thus much harder to pacify by the methods used with the first group. The need to keep out these warlike, horse-riding northern barbarians explains why a succession of Chinese emperors saw the need to build and strengthen the Great Wall of China against them, measures which ultimately failed when the Chinese were conquered by the Mongolians (who created the Yuan dynasty) and the Manchus (the Qing dynasty).[593] However, such was the seductive power of Chinese sociocultural traditions and material achievements that even when conquered the Chinese were able to assimilate their conquerors by means of the comfortable urban lifestyles the erstwhile rulers acquired.[594] Both the Yuan and the Qing were Sinicized through the generations to the extent that in the long-term the civilised descendants of the original marauding hordes ceased to be anything except Han Chinese.[595] By developments such as these the Chinese came psycho-culturally to see themselves as being naturally

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[590] Kissinger (2011), pp. 15-22.
[591] The Japanese still use Chinese characters today, but the Koreans and Vietnamese have now adopted different writing systems.
[592] Kang (2010).
[593] Keay (2009).
[594] Kissinger (2011), p. 21.
[595] Ibid., p. 22.

superior[596] to the tribes who occupied the land to the north and west, the majority of which they would not even have classified as having achieved a civilised level of development.[597]

Thus it was the assumption that their civilisation was materially and culturally positioned at the top of a hierarchy of nations that ultimately (to cut a very long story short) made the Chinese complacent and their great empire gradually stagnate during the late Ming and Qing dynasties, finally falling apart in the second half of the nineteenth century.[598] It also meant that the appearance in the eighteenth and nineteenth centuries of a new set of barbarians – the Europeans – on the seas off their eastern coast in possession of vastly superior military technology capable of smashing their army and navy came as a tremendous shock to the Chinese collective psyche, used as it was to socio-political and socio-economic dominance in the East Asian sphere. It also meant that China lost its position as East Asian hegemon, first to the European colonial powers and thereafter to Japan. The European undermining of Chinese hegemony from the mid-nineteenth century onwards (via the Opium Wars and other encroachments) led indirectly to the fall of the Qing dynasty in 1911, the period of power vacuum and warlord-led anarchy that followed in the 1920s, the Japanese occupation of 1930 to 1945, and the Civil War between Mao Zedong's Communists and Chiang Kai-shek's Nationalists (Kuomintang) which ended the 'century of shame and humiliation' in 1949 with the victory of the CCP and the reunification of China under Mao.

The Mao years were marked by general isolation from the international community, particularly after the Chinese seat on the UN Security Council was taken by Taiwan (to which Chiang Kai-shek had fled in defeat), while China attempted, despite the major setbacks of the Great Leap Forward and the Cultural Revolution, to reform and modernise. Even relations with the Soviet Union were strained after 1960 as Mao and Khrushchev fell out and Soviet assistance was withdrawn from the PRC. The first sign of opening to the world came in 1972, when Mao met Nixon; but it was not until after Deng's reforms had been seen to have borne fruit in the mid-to-late 1990s that China's

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[596] Shambaugh (2013), p. 308.

[597] For more on the historical Chinese sense of the superiority of their civilisation, see Pye (1985) and Jacques (2009).

[598] The full story of this gradual decline and the other events outlined in this paragraph is told by Jonathan Spence in his magisterial 1990 volume, *The Search for Modern China* (New York: Norton). For another account, see Keay (2009), Chapters 13-16.

economic growth forced the rest of the world to view it as a rising global power and to re-establish better formal relations.[599]

China fought on the side of North Korea against the UN forces in the Korean War (1950-1953), and has also fought over the demarcation of borders in 1959 with India,[600] in 1969 with Russia,[601] and a brief (failed) punitive expedition in 1979 against Vietnam.[602] Despite appearances, the first three of these conflicts appear to have been chiefly about the PRC maintaining its rights to its existing territory rather than aggressive expansionism, while according to Spence the fourth, in Vietnam, was an attempt at a rather clumsy show of military strength.[603] It is not well-known, for instance, that the PRC entered the Korean War only after the UN forces had crossed the 38th parallel (the international border between North and South Korea) and reached the Yalu River which marked the border between North Korea and China. This occurred only after Beijing had warned the UN to halt at the 38th parallel.[604] Furthermore, Mao's decision to intervene was also made on the basis of repaying "the sacrifice of so many Koreans in the Chinese revolution, the anti-Japanese resistance, and the Chinese civil war."[605] Once the war concluded in a stalemate the Chinese forces withdrew, leaving the North Koreans to their own devices on their own territory ever since. Thus China's claim to be rising peacefully on the international stage, even if needing to be treated with a degree of scepticism, is supported by the historical record, particularly when its record of having fought in no inter-state wars since 1979 is contrasted with the frequent international interventions and invasions by the USA during this period.

In international affairs, Beijing in fact appears still to be following Deng Xiaoping's advice to 'keep a low profile' (*taoguang yanghui*, 掏光养晦), 'not take the lead' on the world stage, and bide its time rather than getting involved in international entanglements.[606] This leads to accusations from some observers that China is not pulling its weight and is not a 'responsible stakeholder' in the international system.[607]

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[599] Keay (2009) summarises these events in his 'Epilogue', pp. 517-535.
[600] Spence (1990), p. 588.
[601] Ibid., p. 616.
[602] Ibid., p. 659.
[603] Idem.
[604] Ibid., pp. 529-530.
[605] Bruce Cumings (2010) *The Korean War: A History*, New York: Modern Library, p. 25.
[606] Shambaugh (2013), p. 19.
[607] For instance according to Robert Kaplan (2010) 'Don't panic about China', *The Atlantic*, January 28, 2010, John Lee (2010) 'China won't be a responsible stakeholder', *Wall Street Journal*, Feb 1, 2010, and Yan Xuetong (2010)

However, the analysis conducted in this and the previous sections reveals the reasons for this: Beijing's current priority is to maintain domestic stability at all costs as China develops, not to get involved with global governance on a broad scale.[608]

In the present-day, China's international relations are generally distinguished by tension between the ever-increasing forces of global economic interdependence and unresolved political issues. This is epitomised by Beijing's relations with Washington, which are characterised by large-scale American consumption of Chinese goods and a resulting massive trade imbalance (propped up by the Chinese purchase of approximately $1 trillion in US treasury bonds), but at the same time intense mutual suspicion between the pair concerning the other's geopolitical intentions.[609] This atmosphere of mistrust has recently been intensified by the revelation of cyber espionage and hacking activity on a large scale by the governments of both powers.[610] Thus US-China relations can be seen as existing within a framework of interdependence at the economic level and mutual mistrust at the political level, despite the institution in recent years of so-called 'G2' summits between US and Chinese leaders.[611]

China's relations with Europe, while not marked by the same degree of tension, are also heavily affected by a trade imbalance massively favouring China[612], as well as an undercurrent of unease on the European side concerning China's politics and human rights record.[613] The trade imbalance, as in the US, is caused by huge imports of Chinese goods and relatively low levels of exports to China. This trade imbalance, according to David Shambaugh, "has particularly been a factor in China's declining image in Europe".[614] This image is, unfortunately, rather negative, with Europeans finding it difficult to adapt to the "new reality" of China's rise, viewing China as "a kind of alien" and being "nervous about the implications of China's rise for their futures."[615]

'China's foreign policy should reflect its world number 2 status', *Guoji Luntan Bao* (*International Herald Leader*), December 6, 2010, available at: http://news.xinhuanet.com/herald/2010-12/06/c_13636783.htm, (accessed July 12, 2013).

[608] See Shirk (2007) and Shambaugh (2013) for book-length expositions of this thesis.

[609] Shambaugh (2013), pp. 73-78.

[610] For a summary of recent developments see Paul Eckert (2013) 'Snowden affair blunts US push for China to curb cyber theft', *Reuters*, July 8, 2013, available at: http://www.reuters.com/article/2013/07/09/usa-china-cyber-idUSL1N0FF00X20130709, (accessed July 12, 2013).

[611] Shambaugh (2013), p. 76.

[612] Shambaugh (2013), p. 92, reports that this deficit reached 169.6 billion euros in 2008.

[613] The BBC's 2011 global survey concerning views of China reveals "predominantly negative views across Europe" (Shambaugh (2013), p. 12).

[614] Ibid., p. 11.

[615] According to the PRC's Executive Vice Foreign Minister Zhang Zhijun, quoted in Shambaugh (2013), p. 94.

Beijing, on the other hand, focuses mainly on the demand that Europe, like the US, should not interfere in its domestic politics, meaning that Europeans should not press for Taiwanese and Tibetan independence from the PRC, or do anything to encourage dissident movements. Occasionally, for example, European leaders meet the Dalai Lama and duly incur Beijing's wrath, usually in the form of trade sanctions and the cancellation of high-level meetings and exchanges with the offending country.[616]

Also significant is the evolving relationship between Beijing and Brussels. According to Shambaugh, after the promise of the strategic partnership announced in 2003, "beginning around 2007 China-Europe relations entered a more complicated and difficult period."[617] It appears that during recent years the Chinese have become increasingly frustrated in their dealings with the EU.[618] As a result, Beijing would appear, since the financial crisis of 2007-8, to have adopted a policy of pursuing bilateral trade negotiations with individual member states while minimising direct transactions with the institutions of the EU itself.[619] Thus there are fears in some quarters of a 'divide and conquer' or – in the words of Godement et al – a 'scramble for Europe' strategy as the Chinese "play off member states against each other and against their own collective interests".[620] The increasing activity of Chinese companies in Europe while their European counterparts continue to experience difficulties in entering the Chinese market therefore represents a key issue for the future of Sino-European relations.[621]

In its relations with Africa, Latin America and the Middle East, Beijing self-consciously pursues three main policies. First, it makes a point of recognising individual states' right to sovereignty, self-definition and freedom from outside interference, based on principles established at the Bandung conference in 1955.[622] This means in practice that in their business dealings the Chinese intend to negotiate with whoever happens to be in power, whatever the regime's characteristics, without criticism or demands for

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[616] Shambaugh (2013), pp. 92-3.

[617] Ibid., p. 89.

[618] For evidence of mounting Chinese frustration with the EU see Kerry Brown (2013) 'Why China soured on Europe', *The Diplomat*, June 25, 2013, available at: http://thediplomat.com/china-power/why-china-soured-on-europe/, (accessed July 17, 2013).

[619] This hypothesis, it must be stated, is in need of further research beyond the scope of this thesis.

[620] Francois Godement, Jonas Parello-Plesner and Alice Richard (2011) *The Scramble for Europe*, European Council on Foreign Relations (ECFR) Policy Brief July 2011, London: ECFR, p. 1.

[621] Brown (2013) is the most recent attempt to draw attention to this issue.

[622] Kang (2007), p. 130.

regime change. Such a policy of inter-state laissez-faire has the function of satisfying Beijing's need for its own domestic affairs (among which it includes Taiwan) to be strictly recognised as nobody else's business, while attempting to undermine the Western agenda of promoting worldwide liberal democracy and Western-style human rights.[623]

The PRC's second policy is to claim that it, like most African, Latin American and Middle Eastern states, is a developing country recovering from a colonial past of exploitation at the hands of the Western powers. In this way, by demonstrating that it is 'on the same side', Beijing attempts to win the support in the UN and other global forums of the world's poorer nations, many of whom are aggrieved at the Western nations for perceived colonial injustices and the continuing North-South developmental divide. This attempt to woo developing countries by means of a 'charm offensive'[624] has been dubbed the 'Beijing Consensus' by Joshua Cooper Ramo. [625] According to Ramo, Beijing's overtures constitute an attempt to set up an alternative world order in opposition to the dominant 'Washington Consensus', an attempt which is meeting, according to Kavalski, with some success in the developing world.[626]

Third and last, China looks to establish trade agreements at a bilateral level with individual countries, generally seeking supplies of raw materials, fossil fuels and agricultural products in exchange for manufactured Chinese goods and investment, an exchange Kavalski calls 'infrastructure for resources'.[627] This aspect of Chinese policy has the aim of ensuring that the PRC obtains supplies of what it needs and lacks, i.e. natural gas, oil, iron ore, and so on, while the developing country gets roads, hospitals, factories, and other vital infrastructure. Kavalski outlines the example of the

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[623] Emilian Kavalski (ed.) (2009) *China and the Global Politics of Regionalization* (Farnham, UK: Ashgate Publishing) includes three chapters which together provide a good starting point for an exploration of the PRC's relations with the Middle East, Africa and Latin America. These are: Carrie Liu Currier and Manochehr Dorraj, 'Reconstructing the Silk Road in a New Era: China's Expanding Regional Influence in the Middle East'; Emilian Kavalski, 'Making a Region out of a Continent? China's Regionalization of Africa'; and Julie M. Bunck, 'China and Latin America: An Evolving Military Dynamic'.
[624] Joshua Kurlantzick (2007) *Charm Offensive: How China's Soft Power is Transforming the World*, New Haven: Yale University Press.
[625] Joshua Cooper Ramo (2004) *The Beijing Consensus*, London: The Foreign Policy Centre.
[626] Kavalski (2009), p. 178.
[627] Ibid., p. 186.

Democratic Republic of Congo, which provides copper and cobalt to the PRC in return for railways, highways, hospitals and universities.[628]

Thus, the three policies of non-interference, charm offensive and infrastructure for resources, taken together, are intended to gradually increase China's global soft power and access to supplies of natural resources that it lacks. The intended result, as far as Beijing is concerned, is to bolster the PRC's agenda of 'peaceful rise' by spreading its influence and access to resources as far and wide as possible.

The most complex of China's international relations take place, understandably, in its own back yard. Centuries of interactions ensure that the nations bordering or in close proximity to China treat the local dragon with a mixture of respect and mistrust. Vietnam, for instance, has long fought to maintain its independence in the face of Chinese pressures and incursions[629], and continues today to dispute ownership of the Spratly Islands in the South China Sea, as do Malaysia and the Philippines.[630]

Claims of increasing Chinese militarisation in South-East Asia also frequently muddy the diplomatic waters. In the last half century this has usually mostly affected the Taiwan Straits, but there are emerging signs that others in the region are also becoming wary of Beijing's increasing military might.[631] Nor is there is much love lost between India and China either, owing to persistent disputes over their shared Himalayan border, India's sheltering of the exiled Dalai Lama, and China's long-term alliance with Pakistan.[632] Chinese management of the sources of the major rivers that flow down into India from the Tibetan plateau is also an area of potential conflict. The latter is an issue that also affects Cambodia, Myanmar, Laos, Vietnam and Thailand, all of which are heavily dependent on water courses (such as the Salween and Mekong rivers) originating in Chinese territory, and are thus potentially affected by Chinese dam-building projects. These projects, intended to ease China's energy supply problems via

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[628] Ibid., p. 187.
[629] Kang (2007), p. 145.
[630] Ibid., pp. 136-7.
[631] Shambaugh (2013), p. 102.
[632] Ibid., pp. 103-4.

production of hydropower, have now been commenced according to the 12th Chinese five-year plan (2011).[633]

Even these issues seem relatively simple, however, when compared to China's complex relations with its neighbours to the north and east. For instance, despite some degree of warming in the 1950s, Sino-Russian relations have rarely been as rosy as US Cold War hawks appeared to believe, going through regular periods of tension and 'down' cycles such as the one that began in 1960 and ended in 1983.[634] This is largely a consequence of Russia's acquisition in 1860 of large tracts of territory previously under Chinese control – the price for Russia persuading the British and French armies to leave Beijing – including the vital Far Eastern port of Vladivostok.[635]

Still more contentious are relations with Japan: elderly Chinese still remember with bitterness the often brutal Japanese occupation of China between 1930 and 1945, and Chinese television regularly broadcasts dramatizations of the Chinese struggle against the Japanese.[636] The lingering mistrust between China and Japan is also still felt at intervals in public reaction and media coverage of events in the nationalistic dispute over the Diaoyu (Senkaku) Islands[637]

The Korean peninsula, ethnically homogeneous but divided since 1945 into North and South, also presents complex problems for Beijing. How, for example, to handle its supposed allies in Pyongyang, when they fail to follow the Chinese example of modernisation and economic opening, and instead pursue a dangerous game of nuclear brinkmanship with the US? The PRC's increasing trade with South Korea ensures that any notion of lingering communist brotherhood has become irrelevant.[638]

Lastly here, Taiwan presents a uniquely Chinese set of issues, given that its government and the majority of its inhabitants are ethnic Han Chinese, many of them descendants of Chiang Kai-Shek's Kuomintang who fled mainland China in 1949 after their defeat by

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[633] See *The Tibetan Plateau Blog*, March 26, 2013, '2013 Update: Dams on the Drichu (Yangtze), Zachu (Mekong) and Gyalmo Ngulchu (Salween) rivers on the Tibetan Plateau', available at: tibetanplateau.blogspot.cz/2013/03/2013-update-dams-on-drichu-yangtze.html, (accessed July 17, 2013).
[634] Shambaugh (2013), p. 79.
[635] Kissinger (2011), pp. 33-4.
[636] My personal observation of prime-time Chinese television output during the years 2008-10 revealed a high incidence of 'Anti-Japanese War' dramatizations on Chinese television channels.
[637] Daniela Stockmann (2011) 'What Kind of Information Does the Public Demand? Getting the News During the 2005 Anti-Japanese Protests', in Shirk (ed.), provides a detailed case study of one such event.
[638] Shambaugh (2013), pp. 100-1.

Mao's CCP.[639] The facts that Chiang took with him not only a large amount of Chinese national treasure[640] but also the Chinese seat on the UN Security Council clearly still rankles with mainlanders today, and means that Taiwan cannot be officially recognised as an independent nation by the international community of nations. However, the possibility of the PLA invading Taiwan and ousting its democratically-elected government, once seemingly imminent, now appears to be less likely with each passing year, as Sino-Taiwanese trade ties become ever closer and more intertwined.[641]

Overall, then, as far as China's international relations are concerned, the question of prime importance appears to be which of two scenarios is going to play out: will a more powerful Beijing (if one should emerge) constitute a 'China threat' with a militarised presence in East Asia and beyond, or will China's development be a 'peaceful rise'? Attempting to answer this question is one for the next chapter, since it begins to deal with scenarios of the future; but the basic historical facts underlying the appearance of the question as a major geopolitical issue of our time have been outlined in this section and the other parts of this chapter.

We can now sum up the various aspects of China's international politics as follows:

❖ The Confucian philosophy of *tianxia* ('all under heaven') presents a uniquely Chinese approach to international relations, in which negotiation, strategy and compromise (rather than the historically Western preference for confrontation, argumentation and conflict) are utilised as a first-choice option.

❖ The notion of 'peaceful rise' (based on *tianxia* philosophy) represents a viable theoretical alternative to Western conceptions of 'China threat' in analysing China's development as a major global actor, although it is at present not altogether clear which label provides the better description.

❖ Historically, China was restricted to being a regional actor in East Asia and the Asia-Pacific, but has now, through exports and trade, become a highly significant actor in all regions of the world, although still clearly most influential in its East Asian backyard.

❖ In its relations with individual states Beijing generally pursues a policy of establishing bilateral trade agreements while not interfering in issues of national

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[639] Spence (1990), pp. 509-10.
[640] Ibid., p. 510.
[641] Kang (2007), pp. 96-7.

sovereignty – offering a direct challenge (the so-called 'Beijing Consensus') to the Western agenda or 'Washington Consensus' of promoting liberal democracy and free trade.

4.3   Identifying major trends (past and present)

This section, corresponding to Step 2 in Figure 3 ('Identify major trends'), will concisely summarise the main points discussed in this chapter concerning China's historical development and present condition. This analysis is then to be taken forward into the next chapter to be worked into the construction of scenarios of China's future. So let us consider the main trends in China's historically-framed culture and society, science, economy, environment, and domestic and international politics, trying to draw out the common threads that link them all.

Perhaps the most significant factor in China's sociocultural development up to the present is the fact, as Lucian Pye, Martin Jacques, Zhang Weiwei, and others point out, that it has a long and continuous identity as a civilisation-state.[642] This means, for example, that some socio-political and psycho-cultural constructs of ancient times such as the Confucian concepts of *tianxia* ('all under heaven') and *tianming* (the 'mandate of heaven') arguably continue to have important influence in contemporary Chinese society and politics. Even given that the hypothesis of an unchanging continuity of psycho-cultural memes originating thousands of years ago is always going to be difficult to prove, there is little doubt that the recent revival of Confucian ideas is having renewed influence on Chinese public life, academia and government.[643] An additional point is that the long-term continuity of Han Chinese civilisation, longer than any other still extant today, potentially gives it a cohesive long-term socio-political strength and resilience possibly lacking in states with shorter histories and less social cohesion such as the United States.[644]

Also important politically and economically is the recognition that China was for many centuries the dominant power in East Asia, losing this position definitively only in the

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[642] See Pye (1985), Jacques (2009) and Zhang (2012).
[643] Bell (2008).
[644] Zhang (2012).

mid-nineteenth century. Up to this point China had possessed a larger share of global GDP (according to scholarly estimates) than any other world power. Thus it needs to be understood that China's present rise is, in reality, an attempt to re-establish its old position after a century-long blip, rather than a new phenomenon. The Chinese are psycho-culturally accustomed to being a dominant and central power, and it therefore feels to them like a natural progression to steadily resume this position of influence in world affairs. Given China's vast population and geographical size, if the nation can remain unified it is therefore to be expected that it will exert considerable influence on future world events and development.

Key to this process of China's rise and development is therefore the ruling Chinese Communist Party and its juggling act, particularly in the potentially volatile domestic sphere (historically prone to uprisings). Its ability or inability to maintain control of a unified China is clearly vital, as many commentators have pointed out, to the nation's future development. If it should, as it continues to juggle economic growth, environmental concerns, popular dissent, and so on, drop one or more of the balls, then the whole act could come crashing to the ground, throwing China into chaos or uncertainty. This, then, becomes one of the key issues for the following section, which deals with identifying key uncertainties (Step 3 in Figure 3).

In terms of the other main conclusions of the sections presented in this chapter, the following appear to be the major trends. In science, the PRC has made great strides forward in the last few decades, and has initiated ambitious long-term plans to modernise China and turn it into a scientific world leader by around 2050.[645] China's environment is at present in a very bad state due to rapid industrialisation, but, according to Smil, this may well be a phase similar to those experienced by earlier developing countries during their industrialisation processes: this suggests that it is still possible to turn the situation round given the judicious use of science and technology.[646] After three decades of growth, China's economy is still expanding at a rate around 8 per cent per annum, but appears fragile and prone to bubbles and crashes, and is at any rate likely to stagnate or decline around 2025-2030 when the

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[645] Further evidence (if any were needed) of China's long-term commitment to modernisation through scientific development is provided by the recent visit of Chinese President Xi Jinping to the University of the Chinese Academy of Sciences to inspect the new Beijing Electron Position Collider. See 'Xi urges development through scientific innovation', People's Daily Online, July 18, 2013, available at: http://english.people.com.cn/90785/8330886.html, (accessed July 18, 2013).

[646] Smil (2004), pp. 212-5 and pp. 60-68.

demographic time-bomb goes off.[647] The PRC's domestic politics, as already stated, is dependent at present on the CCP's ability to hold onto power and maintain social and economic stability, something which it has so far managed despite often severe turbulence such as the Tiananmen Square incident in 1989. And at the level of international politics, China has set a course of non-interference in the affairs of sovereign states which contrasts markedly from the agenda promoted by the US and the EU of encouraging countries to adopt liberal democracy and free market reforms, and presents a clear challenge to the Western conceptualisation of globalisation.[648]

Overall, the key trends can be summarised as follows:

- ❖ China's economy has expanded rapidly since 1978
- ❖ China has an authoritarian, one-party system
- ❖ China has a long history as a civilisation-state
- ❖ China has a wide range of domestic problems which threaten to destabilise the country
- ❖ China's environment has been badly affected by industrialisation
- ❖ China is attempting scientific, technological and infrastructural development on a grand scale
- ❖ Internationally, China's 'Beijing consensus' policies are markedly different from the West's 'Washington consensus'.

All in all, the overall picture presented here is complex and contains a number of areas of obvious uncertainty connected to these major trends going forward to the middle of the present century. The following section will examine these in more detail with a view to establishing the key uncertainties to be accounted for by the scenarios to be constructed in the next chapter.

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[647] Shirk (2007), p. 20.
[648] Ramo (2004).

4.4 Identifying key uncertainties (into the future)

According to the analysis conducted in this chapter, the key uncertainties concerning China's future lie in the nature and complex interaction of its politics (domestic and international), economics, environment, scientific development, society and culture. Including all of these aspects of China's development in a historically-framed analysis is, as we have seen, vitally important for establishing an understanding of where China is headed, and allows us to separate things that are known from things that are not.

The most concise way of presenting the key uncertainties (Step 3 in Figure 3) concerning China's future, in all its various aspects, is to present them as a set of questions. These will then form the starting point for the examination and typology of expert forecasts to be conducted in the next chapter. The forecasts can then be categorised for the purposes of scenario construction on the basis of the answers they give to the questions here presented.

Thus, the key uncertainties concerning China's future, based on the analysis conducted in this chapter, can be represented by the following questions related to the individual areas of analysis:

- ❖ <u>In the political sphere</u>: can the CCP maintain control and stability in the domestic sphere, given the extent of socio-economic pressures coming from the peasant grassroots and the growing middle class?
- ❖ <u>In the economic sphere</u>: can economic growth be maintained in the face of environmental threats and the demographic time-bomb set to go off around 2025-2030?
- ❖ <u>In the scientific and environmental spheres</u>: can scientific progress construct a greener future for China, or will severe environmental problems lead to the collapse of the PRC?
- ❖ <u>In the sphere of international politics</u>: in the event of the PRC continuing its development towards becoming a regional and global powerhouse, which version of the future China is more probable, 'peaceful rise' or 'China threat'? In other words, what kind of superpower will China be, in the event it becomes one?
- ❖ <u>In the socio-cultural and socio-political spheres</u>: what will be the end result of China's challenge to Western ideals of global liberal democracy and free market

economics?   Will the 'Beijing consensus' win out over the 'Washington consensus'?

❖ <u>In terms of the impact of China's rise on the long-term historical development of mankind</u>: will the Chinese civilisation-state and its alternative vision of geopolitics come to dominate the future world order in the medium- to long-term, replacing the present Western-dominated global power structure?

4.5   Conclusion and summary

The historically-framed analysis conducted in this chapter in the areas of socio-cultural development, science, the environment, economics and politics at the domestic and international levels has permitted a presentation of the key trends and uncertainties (Steps 2 and 3 in Figure 3, Part 2 in Figure 4) concerning China's future in the two sections immediately preceding this one. On the basis of these we can now continue to the next step in the scenario construction process, i.e. Steps 4, 5 and 6 in Figure 3 ('Construct scenario themes', 'Check for consistency and plausibility', and 'Develop final scenarios'). These were restated as Parts 3 and 4 in Figure 4 ('Typology of expert China forecasts post-2000' and 'Attempt at scenario construction based on Parts 1-3'). These, then, are the analytical tasks to be dealt with in the next chapter.

Chapter 5: TYPOLOGY OF EXPERT FORECASTS AND DEVELOPMENT OF FINAL 'LEARNING' SCENARIOS

5.1   Introduction: constructing scenario themes

This chapter will continue the scenario construction process designed in Chapter 2 by working through Steps 4, 5 and 6 in Figure 3 ('Construct scenario themes', 'Check for consistency and plausibility', and 'Develop final scenarios').   These Steps were reconfigured as Parts 3 and 4 in Figure 4 ('Typology of expert China forecasts post-2000' and 'Attempt at scenario construction based on Parts 1-3').   Completing the scenario construction process in this chapter will thereby pave the way for an analysis of the success or otherwise of the entire process of constructing scenarios of China's future conducted in this thesis (as well as suggestions for further research in this area on the basis of this study's findings) in the final chapter that follows this one ('Conclusion').

The task of this introduction is therefore to proceed with Step 4 in Figure 3: to construct themes for the scenarios to be developed in this chapter on the basis of a typology of post-2000 expert forecasts concerning China's future.   At the same time, there is a need here to make clear the justification for choosing these particular themes and not others, as well as the criteria upon the basis of which the forecasts are to be assigned to one category or another.

In a sense there is a danger here of putting the cart before the horse, in that attempting to construct the themes before examining the expert forecasts in detail means presaging the categories into which they will fall, prior to the actual analysis. On the other hand, a firm basis for constructing themes has already been established in the previous chapter: by establishing the key trends and uncertainties regarding China's future up to about 2050, the previous chapter has presented a very clear picture of the range of issues and alternatives facing China as it attempts to grow its economy and modernise. Furthermore, recalling the conclusion reached in the Methodology chapter that it is best – for reasons of informative scope and utility – to construct 3 or 4 scenarios lends methodological clarity to the task of transforming the established range of alternative futures into scenario themes.

The task here, then, is to identify 3 or 4 scenario themes based on the analysis in the previous chapter, which revealed the range of economic, environmental, scientific, socio-cultural and political challenges facing China within the framework of its long-term historical development. These challenges, when summarised in terms of the trends and uncertainties outlined at the end of the chapter, point in the direction of two obvious possibilities for China's future. These two alternatives, which can be broadly characterised as 'rise' and 'fall' scenario themes, are identified by most previous attempts at scenario construction of China's future.[649] According to this future-orientated dichotomy, China either continues to rise to become a major global power or collapses in on itself due to one or a combination of the environmental, economic, political and social problems discussed in the previous chapter. Almost all attempts in the China future literature at constructing scenarios of China's future contain 'rise' and 'fall' scenarios, some of them even including several 'fall' or several 'rise' alternatives.[650]

A scenario theme dichotomy of this type at first glance suggests a fork into the future containing only two scenario themes for developing the typology of expert forecasts; but further reflection reveals that 'rise' and 'fall' are likely to be extremes at the end of a spectrum or continuum. A third, intermediate theme therefore needs to be considered in order to account for the 'grey', middle area within this spectrum, one that might be termed 'stagnation' or 'stalling': this equates to a scenario where China does not absolutely rise or fall, but ends up stuck on a plateau in between, neither continuing to rise nor entering a state of collapse for an extended period of time, i.e. potentially continuing for some decades towards 2050.

If there be any doubt about the need for a 'stagnation' theme for the scenarios, the historical example of the stagnation of Japan's economy since the early 1990s, when it had previously appeared to be inexorably rising, should remove it. The incorrect forwards extrapolation of Japanese economic growth figures from the 1970s and 1980s

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[649] Among the many attempts to construct scenarios of China's future which encompass 'rise' and 'fall' scenarios are those in the following texts (which is in no way intended to be an exhaustive list): Broadfoot and Enright (2008); Cheng Li (2007) 'China in the Year 2020: Three Political Scenarios', *Asia Policy*, No. 4; Dan Blumenthal and Philip Swagel (2012) *An Awkward Embrace: The United States and China in the 21st Century*, Washington, D.C.: The AEI Press (summarised by Swagel at: http://www.econbrowser.com/archives/2012/11/guest_contribut_28.html, (accessed July 15, 2013); Anthony Saich (2005) 'Political Change in China', *US-China Relations* (Aspen Institute), Vol. 20, No. 3, pp. 25-29; and Richard Baum (1996) 'China after Deng: Ten Scenarios in Search of a Reality, *China Quarterly*, March 1996, pp. 153-175.

[650] Most notably, from among the scenario construction exercises cited in the previous note, Broadfoot and Enright include a 'scenario tree' with 16 variations on 'rise' and 'fall' scenarios, while Saich includes four 'fall' scenarios among six options.

(caused by the failure to recognise that the demographic factors of a low birth-rate and an aging population would cause growth to slow) led some analysts to predict at the time that Japan would become a global superpower and rival of the USA.[651] The resulting mistaken forecast of continuing rapid Japanese economic growth led the authors of one book to predict a coming war between Japan and the United States that has not materialised, an expectation which appears ridiculous in hindsight.[652] As has since been well documented, Japan instead entered upon an extended period of economic stagnation, albeit after achieving the level of a highly developed nation, which has thus far lasted for approximately two decades and, despite some prognostications to the contrary, still has no end in sight.[653] Since the demographic causes of Japan's slowdown appear to be similar to those (analysed in the previous chapter) facing the PRC around 2025-2030, consideration of a 'stagnation' scenario theme would seem to be sensible.

Thus it seems that the correct number of themes for the scenarios of China's future would be three: 'rise', 'fall' and 'stagnate'. This would appear at first sight to cover the full spectrum of possibilities; and indeed in a sense it does. However, a reconsideration of these three categories reveals that there is the possibility of a degree of latitude within each one. For example, within the 'stagnate' category there could be room for forecasts of slow economic growth or gradual economic decline as well as zero growth. The 'fall' category could include anything from complete environmental collapse and famine, to a prolonged economic slump, to the ouster of the CCP amid political anarchy. Thus there needs to be some precision about how to distinguish, for instance, 'fall' from 'stagnate' in the expert forecasts: in other words, the range or continuum within each category needs to be specified.

This problem of the range of forecasts within a category is particularly acute within the 'rise' end of the spectrum. This is so because even a cursory glance at expert works on China's future reveals intense disagreement among analysts about the fundamental

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[651] Morgan Housel (2011) 'The 3 biggest predictions about the economy that never came true', *The Motley Fool*, September 13, 2011, available at: http://www.dailyfinance.com/2011/09/13/the-3-biggest-predictions-about-the-economy-that-n/, (accessed July 15, 2013), includes a list of failed 1980s predictions that Japan would "take over the globe" by luminaries such as former MIT dean Lester Thurow and former Reagan official Clyde Prestowitz.

[652] See Friedman and LeBard (1991).

[653] For more on the causes underlying Japan's extended stagnation, see W.R. Garside (2012) *Japan's Great Stagnation: Forging Ahead, Falling Behind*, Cheltenham, UK: Edward Elgar Publishing, or Michael M. Hutchison and Frank Westermann (eds.) (2006) *Japan's Great Stagnation: Financial and Monetary Policy Lessons for Advanced Economies*, Cambridge, Massachusetts: The MIT Press.

nature of China's rise even among those who believe that China will continue to rise (a consensus view apparently held by most scholars of IR and international politics at the time of writing this thesis). Thus while the doubters concerning China's ability to maintain its rise trajectory can be placed into either the 'fall' or 'stagnate' groups, those claiming that China will become a world superpower would, as it stands, have to be placed in a single basket. Given the sheer volume of books, journal articles and newspaper column inches devoted to analysis of the phenomenon of China's rise since the year 2000, many of them attempting to establish what kind of global power or superpower China might become, one category would seem to be too few to encompass the complete range of views. A glance back at the summary section of the international politics section in the preceding chapter reveals, for instance, that there is a sharp divide between those who see China rising peacefully to the status of a global power without the need for armed conflict (according to *tianxia* philosophy), and those who see a militarising China as a threat to the stability of the existing global order. This equates, to a great extent (although, as we shall see in the course of this chapter, with some important provisos), to the distinction in academic balance of power theory between 'status quo' and 'revisionist' powers which is now being applied by some IR scholars to China's rise as they attempt to analyse it.[654] In this dichotomy, 'Peaceful rise' could be equated with China being a 'status quo' power whose aim is to participate in the existing international system rather than change it, while 'China threat' would be connected to China as a 'revisionist' power attempting to alter the international order to suit its own needs.

Thus it would appear that a division of the 'rise' category into two parts, by categorising expert forecasts as belonging in either a 'Peaceful rise' or 'China threat' grouping, could be a suitable, useful and interesting way of dividing the forecasts, given that some of the most intense debate of the last decade, at least in the US, appears to revolve around arguments for and against these two versions of China's future. This would mean that the maximum number of scenarios (four) would not be exceeded, but would leave space for both China rise sceptics and backers to be placed in either of two groups: the China rise sceptics would be divided into the categories of 'fall' and 'stagnate', while the China rise backers would be divided into 'Peaceful rise' and 'China threat' groupings. Of

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[654] For an excellent introductory analysis to this debate see Barry Buzan (2010) 'China in International Society: Is 'Peaceful Rise' Possible?, *Chinese Journal of International Politics*, Vol. 3, No. 1, pp. 5-36.

course, if it should turn out that there are forecasts that do not easily fit into either of these two themes, or that these two themes do not match the forecasts well (for example, if it should turn out that the 'status quo' and 'revisionist' categorisations are not good matches for 'Peaceful rise' and 'China threat'), then there would be a need to revise the typology: such revision, if needed, can in fact be encompassed in a dedicated section immediately following the typology, to be entitled 'Analysis of typology to assess suitability for the purposes of scenario construction'.

Having established the tentative themes for the typology, the methodology and criteria for placing forecasts into particular categories need to be established. Given the expectation that the expert forecasts will cover the full spectrum of possibilities from calamitous collapse to Chinese global hegemony, it may be anticipated that a spectrum of opinion could also exist within each category. It is thus necessary here to establish each category's boundaries so that there is no confusion concerning their application.

The boundaries can be set as follows. To be placed into the 'fall' category a forecast will have to fulfil the following criterion: it must predict a definite deterioration in one or more of the main areas (especially China's economy, environment and socio-politics) addressed in the previous chapter, resulting in a worsening of China's international position in relation to other global powers. To belong to the 'stagnate' group, a forecast should predict a levelling-off of China's growth owing to the negative factors outlined in the preceding chapter, but not a definitive collapse: in these forecasts China would fail to continue rising to a position of true global pre-eminence, but at the same time would not fall back to its previous lowly position. Regarding the two 'rise' themes, the key issue is to decide whether the forecast perceives China as presenting a hard power (i.e. military) challenge to the USA's global hegemony and the status quo order created by the Western powers or not. To clarify this point, the criterion by which the 'rise' forecasts are to be divided is according to whether the author sees China's rise to global prominence resulting in a major military confrontation by 2050 (including the possibility of a Cold War-type standoff), or as occurring, like Japan's and South Korea's post-war development, without producing a large-scale conflict by this date. The distinction between forecasts of global peace or war by 2050 in the wake of China's predicted rise, then, will be the sole criterion for categorising the 'rise' forecasts. Other distinctions between forecasts, such as differences of interpretation concerning the full

connotations of the terms 'Peaceful rise' and 'China threat', will be dealt with in the sections with those headings.

It is also necessary here to finalise the titles of the scenario theme categories into which the expert forecasts are to be divided. These can remain as already stated above, except that the word 'fall' – a rather vague and unsatisfactory term which also has the disadvantage of being connected with historical empires such as the Roman, rather than with modern nation-states – should be replaced with the more suitable 'collapse', which has the advantage of including non-political aspects of decline such as market crashes or environmental catastrophes. Thus the four categories for the typology are: 'China collapse', 'China stagnates', 'Peaceful rise' and 'China threat'. The success or otherwise of the use of these categories will be assessed in the section following the typology.

5.2   Selection of the 'panel' of experts

Having established the scenario theme categories and their boundaries, the next step is to move on to the selection of the experts whose forecasts are to be analysed for inclusion in the typology. Recalling that the intention here (as explained in the methodology chapter) is to use the insight of the Delphi method concerning the use of a panel of experts who do not consult directly with each other[655], it is essential to decide how to construct an equivalent 'panel' from expert-authored texts written about China's future post-2000. In other words, the task here is to select a representative sample of expert texts on China's future, identify what forecasts they are making (if any), and then to attempt to place these forecasts in the typology. Selecting a sample of expert forecasts is clearly preferable methodologically to trying to analyse an excessively large number of expert forecasts, in that it allows us to focus on a specific set of texts rather than getting swamped by what Smil aptly terms the "ceaseless stream of outlooks and predictions and scenarios"[656] continually being produced by analysts of China's present and future. At any rate, the selection of a 'panel of experts' is entailed by the methodological process, however arbitrary or unsatisfactory the 'panel' and its conclusions may ultimately turn out to be.

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[655] See Rescher (1998), p. 92 for a full explanation of the Delphi method.
[656] Smil (2004), p. 212.

A point to be emphasised here is that it would simply not be possible – or even desirable – to attempt to be exhaustive by trying to include every expert text concerning China's future made post-2000. The main reason for this limitation is simple: there have been so many of them in the English language alone (setting aside the impossibility of reading all the texts in other languages) that trying to identify all of them is impossible without the use of a dedicated database (which was not available during the researching of this thesis). However, it should readily be seen that any attempt to be exhaustive in accounting for every China forecast made post-2000 is in itself without value in the scenario construction process. As the methodology chapter of this thesis demonstrated, no quantitative or qualitative methodology has been demonstrated to generate reliably accurate representations of the future. This implies that any attempt to quantify the forecasts – for instance by counting how many belong in each category – is irrelevant to the present task of scenario construction, which itself is not a quantitative research method. Knowing how many experts have predicted x or y reveals little that is useful, for example, about the real-world probability of that particular forecast being realised, as Philip Tetlock's research reveals.[657] The best that can be achieved is to study a good-sized sample of expert-authored texts containing a representative range of opinion, and to attempt to place them into the four categories already constructed (or to exclude them). It should be noted that although assessing probability is entailed by the original Delphi method, it is most definitely *not* (as explained in the methodology chapter) an aspect of scenario construction (hence the necessity to use a typology of expert forecasts rather than the Delphi method in the scenario construction process). It therefore does not lie within the scope of this thesis to attempt any assessment of the probability of any given scenario occurring.

It may be helpful here to base the process of establishing a 'panel' on an actual example of the use of a panel (for Delphi forecasting) found in the literature on China's present and future. A very apposite past attempt to predict China's future via the views of a panel has been assessed by Smil.[658] This past attempt, which included the views of Smil himself as a member of the panel, took place between November 1974 and March 1975, and utilised of a panel of 20 experts. Although the results of this attempt were in retrospect, as Smil is quick to admit, somewhat mixed, mainly due to "the biasing effect

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[657] See Tetlock (2005).
[658] Smil (2004), pp. 211-2.

of recent events, perhaps the most common weakness found in long-range forecasts"[659], he demonstrates that the panel "did a surprisingly good job"[660] in terms of forecasting a high probability of a radical change in China's development (which is what in fact happened after Deng Xiaoping assumed power in 1978-9). To gauge the degree of the success of this 1974-5 attempt at Delphi-style forecasting (which took place before Mao's death and in the latter stages of the disastrous Cultural Revolution, during which Chinese society was in chaos), it is worth quoting Smil in full here[661]:

> In quantifying probabilities of important events that might take place in China between 1975 and 2000, the group assigned the highest value (median and mode of 75 per cent) to new "revisionism", that is to a major departure from the Maoist course:
>
>> participants felt that although some aspects of the Maoist period might be retained, the evolution of a more stable society is all but inevitable due to the industrialization of the country, mechanization and modernization (e.g. fertilizers) of her agriculture, growing urbanization, greater contacts with the world, the increasing importance of scientific research, and the necessity of long-range planning and complex management.
>>
>> (Smil 1977: 480)
>
> On the other hand, we correctly saw very low probabilities (all modal values below 10 per cent) of not just Sino-Soviet and Sino-Indian war, and a new Great Leap Forward, but also of the collapse of the Communist government and reappearance of regional fragmentation.[662]

On the other hand, Smil admits that

> most importantly, the group consensus did not foresee (in spite of all the relics of Maoism in today's China) either the speed or the sweep of post-1978 reforms. We have taken these developments increasingly for granted, but they still appear astonishing when seen from the 1975 perspective.[663]

Thus, the 1974-5 attempt at Delphi method forecasting of China's future, although it produced mixed results, was successful enough to suggest that the use of a panel-based approach is not altogether without merit, and that two lessons can immediately be

[659] Ibid., p. 212.
[660] Ibid., p. 211.
[661] The quotation that follows includes a quotation from Smil's (1977) 'China's future: A Delphi forecast', *Futures* 9: 474–489.
[662] Smil (2004), p. 211.
[663] Ibid., p. 212.

drawn from it for the attempt to be made here. The first of these is the need to select a sample of expert-authored texts on China's future of at least equivalent size to the 1974-5 panel. In other words, the panel to be considered in the typology should ideally consist of at least 20 experts in order to access a sufficiently wide range of opinion. The second lesson to draw is that the 1974-5 panel appears to have been (perhaps of necessity) made up entirely of Western experts on China. Thus, in the 'panel' to be established for this study's typology, this can be remedied by including a sizeable proportion of non-Western experts. Among these should certainly be a reasonable number of Chinese and other Asian experts on China's development.

The next step here is therefore to establish the identities of the members of the expert 'panel'. These experts should have a varied range of backgrounds, nationalities and areas of expertise. First, however, it is necessary to establish what exactly is meant by an 'expert'. This is particularly important in the light of Philip Tetlock's research into political expertise, summarised in his 2005 book *Expert Political Judgment*, which, as we saw in the methodology chapter of this thesis, casts doubt on the ability of political scientists to make statistically accurate predictions.[664] For the purposes of the selection process, an 'expert' shall be deemed to be a scholar or other professional (such as a journalist, diplomat, government official, or independent author) who has studied the phenomenon of China's recent rise and has formed a considered opinion concerning China's future which s/he is able to support with substantial evidence and detailed argument, taking account of the phenomenon's complexity and attempting to forecast on that basis. This means that the expert should have published a significant work or body of work connected with empirical and/or theoretical aspects of China's development and be professionally committed in some way to understanding China's future.

After careful consideration based on the criteria established in the preceding paragraph, a list of 30 authors to be considered for the typology of scenario themes has been drawn up. This list is given in Table 1.

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[664] See Tetlock (2005) and the methodology chapter.

'Panel' of experts (in alphabetical order, by surname)
Robert J. Art, Barry Buzan, Gordon Chang, Elizabeth Economy, Feng Huiyun, George Friedman, Bill Gertz, Bruce Gilley, Stefan Halper, Will Hutton, G. John Ikenberry, Martin Jacques, James Kynge, Henry Kissinger, David Kang, John Mearsheimer, Constantine Menges, Minxin Pei, Qin Yaqing, David Shambaugh, Susan L. Shirk, Vaclav Smil, Wang Gungwu, Jonathan Watts, Yan Xuetong, Carl Walter & Fraser Howie, Zhang Weiwei, Zhao Tingyang, Zheng Bijian, Zhu Feng

Table 1: The selected 'panel' of experts on China's past, present and future development

The list of experts given in Table 1 could be divided into many alternative sets of categories, which would result in much fruitless debate; for this reason no attempt has been made to categorise them. However, it should be apparent that there is a wide range of backgrounds, areas of expertise and nationalities in the 'panel'. Those listed include a number of international relations scholars (these understandably constitute more than half of the 'panel') of Western, Asian and expatriate Asian backgrounds, as well as former government officials such as Henry Kissinger, Zheng Bijian and Constantine Menges, journalists or ex-journalists such as Bill Gertz, Gordon Chang, Jonathan Watts, James Kynge and Martin Jacques, experts on China's economy such as Carl Walter and Fraser Howie, and an expert on China's environment (Vaclav Smil). Sincere and rigorous effort has been made to search what might be termed the 'China rise' literature as comprehensively as possible, and to study a wide range of expert China texts, making sure in particular to include prominent scholars and specialists known to be researching the phenomenon of China's rise; but the selection of which experts to include will necessarily be somewhat subjective, as well as dependent on the limitations inherent in the research process, such as time, access to texts, awareness of journal publications, and so on. These limitations, and the well-known impossibility of achieving 'objectivity' in a qualitative piece of research, mean that some experts and their texts may be emphasised over others in the typology – for example, if a particular text seems to convey a point especially clearly, or with unusual theoretical rigour – and

that if there are several experts making more-or-less the same forecast (particularly if these are made by authors following in the wake of an earlier, more innovative thinker) all but the one that is adjudged (and this judgement inevitably must have a subjective aspect) to be the most significant may be glossed over briefly.

5.3 Criteria for assessing expert forecasts

Having established the 'panel of experts', the next step is to establish the criteria for assessing an author's forecast and placing it into – or excluding it from – one of the four scenario themes in the typology. There are two such criteria, which will be laid out in the following paragraphs.

Firstly, and most importantly, each expert should have a sufficiently clear and consistent position on China's future which is capable of being designated a forecast. To this end it is necessary to explain the method for defining the precise forecast (or lack of it) made by an expert. This is necessary because on close examination many printed works on China's future (understandably) contain a substantial element of hedging, meaning that it is not always easy to assess whether a definite prediction is being made. To solve this methodological problem, the categorisation process will take the author's concluding statements (in an article) or concluding chapter (of a book) as representative of the author's final forecast if it is not clear from the entire work. If even the conclusion should contain hedging which makes it clear that the expert is not fully committed to a specific viewpoint then the text will be excluded from the analysis. The decision whether to exclude the forecast or not will depend on a close reading (content analysis) of the text. Experts whose position on China's future seems to vary from publication to publication or who tend to hedge in a fox-like manner rather than commit to a particular, definite and clear viewpoint will, for instance, be excluded from the scenario themes in the typology, since their positions cannot be established with the certainty needed for commitment to a specific category. The analysis of expert texts will thus contain an inevitable element of subjectivity, but will be conducted with the honest intention of being as faithful to the overall thrust of an author's argument as possible in assigning each forecast to a category, or excluding it from the typology altogether, as seems appropriate.

The second criterion is that experts whose analyses or forecasts cover only one aspect of China's future – for example, the future state of its environment, its politics, or its economics – must also be excluded from the typology. What this scenario construction process is aiming for is to develop scenarios which encompass the *whole* of China's future, with its various complexly interconnected aspects included, and not just pieces of it. Thus, analyses by experts who focus on China's environment only, on China's economy only, or on the future of China's political system only, without taking account of other aspects of China's development, will not be included in the typology.

Before continuing to the typology itself, it is important to re-emphasise that it is not necessary for the purposes of this typology to examine every aspect of a specific expert's argument or text. The part of the text which outlines a specific forecast is enough for the purposes of scenario construction, which, lest it be forgotten, an exercise in creating clearly-framed alternative narratives of the future, *not* in critiquing individual mistakes of analysis or the nuances of argument. Thus there will be no attempt in the typology to conduct a detailed critical examination of each expert's argument, because there is neither need nor space for this. In fact, critical analysis of supporting argumentation does not belong in the typology, but in the later section entitled 'Check for consistency and plausibility: re-evaluation of the typology with reference to key trends and uncertainties'. For this reason the reader should await that section for a critical comparison of the scenario themes in the typology with the analysis of China's culture, society, politics, economics, environment and scientific development conducted in the previous chapter. The issue of greatest importance for the coherence of the typology is to assign the expert forecasts – such as they may turn out to be, once they have been winnowed down – to a category, in order to arrive at clearly-defined final scenarios based on a range of expert opinion that is representative of the present state of research into the phenomenon of China's development and global impact.

5.4   The typology of forecasts: an overview

This typology will consist of a content analysis of a range of expert forecasts concerning China's future and an attempt to categorise them into four themes: 'China collapse', 'China stagnates', 'China threat' and 'Peaceful rise'. In terms of the content analysis, the

forecast in a given text must be categorical enough to enable it to be placed into one of the four themes. In many cases it is anticipated that the conclusion of a given text will supply some categorical statements regarding the author's expectations for China's future, usually in the form of a sentence or paragraph clearly defining the author's position. Any text of which a careful reading does not supply such a categorically clear forecast will be discounted from the analysis or placed into the 'China stagnates' category, depending on the overall argumentation.

As previously stated, the categorisation of texts is not intended to be exhaustive. It is sufficient for the purposes of scenario construction if even one forecast can be discovered which clearly states the scenario theme and can therefore be placed into that category. As explained in the methodology chapter and the opening section of this chapter, the scenario construction process is not an attempt to quantify probabilities or quantities of forecasts, but to encompass a range of scientifically interesting, informative and distinct possibilities. This means, to reiterate Shoemaker's seminal analysis, that the scenario themes should be "archetypal", meaning that "they should describe generically different futures rather than variations on one theme", and should also "cover a wide range of possibilities and highlight competing perspectives … while focusing on interlinkages and the internal logic within each future."[665] This will enable the themes developed in this typology to be developed into final 'learning' scenarios which can be utilised as a basis for further research into China's future. That this is likely to make the themes 'hedgehog-like' rather than 'fox-like' (in Philip Tetlock's conception)[666], and therefore that the typology is likely to be based on the forecasts of hedgehog-type experts rather than fox-type experts is consequently inevitable; but this, it is to be understood, is in the nature of the scenario construction process, which aims to create a set of clear, coherent narrative pictures of the future rather than a nuanced and cautious scholarly text.

Let us then continue to the typology itself. Each of the sections within the typology will take the form of a qualitative examination (based on the methodology and criteria outlined in the introduction to this chapter) of a text or texts written by one or more of the experts from the 'panel', with the aim of establishing whether the expert has made a clear and definite statement about China's future which can be designated a 'true'

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[665] Shoemaker (1995), p. 30.
[666] See Tetlock (2005).

forecast belonging to the relevant category. Within each section the work of individual experts, selected according to the subjective impression that they 'fit' the given scenario theme, will be content analysed to decide whether their work in fact contains a forecast which belongs in the category under consideration. If, after careful analysis, they do *not* in fact appear to belong in the category under consideration, a qualitative decision will be made to exclude them from that category. After the four sections corresponding to the four scenario themes within the typology there will be a fifth section dealing with experts from the 'panel' who have not yet been assigned to a category, to see whether they belong in one of them or whether they should be excluded altogether. Progressing in this way it is hoped that a final typology of 'real' forecasts which have been assigned to scenario themes will be obtained.

5.41 'China collapse' forecasts

There appear to be relatively few experts writing in English post-2000 who predict total collapse or a considerable decline in China's fortunes going forward. This is understandable given the PRC's unexpected post-Tiananmen resilience and the failure of numerous post-1989 predictions of the collapse of the PRC. The relative lack of experts backing a 'China collapse' scenario, however, should not mean that the possibility of China collapsing into chaos or disorder should be ignored or discounted. The lessons of history – for example, the outbreak of the First World War, or 9/11, or the events of 1989 in CEE and in China itself – confirm that Taleb's theory of 'black swans'[667] – unexpected but history-altering events – needs to be taken very seriously when studying possible future outcomes.

Careful scrutiny of the texts written by the 'panel' of experts listed in Table 1 reveals that there appear to be two analysts in particular who have written texts unequivocally predicting the imminent collapse of China, and who, moreover, have stuck to this prediction in subsequent articles and interviews over a number of years and up to the present. These are Gordon G. Chang, author of *The Coming Collapse of China*[668], and George Friedman, founder of the influential Stratfor global intelligence agency and

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[667] See Taleb (2008) and the Methodology chapter of this thesis.
[668] Chang (2002).

author of *The Next 100 Years: A Forecast for the 21st Century*[669] (which includes a chapter on China, plus a prediction of global trends including China's impact on the future). Both of these authors base their forecasts on what they see as the fragile basis of China's economic growth.

Taking Friedman's views first, the head of Stratfor (who has reiterated his view that China will collapse since at least 1991)[670] constructs three scenarios for China's future, but unmistakably favours the one resulting in fragmentation of the PRC and a chaotic, weakened China:

> A very real future for China in 2020 is its old nightmare — a country divided among competing regional leaders, foreign powers taking advantage of the situation to create regions where they can define economic rules to their advantage, and a central government trying to hold it all together but failing. A second possibility is a neo- Maoist China, centralized at the cost of economic progress. As always, the least likely scenario is the continuation of the current situation indefinitely.[671]

He expands on his favoured collapse scenario as follows:

> ... under the stress of an economic downturn, China fragments along traditional regional lines, while the central government weakens and becomes less powerful. Traditionally, this is a more plausible scenario in China — and one that will benefit the wealthier classes as well as foreign investors. It will leave China in the position it was in prior to Mao, with regional competition and perhaps even conflict and a central government struggling to maintain control. If we accept the fact that China's economy will have to undergo a readjustment at some point, and that this will generate serious tension, as it would in any country, then this ... outcome fits most closely with reality and with Chinese history.[672]

Friedman has been consistent for more than two decades in predicting the collapse of the PRC, since this was the position presented in his 1991 co-authored book, *The Coming War with Japan*.[673] Thus, setting aside for the moment the failure of the central forecast contained in that book, his view that China will collapse economically and descend into a weakened state of decentralised anarchy (which is maintained throughout *The Next 100 Years*, as well as in many other prognostications by the

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[669] George Friedman (2009) *The Next 100 Years: A Forecast for the 21st Century*, New York: Doubleday.
[670] See Friedman and LeBard (1991).
[671] Ibid., p. 100.
[672] Ibid., pp. 98-9.
[673] Friedman and LeBard (1991).

Stratfor agency[674]) clearly fulfils the consistency criterion presented in the introduction to this chapter and fits into this category of the typology.

Gordon Chang's book, first published in 2001 and updated in 2002, in one place in the text predicted the collapse of the PRC by about 2006:

China's financial status looks precarious ... Beijing has about five years to put things right. No government, not even China's, can defy the laws of gravity forever.[675]

Many other passages, chiefly those in the Foreword and in the Foreword to the Updated Edition, unequivocally predict collapse. For example:

Any one of these factors – weak treasury, WTO accession, political transition, September 11 – would be difficult for China to take. Add them all together, and we can see why the regime will fail. Scholars dismiss talk of China's collapse as they downplay one concern or another. The point is that China faces many challenges all at once, not one challenge at a time.

All these trends leave China at the 'tipping point' ... China will 'tip' when something, and probably just an inconsequential event, goes wrong. In some small village or large town, events will become out of control.[676]

Chang ominously concludes that

A half-decade ago the leaders of the People's Republic had real choices. Today they do not. They have no exit. They have run out of time.[677]

Although Chang's forecast that the PRC would by now have collapsed into chaos has clearly not been realised, his prognostications of imminent disaster continue via articles and television interviews.[678]

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[674] One recent one was entitled 'The Island of China', April 23, 2013, Stratfor website, available at: www.stratfor.com/blog/island-china, (accessed July 10, 2013), and summarises the prevailing Stratfor prediction concerning China's future thus: "Despite technological advancement and unprecedented economic growth, Beijing has not yet escaped this historical pattern of central control devolving into chaos."

[675] Chang (2002), p. xxvii.

[676] Ibid., p. xvii.

[677] Ibid., p. xxiii.

[678] Chang is a regular columnist for *Forbes* magazine, and so writes regularly on China there: many of his pieces are available at www.forbes.com/sites/gordonchang/. There are many examples of Chang prognosticating on TV news channels in the form of internet video clips. One such took place on January 19, 2011 on Fox News, and is available at: www.youtube.com/watch?v=RnebmMiNi-0, (accessed July 10, 2013).

Thus it can be seen that Friedman and Chang's predictions run along very similar lines: political collapse caused by economic failure, leading to the downfall of the PRC as a united entity, and a period of chaos similar to that in the 1920s and 1930s when central government control collapsed. This means that the 'China collapse' scenario already at this early stage has a very clear and consistent narrative, as derived from the detailed arguments of these two authors.

In terms of the analysis of this scenario theme, at this point it only remains to state that although Friedman and Chang can both be accused of over-bold and inaccurate past forecasting – Friedman in forecasting a war between Japan and the USA which has not occurred[679], and Chang in forecasting the collapse of the PRC by about 2006 as a consequence of pressures resulting from WTO membership [680] – in terms of the scenario construction process being followed for the purposes of this typology such past errors of judgement (or even an overall record of poor judgement) are irrelevant. The 'China collapse' scenario, despite thus far failing to materialise, remains both a coherent narrative and a plausible black swan in China's potential future regardless of what Philip Tetlock would regard as the hedgehog-like over-confidence and poor forecasting record of those who continue to back it in public.[681]

5.42 'China stagnates' forecasts

In the 'China stagnates' category there is, as David Shambaugh points out, one expert who dominates the scene with his "sophisticated and detailed study".[682] This is Minxin Pei, author of *China's Trapped Transition: The Limits of Developmental Autocracy*.[683] Shambaugh shows that Pei's analysis is "unique", in that it points to a form of "stagnation amid predation" by the ruling CCP. [684] This viewpoint is somewhat surprisingly, relatively uncommon among China analysts (although some, such as

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[679] See Friedman and LeBard (1991).
[680] Chang (2002), p. xvi.
[681] See Tetlock (2005) and the Methodology chapter for more on hedgehog-style forecasting.
[682] Shambaugh (2008), p. 30.
[683] Minxin Pei (2006) *China's Trapped Transition: The Limits of Developmental Autocracy*, Cambridge, Massachusetts: Harvard University Press.
[684] Shambaugh (2008), p. 31.

Anthony Saich,[685] include stagnation as one among a set of possible scenarios), but is shared, according to Shambaugh, by some other expatriate Chinese who are also "pessimistic about China's political condition and future."[686] Although this pessimism may be interpreted as stemming from bitterness and "disaffection with the Chinese Communist regime"[687], this does nothing to rule out Pei's view as a future alternative.

Pei's thesis describes a future for China in which the CCP holds onto power for an extended period of years, but at the expense of dynamism in the society and economy. This stagnation, he explains, will be caused by two main factors, one political and the other economic. Political stagnation will come as the result of the CCP having to defend its hold on power, while an economic slowdown will come as corruption and rent-seeking behaviour among CCP officials at a local level cause the PRC's previous breakneck speed of development to grind to a halt. These two linked factors will produce a 'trapped transition', whereby Deng Xiaoping's economic reforms are not supported by what Pei sees as the requisite accompanying political reforms. This, Pei believes, will result in "a drag on development"[688] and a stagnant future China that neither collapses (a scenario which he judges to be possible but far less likely than his prediction of prolonged stagnation) nor fulfils its potential for economic and social growth.

Pei's forecast of a trapped transition into which China will gradually descend because of lack of political reform is supported by book-length analysis of corruption among CCP cadres and other rent-seeking behaviours which, he claims, will severely retard Chinese development when combined with Beijing's on-going efforts to suppress anti-regime dissent and protest. His thesis thus takes account of the complexity of political, social and economic factors involved in producing China's future in order to present, as Shambaugh indicates, a sophisticated scenario of stagnation.

Although there are other experts on the 'panel' who are pessimistic about the PRC being able to maintain its present rate of economic growth (e.g. Walter and Howie[689]) or who

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[685] See Saich (2005).

[686] Shambaugh (2008), p. 31, where three supporters of Pei's thesis are named: Shaoguang Wang, An Chen and He Qinglian.

[687] Idem.

[688] Shambaugh (2008), p. 30.

[689] See Walter and Howie (2011).

see elements of political stagnation (e.g. Shambaugh[690]), none of them produces as parsimoniously constructed a thesis of China's future that includes political, economic, social and developmental stagnation as Pei's. Shambaugh, for instance, despite the fact that he sees China as a 'partial power' in his 2013 book[691] on China's development, does not actually commit to a forecast, while Walter and Howie primarily discuss financial and economic weaknesses in their expectation of a Chinese slowdown or collapse, and do not therefore meet the criterion requiring assimilation of a broader range of factors.[692] Susan Shirk sees China as a 'fragile superpower' due to a range of destabilising factors (mainly internal problems), but does not commit to a specific forecast of China's future beyond her excellent analysis of these limitations and issues.[693] Be all this as it may, the fact that the clear coherence of Pei's forecast more-or-less stands alone in this category does not detract from the fact that it presents a very coherent, concise and easily comprehensible picture of China's future which fits the second theme in this typology.

It is, however, important to note that since the publication of *China's Trapped Transition* Pei's position seems to have shifted from the deep stagnation which he describes in the book towards the 'collapse' scenario outlined in the previous section. Envisioning the collapse of the PRC as a politically discrete entity, at least, is what he leans towards in at least one recent publication.[694] Such a change of mind (or at least a deepening of the author's pessimistic viewpoint) would seem to disqualify Pei from being placed in the present (or any other) category, according to the consistency criterion introduced in the introduction to this chapter, and would mean that the 'China stagnates' scenario would be unsupported by any specific expert forecast.

Thus, considering dropping the 'China stagnates' scenario (or combining it with the 'China collapse' one) would appear to be a real possibility for the remainder of the scenario construction process. If a pessimist on China's future like Pei tends to drift from 'stagnation' to 'collapse' as if moving along a continuum within one category, then perhaps there is no need to retain the 'grey area' between 'rise' and 'fall', but instead to

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[690] See Shambaugh (2008).
[691] Shambaugh (2013).
[692] Walter and Howie (2011).
[693] Shirk (2007).
[694] Namely Pei's May 7, 2013 article for *The Diplomat* entitled 'Asia's real challenge: China's "Potemkin" rise' (available at: http://thediplomat.com/2013/05/07/asias-real-challenge-chinas-potemkin-rise/, accessed July 15, 2013), which is very gloomy about China's prospects of continuing stability on economic, political and environmental grounds.

compress 'stagnate' and 'collapse'. On the other hand, if Pei's picture of a 'trapped transition' can be said to constitute a scenario archetype, then there is an argument for retaining it among the final scenarios despite its lack of expert support. The question of dropping the 'China stagnates' scenario will be considered later in the chapter, when checking the typology and the plausibility of the scenario themes.

At this point it only remains to remind the reader of the power of scenario archetypes for the political imagination, even when debate has moved on and the author of the scenario has changed his/her mind, through a specific example: that of Francis Fukuyama's 'End of history' scenario.[695] The original article in which this scenario was introduced, which was written in 1989 at the end of the Cold War and envisaged the inevitable international triumph of liberal democracy, as well as the later book expanding on the original thesis, are still regularly cited despite the fact that the author now seems to have drastically altered his position.[696] Fukuyama's change of mind, allied with the continuing popularity of his original idea (if only as a straw man to knock down) suggest that an archetypal scenario could still be useful for envisaging a possible future even if no longer supported by the expert who introduced it. In the case of the 'China stagnates' scenario this would mean that it could be retained in this project even if Pei has moved on, particularly given that he appears to have altered his position only in the sense that his pessimism concerning China's future has deepened, not in terms of refuting the central idea in the book which formed the basis of his forecast. So the question of whether to retain the 'China stagnates' scenario will, as stated above, be discussed in full and settled in a later part of this chapter once all the scenario themes in the typology have been assembled.

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[695] Francis Fukuyama (1989) 'The End of History?', *The National Interest*, Summer 1989. This article was later expanded into a 1992 book entitled *The End of History and the Last Man* (The Free Press).

[696] In his (2011) book, *The Origins of Political Order: From Prehuman Times to the French Revolution* (Farrar, Straus and Giroux), Fukuyama discusses the failure in the last several decades of many countries to transition fully to democracy, becoming, as he puts it, stuck in a "'gray zone', where they [a]re neither fully authoritarian nor meaningfully democratic" (p. 4).

5.43 'China threat' forecasts

It should first be noted here that the history of 'China threat' forecasts goes back to before this typology's cut-off point of the year 2000. Denny Roy points out that the *idea* that "an increasingly powerful China" would soon "give China the basis for world-class military and technological capability", thus making it a danger to regional and global stability, "became highly topical as China's economy posted exceptional growth in the early 1990s".[697] Thus, the 'China threat' scenario has its origins in the post-Cold War years of the early 1990s: this is the period when CEE countries threw off communism, the Soviet Union collapsed, and, in addition, Japan's economic growth began to stall. The events of 1989 to about 1994 – i.e. the sudden disappearance of the Soviet Union as a political and military competitor to the US, as well as the gradual decline of Japan as an economic competitor – allied with the PRC's continuing economic growth amid resistance to political change, produced the impression in Washington and elsewhere that China was going to challenge the USA's regional (in the Asia-Pacific sphere) and global military hegemony.[698]

However, as stated in the introduction to this chapter and elsewhere, the typology at present being conducted is based on a 'panel' of expert forecasts made *after* the year 2000. This means that a detailed analysis of the origins of the 'China threat' scenario and the analyses of those who backed it before 2000 is beyond the scope of the present section in the typology. Therefore the analysis here will move directly to an attempt to pick out post-2000 expert forecasts made by members of the 'panel' which fall unequivocally into the 'China threat' category.

Careful perusal of texts written by the 'panel' members, with the aim of identifying those who warn against what they see as an emerging 'China threat' scenario – in which China's rise inevitably leads it to overturn the existing status quo world order by force – reveals that two head the field in terms of their clarity and insistence on this specific course of events. These are the journalist Bill Gertz and the IR scholar John Mearsheimer.

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[697] Denny Roy (1996) 'The "China threat" issue: major arguments', *Asian Survey*, Vol. 36, No. 8, 758-771, p. 758.

[698] See Roy (1996) for more detail on the history of the 'China threat' argument, which Roy claims was "alarmist" and "was based (sometimes explicitly, sometimes not) on antipathy towards the Chinese Communist Party (CCP) regime that has deep roots" (p. 758).

Beginning with Mearsheimer, the opening words of his 2006 *Current History* article, 'China's unpeaceful rise', set the tone for this scenario theme:

> Can China rise peacefully? My answer is no. If China continues its impressive economic growth over the next few decades, the United States and China are likely to engage in an intense security competition with considerable potential for war.[699]

The concluding paragraph of his 2010 article in *The Chinese Journal of International Politics* provides a similarly gloomy view of a future in which China rises to challenge the US' global hegemony:

> The picture I have painted of what is likely to happen if China continues its impressive economic growth is not a pretty one. Indeed, it is downright depressing. I wish that I could tell a more optimistic story about the prospects for peace in the Asia-Pacific region. But the fact is that international politics is a nasty and dangerous business and no amount of good will can ameliorate the intense security competition that sets in when an aspiring hegemon appears in Eurasia. And there is little doubt that there is one on the horizon.[700]

An earlier article in *The Australian* entitled 'The rise of China will not be peaceful at all'[701] completes the picture of a consistently held position derived from detailed scholarly study of the phenomenon of China's rise as it connects to IR theory and conveyed over a period of some years and in several publications.[702] Mearsheimer's pessimistic prognostication of an inevitably arriving military challenge to the US and the status quo is the view of a diehard realist who views international relations in terms of billiard ball states acting to protect and promote their national interests within a Hobbesian anarchic global structure of war against all.

Bill Gertz is a long-time national security columnist for *The Washington Times* and author of *The China Threat: How the People's Republic Targets America*, first published in 2000, then updated in 2002. As in the case of Mearsheimer, his argument

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[699] John J. Mearsheimer (2006) 'China's unpeaceful rise', *Current History*, April 2006, 160-2, p. 160.

[700] John J. Mearsheimer (2010) 'The Gathering Storm: China's Challenge to US Power in Asia', *The Chinese Journal of International Politics*, Vol. 3, 2010, 381–396, p. 396.

[701] John Mearsheimer (2005) 'The rise of China will not be peaceful at all', *The Australian*, November 18, 2005.

[702] One proviso here is that of the three publications analysed for this typology, only one, *The Chinese Journal of International Relations*, is peer reviewed. Nevertheless, the status of the other two publications, a national newspaper (*The Australian*) and the USA's oldest dedicated publication on world affairs (*Current History*), allied with Mearsheimer's well-received scholarly work on offensive realism, most notably in Mearsheimer (2001) *The Tragedy of Great Power Politics*, New York: W.W. Norton, means that the author's views on the phenomenon of China's rise in connection with his influential IR theory can be considered 'expert' for the purposes of the present typology.

that China represents a direct military threat to the United States – and to world peace – is consistent and unmistakeable. Here is that argument in a nutshell from the conclusion to *The China Threat*:

> The People's Republic of China is the most serious national security threat the United States faces at present and will remain so for the foreseeable future. This grave strategic threat includes the disruption of vital U.S. interests in the Pacific region and even the possibility of a nuclear war that could cost millions of American lives … China's hard-eyed communist rulers have set out on a coolly pragmatic course of strategic deception that masks their true goals: undermining the United States around the world and raising China to a position of dominant international political and military power. They seek to push the United States out of the vital Pacific region and achieve virtual Chinese hegemony in Asia. In a world growing more interdependent by the hour, Chinese ambitions cannot be shrugged off.[703]

Since 2002, Gertz has maintained his unequivocal 'China threat' position through a long series of articles in The Washington Times. For example, two of the most recent of these columns, entitled 'Inside the Ring: China breaks sanctions' (June 26, 2013) and 'China confirms nuclear deal with Pakistan' (March 26, 2013), both deal with the PRC's alleged build-up of military forces, technology, systems and alliances against the United States.[704] Thus Gertz's position that China represents a steadily growing military threat has been maintained with total consistency through a long series of publications from 2000 to the present.

Apart from Mearsheimer and Gertz, there have been others who have supported the 'China threat' hypothesis, but none of them fulfil all the criteria outlined in the introduction to this chapter for inclusion in this typology. For example, Constantine Menges, who worked for the CIA as intelligence officer for Latin America from 1981 to 1983, and for Ronald Reagan as a special advisor on Latin America from 1983 to 1986, posthumously published a book entitled *China: The Gathering Threat* in 2005 (he died in 2004).[705] This supports Gertz's thesis of China as a military threat to the USA and

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[703] Gertz (2002), p. 199.

[704] See Bill Gertz (2013) 'Inside the Ring: China breaks sanctions', *The Washington Times*, June 26, 2013, available at: http://www.washingtontimes.com/news/2013/jun/26/inside-the-ring-china-breaks-sanctions/?page=all#pagebreak, (accessed July 21, 2013), and Bill Gertz (2013) 'China confirms nuclear deal with Pakistan', *The Washington Times*, March 26, 2013, available at: http://www.washingtontimes.com/news/2013/mar/26/china-confirms-nuclear-deal-pakistan/?page=all#page break, (accessed July 21, 2013).

[705] Constantine Menges (2005) *China: The Gathering Threat*, Nashville, Tennessee: Nelson Current.

the global status quo (the foreword is even written by Gertz). However, since Menges was not professionally committed to the study of China long-term, he cannot be considered an expert on China for the purposes of this typology. At any rate, Menges' book merely repeats and supports the thesis of Gertz's book, so adds little that is novel.

Another example of an author who could be seen as leaning towards the 'China threat' scenario is Stefan Halper, Director of American Studies at the Department of Politics, University of Cambridge, and author in 2010 of *The Beijing Consensus: How China's Authoritarian Model Will Dominate the Twenty-First Century*.[706] However, Halper does not fulfil all the criteria for inclusion in this section of the typology because his ideas about China, although inclusive of a discussion of 'China threat' scenarios and a global shift in power away from the US and towards China, are nuanced concerning possible future outcomes. In other words, he does not commit anywhere in his text (or elsewhere[707]) to a clear and sustained forecast concerning China's future that could be construed as 'China threat'. In fact, in a 2010 *Foreign Policy* article he opined that "China's goal is not to challenge the West militarily or even economically just now."[708] Thus it appears that his ideas are not at all a clear fit for the 'China threat' scenario theme (nor, indeed, any other theme), and that he too must be omitted from the typology.

In short, the post-2000 'China threat' scenario theme has two chief exponents, John Mearsheimer and Bill Gertz. Their visions of a steadily militarising PRC becoming a threat to the US and the existing global order are consistent over a period of time and are placed within a framework of dedicated study of the effect of China's rise on the global status quo. This means that the 'China threat' scenario theme is both fully coherent and firmly rooted in expert forecasts, and can be taken forward to the next stage of the scenario construction process.

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[706] Stefan Halper (2010) *The Beijing Consensus: How China's Authoritarian Model Will Dominate the Twenty-First Century*, New York: Basic Books.
[707] Stefan Halper (2010) 'Beijing's coalition of the willing', *Foreign Policy*, July/August 2010, available at: http://www.foreignpolicy.com/articles/2010/06/21/beijings_coalition_of_the_willing, (accessed July 22, 2013).
[708] Idem.

5.44 'Peaceful rise' forecasts

If 'China threat' forecasts can be said to have originated in the early 1990s as a reaction in Washington and the US to China's economic growth in a post-Cold War world order in which the Soviet Union had collapsed, Japan's economy had begun to stall, and the USA was the sole remaining superpower, the origin of 'Peaceful rise' forecasts can be pinpointed even more precisely. The phrase, in both its Chinese (和平崛起, *heping jueqi*) and English forms, as well as the idea of 'peaceful rise' can, according to David Shambaugh[709], be traced back to speeches made by Zheng Bijian, then the vice president of the Central Party School in Beijing and a leading CCP think tank member, between 2002 and 2005, with the most impact arising from one made at the Boao Forum for Asia on November 3rd, 2003.[710] The term was subsequently taken up by President Hu Jintao and Prime Minister Wen Jiabao, but by 2005 had been consciously dropped in favour of the more-or-less synonymous (but apparently less challenging to the global status quo) terms 'peaceful development' (和平发展, *heping fazhan*) and 'harmonious world' (和谐世界, *hexie shijie*).[711]

Like 'China threat', then, 'Peaceful rise' as a forecast scenario owes its existence to reaction to China's rapid economic development. However, whereas 'China threat' forecasts emerged in direct response to the PRC's growth in a unipolar world dominated by the US, 'Peaceful rise' was born of Zheng's reaction to the "two main China theories he encountered on visits to the United States: the 'China Threat Theory' (中国威胁论, *zhongguo weixielun*) and the 'China Collapse Theory' (中国崩溃论, *zhongguo bengkuilun*)."[712] The subsequent widespread use of the term 'peaceful rise' in speeches and policy documents means that it is intrinsically and inevitably linked to official Chinese government policy regarding China's future development. This connection includes the official replacement of the word 'rise' with 'development' so as

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[709] Shambaugh (2013), pp. 218-9. For a fuller account of the developments in the Chinese government's use (and later non-use) of the 'peaceful rise' slogan, see Robert L. Suettinger (2004) 'The rise and descent of "peaceful rise"', *China Leadership Monitor*, No. 12, available at: http://media.hoover.org/sites/default/files/documents/clm12_rs.pdf, (accessed July 22, 2013).

[710] These speeches are available in English in two versions: Zheng Bijian (2005) *China's Peaceful Rise: Speeches of Zheng Bijian, 1997 to 2005*, Washington, D.C.: Brookings Institution Press; and Zheng Bijian (2011) *China's Road to Peaceful Rise: Observations on its cause, basis, connotations, and prospects*, Abingdon, UK: Routledge, Part V. The Routledge edition is perhaps better because it is chronological and more thorough in the selection of speeches.

[711] Shambaugh (2013), p. 219.

[712] Idem.

not to "contribute to existing alarm in the West about China's rise (which was already the standard term used in numerous 'China threat' publications)".[713]

Even though 'Peaceful rise' thus has connotations of official Chinese government policy rather than scholarly research, this does not undermine the possibility of using it as a scenario theme in this typology. In fact, the fact that it has been consciously set up in opposition to the 'China threat' and 'China collapse' scenario themes analysed in previous sections would suggest that this typology is on the right track: if 'China threat' and 'Peaceful rise', for instance, indeed exist in opposition to each other as rival theories of China's rise (albeit that one of them has been developed in the US and one in China), then categorising expert forecasts accordingly would seem to be entirely logical and sensible, regardless of the forecasts' origins.

Moving on, then, to the expert forecasts, it is clear that Zheng Bijian's vision, articulated in a number of speeches in Chinese and English[714], an interview in *New Perspectives Quarterly*[715], as well as one well-known *Foreign Affairs* article[716], makes him one of the experts whose vision of China's future should be considered in this category of the typology. On the other hand, there is a problem categorising Zheng's vision, insofar as it is difficult to classify his work as a true forecast when it represents official Chinese government policy. In this case his output, derived as it is from his work in official government think tanks, would seem to be more akin to policy-based agenda setting than true forecasting.

To assess whether Zheng's work can be included in this typology, it is necessary to do some more detailed analysis of its content. Let us take a passage from Zheng's Foreign Affairs article as representative of his view of China's rise:

> The Chinese government has set up targets for development for the next 50 years. This period is divided into three stages. In the first stage - 2000 to 2010 - total GDP is to be doubled. In the second stage, ending in 2020, total GDP is to be doubled again, at which point China's per capita GDP is expected to reach $3,000. In the third, from 2020 to 2050, China will continue to advance until it becomes a prosperous, democratic, and civilized socialist country. By that time, China will have shaken off underdevelopment and

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[713] Idem.

[714] The speeches in English have been collected as Zheng Bijian (2005) *China's Peaceful Rise: Speeches of Zheng Bijian, 1997 to 2005*, Washington, D.C.: Brookings Institution Press, and Zheng Bijian (2011).

[715] Zheng Bijian (2006) 'China's rise will be peaceful', *New Perspectives Quarterly*, Vol. 23, Issue 1, pp. 50-55.

[716] Zheng Bijian (2005) 'China's "peaceful rise" to great power status', *Foreign Affairs*, Vol. 84, Issue 5, pp. 18-24.

will be on a par with the middle rung of advanced nations. It can then claim to have succeeded in achieving a '"peaceful rise."[717]

It does not take much analysis to see that this paragraph reads more like a setting out of policy goals than a true forecast. Likewise the following paragraph, which concludes the article:

China does not seek hegemony or predominance in world affairs. It advocates a new international political and economic order, one that can be achieved through incremental reforms and the democratization of international relations. China's development depends on world peace-a peace that its development will in turn reinforce.[718]

It would therefore seem that it is better to exclude Zheng's publications from the typology on the grounds that they are akin to official Chinese policy documents rather than genuine forecasts. The necessity to reclassify Zheng's work in this way can in fact be confirmed with reference to what David Shambaugh calls the "'peaceful rise' saga"[719]: after several years of propagating 'peaceful rise' around the world, Zheng was "eased into retirement"[720] by the government on the grounds that the slogan was merely fuelling the 'China threat' thesis overseas.

Given the nature of the Chinese state apparatus, which includes universities, newspapers and other institutions which have greater independence in the West, it might be anticipated that separating genuine expert forecasts from policy propagation such as Zheng's could prove difficult in practice when considering China-based experts of Chinese ethnic origin. However, Suettinger notes that Zheng's extended attempt at 'peaceful rise' promotion on behalf of the Chinese state failed in part because "the theory itself did seem somewhat rushed and incomplete."[721] Thus it would seem that locating genuine 'Peaceful rise' themed forecasts might depend on tracking down expert observers who frame 'peaceful rise' within a coherent theoretical framework rather than merely repeating or propagating Chinese government slogans and policy without theoretical rigour or any attempt at scholarly objectivity. As noted in the preceding chapter's section on China's international politics, the first point at which the Chinese government's 'peaceful rise', 'peaceful development' and 'harmonious world' rhetoric

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[717] Zheng Bijian (2005) 'China's "peaceful rise" to great power status', *Foreign Affairs*, pp. 23-4.
[718] Ibid., p. 24.
[719] Shambaugh (2013), p. 362, n58.
[720] Ibid., p. 219.
[721] Suettinger (2004), p. 7.

began to be transformed into the beginnings of a properly rigorous scholarly theory was with the influential publication of the philosopher Zhao Tingyang's original Chinese language book on reconfigured *tianxia* theory in 2005.[722] This would suggest that examining the Chinese scholarly debate related to 'peaceful rise', subsequent to both Zheng's speeches and Zhao's book, with a view to linking it to the 'Peaceful rise' scenario theme here under analysis, may point to some expert forecasts which could meet the criteria for inclusion in this section of the typology.

Beginning with Zhao Tingyang himself, a perusal of his English language article, which summarises his reconception of *tianxia* theory, reveals that while it presents a coherent theoretical framework which can be indirectly linked to ideas of 'peaceful rise', 'peaceful development' and 'harmonious world', there is no attempt in it to forecast China's future.[723] Therefore Zhao can be immediately discounted from the typology.

Another who appears to be making a forecast of peaceful rise is Zhu Feng, Deputy Director of the Center for International and Strategic Studies (CISS) at the prestigious Peking University. The title of his 2008 book chapter, 'China's rise will be peaceful: how unipolarity matters'[724], suggests a direct prediction based on detailed argumentation. However, careful perusal of this article (as well as a 2012 discussion paper on a similar topic[725]) reveals that although the author supports the 'peaceful rise' hypothesis, there is no hard-and-fast forecast of the type suggested by the title, but instead detailed analysis of policy alternatives on both the Chinese and US sides that would lead to a future free of conflict. It is therefore necessary to exclude Zhu from the typology on the grounds that he is not attempting to make a 'true' forecast.

Feng Huiyun, an assistant professor of political science of Utah State University, has also argued that China's rise is not threatening in at least two major publications.[726] However, the main thrust of his "argument that Chinese strategic culture is defensive in

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[722] See Zhao (2006) for an English-language rendering of the main ideas in reconfigured *tianxia* theory.

[723] See Zhao (2006) 'Rethinking Empire'.

[724] Zhu Feng (2008) 'China's rise will be peaceful: how unipolarity matters', in Ross and Zhu (eds.).

[725] Zhu Feng (2012) 'The Kippenberger Lecture 2012: U.S. rebalancing in the Asia-Pacific: China's response and the future regional order', Discussion Paper No. 12, Victoria University of Wellington, New Zealand: Centre for Strategic Studies, available at: www.victoria.ac.nz/hppi/centres/strategic-studies/documents/DP12-12FullDocOnlineVersion.pdf, (accessed August 11, 2013).

[726] These are: Feng Huiyun (2007) *Chinese Strategic Culture and Foreign Policy Decision-Making: Confucianism, Leadership and War*, Abingdon, UK: Routledge; and Feng Huiyun (2009) 'Is China a Revisionist Power?', *Chinese Journal of International Politics*, Volume 2 (2009), pp. 313-334.

nature"[727] is to contradict Alastair Iain Johnston's 1995 hypothesis that Chinese strategic culture is offensive via a study of the historical and philosophical roots of Chinese strategic culture. He analyses the effects of this culture on China's leaders, who thence, according to Feng, "display a preference for peaceful strategies rather than aggressive ones".[728] Nowhere in these two works does he make a direct forecast of peaceful rise, since to do so is not a direct intention of his studies, and he can also therefore be eliminated from the typology.

A more direct attempt to position China's 'peaceful rise' within a rigorous theoretical framework is Qin Yaqing's 2010 article in *The Chinese Journal of International Politics* entitled 'International society as a process: institutions, identities, and China's peaceful rise'.[729] In this article Qin discusses the differences between Western and Chinese conceptions of international society. He claims that while Westerners, due to long cultural traditions stemming from the Greek reliance on logical reasoning based on contradiction, tend to view international society in terms of either/or dichotomies and fixed, static entities, the Chinese view international phenomena, like other social phenomena, in terms of their relational properties and dynamic processes of change.[730] Qin then seeks to position China's recent development into the process-oriented, social-constructivist-with-Chinese-characteristics theoretical framework he has constructed,[731] with a view to examining the nature of China's rise. His conclusion is that China's rise has been peaceful thus far because of the Chinese process-focused view of international affairs, and will continue to be so for the same reasons.

To understand the thought process underlying Qin's reasoning, it is worth quoting some passages from the conclusion to his article. He begins with a brief analysis of China's rise to date:

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[727] Feng Huiyun (2007), p. 2.
[728] Idem.
[729] Qin Yaqing (2010) 'International society as a process: institutions, identities, and China's peaceful rise', *The Chinese Journal of International Politics*, Vol. 3, pp. 129-153.
[730] Qin cites Nisbett (2003) as supporting evidence for his conception of differences in Western and East Asian cognitive styles. This book, written by a psychologist, is an examination of experimentally-proven differences between Western and Eastern psycho-cultural traits.
[731] For more on Qin's development of his process-oriented model see Qin Yaqing and Wei Ling (2008) 'Structures, Processes, and the Socialization of Power: East Asian Community-Building and the Rise of China', in Robert S. Ross and Zhu Feng (eds.) *China's Ascent: Power, Security, and the Future of International Politics*, Ithaca, New York: Cornell University Press.

It is three decades already since China took the policy of reform and opening up. It is generally acknowledged that it has so far taken a peaceful path in its rise. While there has been a lot of discussion on whether or not China would continue to rise peacefully, little has been done to examine the Chinese worldview or philosophical tradition to answer why it has been rising peacefully in the last three decades.[732]

From this foundation, Qin progresses to a refutation of Barry Buzan's categorisation of China as a 'reformist revisionist power':

... there are two different interpretations of China's rise. While Buzan sees it as extremely difficult, I predict that it will be possible and realizable, perhaps step by step, even though by no means easy. Buzan maps international actors into four discrete categories: status quo, revolutionary revisionist, orthodox revisionist and reformist revisionist. China is essentially a revisionist, a revisionist cannot be a status quo power, and it therefore will challenge international society, with violence if feasibly and possible. Furthermore, this 'reformist revisionist" identity decides that China would not accept the primary institutions or basic rules in the changed game. In Buzan's categorization, there is no dynamic for evolution from one identity to another.

My analysis is based more on the process approach, taking China's identity as moving along a processual complexity. The complementary dialectics enables one to understand that two opposites, two societies, and two identities are not necessarily confrontational and can be mutually transformable in the process of interaction. The overall tendency of the process pushes forward such transformation. The reform and opening up initiated thirty years ago enabled China to re-estimate this overall tendency of the political and socio-economic process as one of peace, development, and cooperation. China struggled over the threshold of membership of international society and has evolved in the last three decades from a revisionist to a detached and then to a status quo power. The identity shift, the institution selection, and the norm acceptance have all been peaceful, so has China's dealing with other actors in international society, bilateral or multilateral. It seems therefore that there is no adequate reason to believe that China will violently defy international society in terms of newly emerging institutions.[733]

Here we are left in no doubt that Qin's theoretical framework and analysis of China's rise leads him to the conclusion that China's future interactions with the international community will be peaceful, not violent. The only remaining question in terms of this

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[732] Qin (2010), p. 151.
[733] Ibid., pp. 152-3.

typology is whether the passages quoted here, based as they are in Qin's work in connecting IR theory and China's rise, constitute a genuine forecast according to the criteria laid out in the introduction to this chapter. That Qin does not communicate a forecast as directly as other experts studied in the typology does not automatically exclude him. However, the problem of deciding whether his text can be interpreted as a genuine forecast still needs to be resolved.

The last sentence in the latter passage appears to be the crucial one for deciding this matter. Qin's claim that "there is no adequate reason to believe that China will violently defy international society"[734], building upon his previous assertion that China's rise thus far has been one of peaceful evolution, implies that he is indeed predicting a continuation of peaceful rise. This can be confirmed with reference to his long-term work on developing a theoretical framework to overcome what he sees as the failure of Western IR theories to account for "[p]eace and cooperation in East Asia"[735], and to explain how "China's cooperative behavior … is defined by the intersubjectivity of East Asian nations, in which norms, identity, interests, and behavior are being shaped and reshaped in continuous interaction."[736] His assertion, in the conclusion to his co-authored 2008 article, that "more empirical facts will emerge and the explanatory power of the process-focused model will be further tested"[737] also implies that he is attributing clearly-defined predictive power to his own theoretical model. On that basis we can conclude here that Qin is forecasting 'Peaceful rise' as far as this typology is concerned, by applying what he sees as the predictive power of his theory directly to the rise of China.

Barry Buzan is another candidate for inclusion in the 'Peaceful rise' category. In his 2010 article in The Chinese Journal of International Politics, entitled 'China in international society: is "peaceful rise" possible?', he concludes that peaceful rise is indeed possible.[738] However, he does not commit to a more definite prediction and in fact states that China needs to re-evaluate its place within international society "if

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[734] Ibid., p. 153.
[735] Qin and Wei (2008), p. 119. For more on the failure of Western IR theory to account for East Asia, see Kang (2003).
[736] Ibid., pp. 136-7.
[737] Ibid., p. 138.
[738] Buzan (2010), p. 34.

peaceful rise is to succeed."[739] This means that Buzan must be excluded from this section of the typology.

Another author who might be seen to be forecasting 'Peaceful rise' is David Kang, who, as already discussed earlier in this thesis, has done a great deal of ground-breaking work in analysing the conditions for China's relatively peaceful behaviour on the international stage, as well as on the inadequacy of Western IR theories for explaining such behaviour.[740] However, in the conclusion to his 2007 book entitled *China Rising: Peace, Power and Order in East Asia*, Kang unequivocally rules himself out as far as forecasting is concerned thus:

> ... any prediction a generation into the future is mere speculation. How Chinese identity and power will develop is unknowable, and speculation is neither a satisfying nor interesting scholarly exercise. What might be Chinese goals and beliefs a generation from now is at best a wild guess — so much will change between now and then, within China itself, within the region, and around the globe.[741]

There is, therefore, no sense in discussing Kang any further as far as this typology is concerned.

Another prominent analyst of China's past, present and future development is Zhang Weiwei. Zhang is interesting for his attempt to apply Zhao Tingyang's *tianxia* theory to China's development, and for the influence his book has had in China in its original version (discussed in the international politics section of the previous chapter). Zhang summarises the argument of his book in the introduction:

> It [China's rise] is the rise of a civilizational state, a new model of development and a new political discourse.

> The world is thus witnessing a wave of change from a vertical world order, in which the West is above the rest in both wealth and ideas, to a more horizontal order, in which the rest, notably China, will be on a par with the West in both wealth and ideas. This is an unprecedented shift of economic and political gravity in human history, which will change the world forever.[742]

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[739] Ibid., p. 33.
[740] See Kang (2003), (2007), and (2010).
[741] Kang (2007), p. 202.
[742] Zhang (2012), p. 3.

He reiterates the main point of his book in the conclusion, thus:

> I have argued in this book that China's rise is not the rise of an ordinary country, but the rise of a country *sui generis*, a civilizational state, a new model of development and a new political discourse, and all this is bringing a wave of change unprecedented in human history.[743]

From these passages it seems that Zhang is certainly predicting China's rise and the transformation of the world as a result. However, it is not at all clear from these extracts what changes China's rise will bring. Nor is it clear how exactly the process of change to a more "horizontal" world order will take place. Further analysis of the remainder of the text does not clarify these issues with enough precision to place Zhang into the 'Peaceful rise' category: his argument that China will rise and transform the world is supported by a wide range of arguments, but none that would define his forecast as belonging in this category.

One last candidate for inclusion in this category is Martin Jacques, author of *When China Rules the World: The Rise of the Middle Kingdom and the End of the Western World* (2009). Like Zhang Weiwei, and as the title of his book demonstrates, Jacques is in no doubt that China *will* rise. However, there is nothing in his book to indicate that he believes that China's rise will be of a type that might be labelled 'peaceful'. He simply believes that China will probably become "*the* major global power"[744], ousting the US, Europe and the Western powers from their position of dominance, and this belief is situated at the centre of his argument. The following paragraph draws out the essence of his line of thought:

> I want to ponder what the world might be like in twenty, or even fifty, years' time. The future, of course, is unknowable but in this chapter I will try to tease out what it might look like. Such an approach is naturally speculative, resting on assumptions that might prove to be wrong. Most fundamentally of all, I am assuming that China's rise is not derailed. China's economic growth will certainly decline within the time-frame of two decades, perhaps one, let alone a much longer period. It is also likely that within any of the longer time-frames there will be profound political changes in China, perhaps involving either the end of Communist rule or a major metamorphosis in its character. None of these eventualities, however, would necessarily undermine the argument that

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[743] Ibid., p. 174.
[744] Jacques (2009), p. 363.

underpins this chapter, that China, with continuing economic growth (albeit at a reduced rate), is destined to become one of the two major global powers and ultimately *the* major global power. What would demolish it is if, for some reason, China implodes in a twenty-first-century version of the intermittent bouts of introspection and instability that have punctuated Chinese history. This does not seem likely, but, given that China's unity has been under siege for over half of its 2,000-year life, this eventuality certainly cannot be excluded.[745]

This passage demonstrates a little of the complexity of Jacques' argument in this very long book (over 500 pages), and also its nuanced nature. Jacques' fox-like consideration of various alternatives and conflicting evidence, allied with the lack of definite commitment to one specific forecast indicated in the second and third sentences of the above extract, would seem to exclude him from inclusion in the typology. Furthermore, as suspected, his view does not fit the 'Peaceful rise' category, just as it would not have belonged in the 'China threat' section preceding this one (and so Jacques can also be added to the list of authors to be excluded from that category too). His is a forecast of inexorable 'China rise'; but it does not attempt to give an unequivocal forecast of the *character* of that rise.

So we are left with Qin Yaqing's forecast, based on his theory of process-focused constructivism, as the sole candidate for a true 'Peaceful rise' expert forecast which fulfils the criteria set out in the introduction to this chapter. It is, of course, more than likely, given the Chinese government's official propagation of 'peaceful development' and 'harmonious world', that there are numerous 'Peaceful rise' bandwagoners among Chinese academics and authors at the present time. Nevertheless, these are unlikely to fulfil the requirements of an expert forecast in terms of this typology if they are promoting an official policy line rather than genuinely forecasting. Nor are they likely, at any rate, to add much of any value to Qin's theory-based prediction of 'Peaceful rise', which is sufficient on its own to complete this section of the typology.

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[745] Idem.

5.45 Analysis of the remaining experts

The typology thus far has analysed the work of nineteen members of the 'panel' of experts. This means that eleven have not yet been mentioned, for the simple reason that they do not appear to have written anything which would 'fit' the scenario theme categories. This section will therefore examine their work on China to decide if any of them have made a 'true' forecast which can, after all, be included in one of the scenario themes. At the same time, if it proves (as seems probable) that they do not fit the existing themes, the possibility of revising the themes will be considered during the discussion of individual experts' views.

Careful perusal of their works reveals that a number of the remaining eleven experts have made no attempt at a forecast, and must therefore, despite their detailed and nuanced discussion of China's past, present and future development, be excluded from the typology on these grounds. Two such are the journalists James Kynge, author of *China Shakes the World: The Rise of a Hungry Nation*, and Jonathan Watts, author of *When a Billion Chinese Jump: How China Will Save Mankind – Or Destroy It*.[746] Their books are mainly surveys of China's development based on source material researched by the authors, not attempts to forecast. Another who makes no attempt to predict is the renowned historian Wang Gungwu, who has worked extensively on China's historical development but does not appear to have produced anything resembling a 'true' forecast of the nation's future.[747] A fourth is Vaclav's Smil, whose decades of work on China's environment and long memory of failed predictions (including his own)[748] have caused him, as he states explicitly in the final chapter of his 2004 book, *China's Past, China's Future*, to be wary of making specific forecasts.[749]

Others appear also to be (understandably) wary of making specific forecasts. The renowned Chinese IR scholar Yan Xuetong states in a 2006 article that he "assumes that the prediction of international trends for the next 20 years will be very unreliable" and that one can do no better than "depict the possible power status that China may

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[746] See Kynge (2006) and Watts (2010).

[747] Analysis of Wang (2008) and a sampling of other texts on China's historical development such as his (2005) book chapter 'China and Southeast Asia', in David Shambaugh (ed.) *Power Shift: China and Asia's New Dynamics*, Berkeley: University of California Press, reveals no sign of a 'true' forecast of China's future.

[748] See Smil (2004), pp. 207-8, 210-2.

[749] Ibid., p. 212.

achieve".[750] Such statements can obviously be taken to imply that he is declining to commit to a specific forecast. This is also the case of Henry Kissinger, whose epilogue to his magisterial book *On China* discusses competition between the US and China and the need for 'co-evolution' to avert the possibility of war, but does not include a definite prediction that would fit the scenario themes in this typology.[751] Will Hutton, on the other hand, draws up a list of problems for China and limitations to the nation's development as he points vaguely towards "the possibility, if not probability, of an economic and political convulsion"[752] and "the change that must come"[753] in the conclusion to his *The Writing on the Wall: China and the West in the 21st Century*, but makes no 'true' prediction of collapse or anything else in the course of weighing up several possible outcomes.

Two others can be taken together, because both expect change to China's regime in the form of an emerging democratic challenge and, ultimately, democratization. These are Elizabeth C. Economy, author of *The River Runs Black: The Environmental Challenge to China's Future* and Director for Asia Studies at the Council on Foreign Relations, and Bruce Gilley, author of *China's Democratic Future: How It Will Happen and Where It Will Lead*.[754] In the case of Economy, neither in her book nor in subsequent publications[755] does she commit to a 'true' forecast of China's future, despite pointing towards what she sees as the need for and probability of democratic change. She is also mainly focussed on the connection between environmental and political issues in China, so fails to meet the typology's criterion of including economic and other factors in her analysis. Gilley, on the other hand, directly predicts a change to a democratic future based on an analysis of what he believes to be "the crisis of the communist state"[756], which he predicts will lead inevitably to the subsequent removal of the CCP from power

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[750] Yan Xuetong (2006) 'The Rise of China and its Power Status', *Chinese Journal of International Politics*, Vol. 1 (2006), 5-33, p. 32.

[751] See Kissinger (2011), 'Epilogue'.

[752] Hutton (2007), p. 334.

[753] Ibid., p. 335.

[754] See Economy (2004) and Gilley (2004).

[755] See for example her 2013 article, 'China's environmental future: the power of the people', *McKinsey Quarterly*, June 2013, available at: www.mckinsey.com/insights/asia-pacific/chinas_environmental_future_the_power_of_the_people, (accessed August 11, 2013), or her 2012 article, 'Sino-US: one step back, two steps forward', *Boao Review*, November 28, 2012, available at: www.boaoreview.com/comparison/2012/1128/106.html, (accessed August 11, 2013).

[756] Gilley (2004), p. x.

by a democratic movement, resulting in "China's embrace of democracy".[757] In the final paragraph of his book he claims categorically that

> There is simply no compelling argument that China will be a great exception to the nearly-worldwide movement of social emancipation from "sclerotic authoritarianism" that we now call democratization. The specific nature of the crisis through which it will be delivered to popular rule cannot be predicted or perhaps even imagined. The inevitability of such a transition, however, seems plain.[758]

Gilley's forecast, although it commits fully to one specific future outcome, does not appear to fit any of the scenario themes. Both Economy and Gilley can therefore be excluded from the typology as it stands, although their views will certainly need to be reconsidered in the next section, particularly Gilley's, on the grounds that his book constitutes a 'true' forecast based on a detailed (book-length) analysis of a range of factors.

Last of all we have G. John Ikenberry of Princeton University and the Woodrow Wilson School of Public and International Affairs, and Robert J. Art of Brandeis University and MIT. These two are interesting in that, in a series of publications[759], they both expect China's rise to continue while pointing towards China being absorbed into the existing global system, probably (but not certainly) peacefully, but do not appear to make any attempt to commit to a specific forecast which would fit one of the two 'rise' themes in this typology. This might, on the one hand, suggest a case for compressing the two scenario themes into one, but on the other hand this would only serve (as discussed earlier in this chapter at length) to impoverish the typology. Thus it seems better to exclude Ikenberry and Art from the typology, while bearing in mind their support for a more generalised – or, as Philip Tetlock might designate it, 'fox-like' – 'rise' scenario in which the global order is somehow adapted or altered to absorb a newly-powerful China.

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[757] Ibid., p. 243.

[758] Ibid., p. 251.

[759] See G. John Ikenberry (2008) 'The Rise of China: Power, Institutions and the Western Order', in Ross and Zhu (eds.), G. John Ikenberry (2008) 'The Rise of China and the Future of the West', *Foreign Affairs*, January/February 2008, and G. John Ikenberry (2008) 'China and the rest are only joining the American-built order', *New Perspectives Quarterly*, Volume 25, Issue 3, pp. 18-21, Robert J. Art (2008) 'The United States and the Rise of China: Implications for the Long Haul', in Ross and Zhu (eds.), and Robert J. Art (2010) 'The United States and the Rise of China: Implications for the Long Haul', Political Science Quarterly, Volume 125, No. 3, pp. 359-390 (this last is a revised version of the preceding book chapter in the light of the global financial crisis, but its conclusions, as far as this typology is concerned, remain unchanged).

In conclusion to this section, it seems that none of the eleven experts here considered have produced a forecast which can be placed, for various reasons, into one of the four scenario themes. This means that for the moment they are excluded from the typology; but that a re-assessment of the typology is needed in order to decide whether the four scenario themes encompass the full range of expert opinion concerning China's future.

5.5   Analysis of the typology to assess its suitability for the purposes of scenario construction

Having completed the typology, we are left with a 'panel' of six experts whose 'true' forecasts strictly fulfil the criteria for inclusion. These are: George Friedman and Gordon Chang ('China collapse'); Minxin Pei ('China stagnates'); John Mearsheimer and Bill Gertz ('China threat'); and Qin Yaqing ('Peaceful rise'). The working typology of expert forecasts at this stage is presented in Table 1. All others who have been considered do not fulfil the criteria for inclusion in a scenario theme as the typology has thus far been constructed, and are therefore excluded from the table.

'China collapse'	'China stagnates'	'China threat'	'Peaceful rise'
George Friedman	Minxin Pei	Bill Gertz	Qin Yaqing
Gordon Chang		John Mearsheimer	

Table 2: Working typology of scenario themes based on expert China forecasts

What remains here is to decide whether this working typology of scenario themes adequately includes the full range of expert opinion concerning China's future. The main question here is to assess whether the typology has failed to include some category or categories of genuine expert forecasts, and if so, why.

Based on the typology conducted above, it seems that a sizeable number of the experts to have been omitted are ones who anticipate China's continuing rise, but which did not fit neatly into either 'China threat' or 'Peaceful rise'. These include analyses and/or forecasts by Zhang Weiwei, Robert J. Art, G. John Ikenberry, Barry Buzan, Henry Kissinger, Stefan Halper and Martin Jacques. Such forecasts, however, can be safely omitted from the typology as it stands on the grounds that while they forecast continuing rise, they do not specify the specific *character* of that rise. They would belong, in other words, to the broader 'China rise' category discussed in the introduction that was divided into 'China threat' and 'Peaceful rise' for reasons indicated there.

The division of this putative 'China rise' category into two parts has, as (it is to be hoped) can be seen from the typology conducted above, made the scenario themes richer by distinguishing two, roughly opposed types of 'China rise' forecasts. A reduction of these two categories into one 'China rise' scenario theme would therefore seem to serve no purpose, since it would only make the typology – and the overall scenario construction process – poorer as a result. Furthermore, the compression of opposing arguments in the forcefully argued 'China rise debate' into one category seems counter-intuitive at this stage. On the other hand, if the addition of an extra scenario were to be considered, it is difficult to see what it could be, or what it could add to the existing themes. Adding another theme would also increase their number to five, which would go against the decision made at the end of the methodology chapter to restrict the number of scenarios to a maximum of four.

Similar reasoning would appear to mitigate against the possibility of adding other scenarios, the introduction of which might be suggested by the preceding section. It is, however, still important to consider whether there might not be alternative scenario themes which might replace one of the existing ones. Here it is necessary to look again at the 'true' forecast made by Bruce Gilley (analysed briefly but sufficiently in the preceding section). This predicts China's inevitable adoption of democratic institutions (something which Elizabeth Economy and Will Hutton also point towards) – even claiming at one point that CCP rule has an expiry date of around 2019, around which time the onset of a democratic transition is to be expected[760] – and would seem to indicate that it may be sensible to add a 'China transforms' scenario theme, especially

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[760] Gilley (2004), p. 32.

since this possibility appears not to be encompassed by the existing categories. Gilley also cites a considerable weight of expert opinion in support of his arguments, suggesting that it is necessary to consider democratic transition as a category in the typology.

However, if such a scenario theme were to be added, one of the existing ones would have to be removed, since otherwise the number of scenarios would exceed the recommended number discussed previously. This therefore demands revisiting the 'China collapse' and 'China stagnates' scenario themes, since it would appear that a possible 'China transforms' theme encompassing the decay, collapse or overthrow of the existing regime and its replacement with a democratic system would belong in this part of the typology rather than alongside the two existing 'China rise' scenario themes. It is therefore necessary to consider whether a 'China transforms' scenario theme does indeed add something new of value which is not encompassed by 'China collapse' and 'China stagnates', and whether such a theme might replace one of the existing ones.

At this point it is pertinent to recall the conclusions reached in the 'China stagnates' section. This theme, it will be remembered, had only one supporter, Minxin Pei, who at any rate appears to have shifted in recent publications in the direction of the 'China collapse' scenario theme. This casts doubt on the need for the 'China stagnates' theme: such doubt becomes even greater if one reasons that political and economic stagnation must ultimately resolve itself in some way, presumably either through the collapse or transformation of the existing status quo (which is what, for instance, occurred in China in 1911-12 after a long period of stagnation[761]). If one in fact reasons in this way, the need for both 'collapse' and 'transformation' scenario themes becomes even more evident. Combining this reasoning with Pei's own gradual shift or adaptation of his position over the years towards a 'collapse' type scenario means that the 'China stagnates' theme can justifiably be removed, and a 'China transforms' theme put in its place. Pei's own position needs then to be conflated with either the 'China collapse' or 'China transforms' theme, or removed from the typology if it is not clear which one of these it would best belong in. Considering his apparent shift of position, and the subsequent difficulty of categorising his views, it is perhaps safer simply to exclude his forecast altogether.

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[761] See Spence (1990) and the preceding chapter for more on this.

The decision to replace 'China stagnates' with 'China transforms' leaves us with an altered typology to consider, consisting of these four scenario themes: 'China collapse', 'China transforms', 'China threat' and 'Peaceful rise'. This altered typology is represented by Table 3.

'China collapse'	'China transforms'	'China threat'	'Peaceful rise'
George Friedman Gordon Chang	Bruce Gilley	Bill Gertz John Mearsheimer	Qin Yaqing

Table 3: Revised typology of scenario themes based on expert China forecasts

As can immediately be seen in the table, Bruce Gilley's 'true' (or hedgehog-like) forecast of China's transition to democracy and the removal of the existing regime is the only expert forecast from among the work of the original 'panel' of 30 experts which fits this category. Elizabeth Economy and Will Hutton, although also supporters of this position, do not (as was demonstrated in the preceding section) commit to 'true' forecasts free of hedging and alternative possibilities, and so are not listed in this revised typology.

In short, the adjustment from 'stagnation' to 'transformation' clears the confusion over Pei's evolving position, as well as over the need for both 'collapse' and 'stagnate' scenario themes. It also and means that there is a good balance in the typology between scenario themes where the CCP suffers a loss or diminution of power – 'China collapse' and 'China transforms' – and ones in which the CCP maintains its grip – 'China threat' and 'Peaceful rise'. This balance permits two variations on each eventuality, i.e. the CCP either losing or holding on to power, providing the scenarios with the desired informative, thought-provoking effect without overwhelming the reader with too many alternatives (cf. the attempt at scenario construction by Broadfoot and Enright[762]).

Thus this section has in fact shown that there is a need to revise the scenario themes carried over from the introduction to the typology, replacing 'China stagnates' with

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[762] See Broadfoot and Enright (2008).

'China transforms'. The next step in the scenario construction process is to evaluate the consistency and plausibility of the four scenario themes arrived at with reference to the assessment of China's past and present carried out in the preceding chapter. This will be achieved by connecting the conclusions reached there to the revised typology of forecasts and the views of the 'panel' experts.

5.6 Check for consistency and plausibility: re-evaluation of the typology with reference to key trends and uncertainties

This section, corresponding to Step 5 in Figure 3 ('Check for consistency and plausibility'), will compare the scenario themes derived from the typology of expert forecasts conducted in this chapter with the key trends and uncertainties concerning China's development obtained in the chapter preceding this one. Let us then begin by reiterating the key trends and uncertainties identified in the latter part of the chapter.

The key trends identified in the preceding chapter consisted of the following: China's rapid economic growth since 1978, which has contributed to a deteriorating environment; China's one-party, authoritarian political system; China's long history as a civilisation-state; China's wide range of domestic problems threatening to destabilise the country; China's grand attempt to modernise via scientific, technological and infrastructural development; and, internationally, China's pursuit of a 'Beijing consensus' which contrasts with the 'Washington consensus' of the Western countries.

The key uncertainties consisted of a set of questions. Politically, can the CCP maintain control domestically? Economically, can economic growth be maintained into the future? Environmentally, can scientific progress solve China's problems? Internationally, what kind of power will China be? Is 'China threat' or 'Peaceful rise' more probable? Will the 'Beijing consensus' take over from the 'Washington consensus' and forge a new Chinese future for the world?

Setting the four scenario themes supported by six expert forecasts against these trends and uncertainties allows us to see whether they are plausible. Let's consider them one at a time.

First, there is 'China collapse'. Collapse must certainly be a possibility, even if of the 'black swan' variety, when examining China's wide range of environmental, political, economic and social problems. Any one of these could potentially bring the government down or throw the country into chaos. Thus there is no doubt about the plausibility of this scenario theme, or of its consistency with the evidence examined in the previous chapter. So it seems sensible to retain it.

Next comes the 'China transforms' theme. Here Gilley's view (which needs expounding in more detail than has thus far been offered) is that China's democratization will be precipitated by a crisis, most probably due to "[e]conomic distress", which "remains the best predictive variable of authoritarian regime collapse."[763] Thus some kind of economic meltdown, in isolation or in combination with other emerging crises inherent in China's development process will, in Gilley's view, lead to popular protests similar to the Tiananmen Square incident in 1989, and the support of a significant faction within the CCP for democratic reforms. Thereafter, the elite-led process of democratization will be long and troubled, but will ultimately result in a China which will not collapse but instead be absorbed into the global family of democratic states, participating fully and responsibly in international institutions as Japan and Germany have done since the Second World War.

Gilley supports his thesis with a wide range of arguments. Key among these is historical evidence of the relatively successful democratic transitions of many other previously autocratic states such as South Korea, Taiwan, Russia, Spain, and CEE countries such as the Czech Republic, all of which democratized suddenly and unexpectedly. This implies that democratic change is as much of a black swan as total collapse, and should therefore be allowed for in the scenario themes. Another key argument is that an autocratic, controlling regime cannot fully modernise the state which it governs economically, institutionally and materially, and that this necessitates a democratic transformation in order to liberate the social forces – such as individual rights, freedom of expression, entrepreneurship, and so on – which are needed in order to achieve full modernisation.[764] The internal pressures and problems inherent in China's trapped transition – as Minxin Pei terms it[765] – and evident in the welter of protests common

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[763] Gilley (2004), p. 104.
[764] Ibid., p. 244.
[765] See Pei (2006).

across the country[766], can only be resolved, Gilley believes, in a transformation to democracy since there is no way for an autocratic regime to keep the lid on such pressures indefinitely or "to respond to crises".[767] Gilley also cites a wealth of evidence in support of his contention that there is widespread support for democratization within China.[768] Thus, according to Gilley, democratization will necessarily occur as an inevitable aspect of China's modernization, due to popular pressure which will generate elite-led transformation of the political process.

Is Gilley's thesis plausible in the light of the evidence? Given both China's own history (e.g. the overthrow of the Qing dynasty in 1911-12 and the Tiananmen incident of 1989) and the history of democratization around the world, it appears that it could well be. If one adds the extensive problems – economic, environmental, social, and so on – present in China today and putting pressure on the CCP, a compelling argument for impending regime change presents itself as a distinctly feasible possibility. The evidence of China's fixed, one-party system, allied with the probability of slowing economic growth as the demographic bubble bursts allied with the evidence of the growing incidence of popular protests around the country, suggests that the potential realisation of Gilley's forecast is both plausible and consistent with a significantly large part of the evidence. The CCP's own extensive study of the collapse of communism in Russia and CEE countries in order to pre-empt a similar transition in China also strongly suggests that China's leaders see democratization as a very real possibility.[769] So it would seem sensible to retain the 'China transforms' scenario.

The third scenario theme is 'China threat'. In fact this can be taken in conjunction with the fourth, 'Peaceful rise', because they exist in dialectical opposition to each other. This opposition arises from a key trend in terms of China's relationship with the rest of the world, which in turn produces a key uncertainty: does the challenge of the 'Beijing consensus' (which assumes continuing CCP rule) to the 'Washington consensus' represent a threat to world peace and the global order dominated by the US or not? It is certainly possible to argue both for and against the proposition that the rise of China, if it should continue on much the same course that it has followed for the last three decades, represents a military threat to American hegemony, as the arguments of Gertz

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[766] Gilley (2004), pp. 76-7.
[767] Ibid., p. 251.
[768] Ibid., pp. 32-36, 68-77.
[769] See Shambaugh (2008).

and Mearsheimer on one side, and Qin on the other, demonstrate. Thus it seems inevitable that both of these scenarios must be retained, since it is not possible to keep one and drop the other. The only alternative would be to compress the two scenarios into one, 'China rise'; but doing this, as pointed out earlier, would be at the cost of representing a key debate concerning the nature of China's rise. Thus both 'China threat' and 'Peaceful rise' must logically be included.

In short, all four scenario themes meet the requirement for consistency with the evidence of the key trends and uncertainties, and are all quite plausible. Therefore they can all be retained for the task of developing the final 'learning' scenarios in the next section.

Finally, before moving on, it seems worthwhile to review the typology in terms of the views of the 'panel' of 30 experts. Here it can be seen that there is support for one or a combination of the themes from most of the 'panel' members, with only eight experts appearing to offer no definite, consistent support for any of the alternatives. Table 4 summarises these findings, with experts positioned according to the analysis conducted in this chapter. It should be noted that where an expert offers support for 'Fall' or 'Rise' more broadly, without choosing one of the themes in this typology, s/he has been placed into the category 'Generalised 'Fall' and 'Rise' supporters', while experts who offer support for a particular theme without committing to a 'true' forecast have been designated 'Theme supporters'.

It is instructive to note that the finalised typology may possibly be revealing of current trends in expert thought concerning China's future, in that there is a preponderance of experts expecting China to continue rising under CCP rule, as it has now (unexpectedly) done since 1989. This speculative interpretation suggests a contrast with expert views in the 1990s, when, in the wake of the fall of the Soviet Union and the democratization of CEE countries there was arguably a preponderance of authors expecting the end of CCP rule and a democratic transition. However, a comparison of the two periods is beyond the scope of the present study and would demand a dedicated research project.

It is also interesting that the 'Peaceful rise' theme is entirely supported by Chinese experts living in China, while none of these support the other three themes. This, of course, is likely to be, at least in part, indicative of prevailing political circumstances in China. Nevertheless, given the well-supported thesis developed by Qin Yaqing, the

'Peaceful rise' scenario theme still has sufficient plausibility, interest and support to remain in the typology as a counterpoint to the other three, especially given the lack of Chinese support for the other three themes.

Theme:	'China collapse'	'China transforms'	'China threat'	'Peaceful rise'
Forecasters:	G. Friedman Gordon Chang	Bruce Gilley	Bill Gertz J. Mearsheimer	Qin Yaqing
Theme supporters:		E.C. Economy Will Hutton	C. Menges	Zheng Bijian Zhao Tingyang Zhu Feng Feng Huiyun Zhang Weiwei
Generalised 'Fall' and 'Rise' supporters:	Minxin Pei Carl Walter & Fraser Howie		Barry Buzan Martin Jacques Henry Kissinger Stefan Halper G. John Ikenberry Robert J. Art	
Uncommitted:	David Shambaugh, Susan L. Shirk, Yan Xuetong, Vaclav Smil, James Kynge, Jonathan Watts, Wang Gungwu, David C. Kang			

Table 4: Extended typology of scenario themes showing the extent of 'expert panel' support

Furthermore, if the overwhelming Chinese support for 'Peaceful rise' suggests that it is nothing but a politicised and Chinese government-backed scenario theme – which of course remains a very convincing possibility – it has to be remembered that the same can be said of the 'China threat' theme, except with reference to hawks in the US administration and media. In fact all of the themes without exception can be seen as heavily politicised, particularly since they tend to emerge from hedgehog-like experts backing one horse, rather than fox-like experts who produce more nuanced analyses.

This last in fact may account for the fact that some of the biggest names in the field of China studies within IR – such as David Shambaugh, Susan Shirk and Yan Xuetong – do not commit to a specific forecast concerning China's future: seeing a number of possible futures, all of which depend on unpredictable developments, they do not want to make the mistake of setting their stall out for one alternative only.

In the end there is no doubt that the typology shows that specific forecasts are made by hedgehog-like experts rather than fox-like experts. However, as previously stated, being backed by bold hedgehogs rather than cautious foxes does not invalidate scenarios, since they are intended to be narratives describing specific futures for the purpose of developing the ideas and thought processes of those using them. Scenarios do not themselves present predictions, but alternative futures; and on this note it is to the final 'learning' scenarios developed from the typology that we now turn.

5.7   Development of the final 'learning' scenarios

Having specified and checked the four themes for the final 'learning' scenarios, it is now time to develop these scenarios in full. This section therefore represents the final stage of the scenario construction process developed in the methodology chapter, i.e. Step 6 in Figure 3. However, in the 'Complete research design flowchart' presented in Figure 4 it represents only the penultimate stage, Part 4, since Part 5 consists of a critical analysis of the scenario construction project. This critical analysis will be carried out in the next chapter, the final one and the conclusion to the thesis as a whole.

In developing, then, these final 'learning' scenarios for use in considering China's future, there is a need to transform the bare outlines developed in the typology into full scenarios containing coherent storylines representing alternative future outcomes. This means that although Van der Hejden's suggestion that we "'think the unthinkable', follow intuition, let [our] imaginations run wild and suspend disbelief"[770] may be rather extreme, there is no doubt that it *is* necessary to be creative in the narration and detail of the scenarios. Each one needs to depict a plausible future for China, and thus each

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[770] This quotation is a paraphrase of Van der Hejden by Chermack et al (2001), p. 16.

one should be told convincingly enough to constitute a believable, memorable narrative of the period up to 2050.

The scenarios of China's future that follows are therefore based on the work of the six authors listed as 'Forecasters' in Table 4, but also introduce elements taken from the remainder of the China literature as well as the author's imagination. Introducing a variety of such elements, including even the action of the subconscious mind[771] is, Van der Hejden insists, intrinsic to the scenario construction process, which is after all designed to enable individuals (such as academics, politicians and others) and organisations (such as governments and businesses) to "make sense of events and trends in the strategic situation"[772] at a human, psychological level rather than merely in terms of facts and statistics. Representing the future on this level is important in order (theoretically) to facilitate more rapid, considered responses to changing situations that have been anticipated, as well as in attempting to shape the future through decision-making processes.[773]

Moving forward, then, to the scenarios themselves, let us first rename them to make them more memorable and informative as narratives. In this imaginative reconfiguration, 'China collapse' becomes 'China in chaos', 'China transforms' becomes 'Democratic transition', 'China threat' becomes 'Clash of the titans', and 'Peaceful rise' becomes 'Living with the dragon'. Let us now look at these scenarios, based on the typology, one by one.

5.71   Scenario 1: *'China in chaos'*

China's economic growth, already starting to slow by 2012 under the pressure of the global financial crisis and growing environmental problems, grinds to a halt between 2015 and 2018. In early 2019 the housing bubble finally bursts, meaning that Chinese savers, heavily invested in property, lose out as the value of their homes plummets. Inflation spirals higher, further reducing the value of assets and salaries. At the same

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[771] Idem.

[772] Chermack et al (2001), p. 27.

[773] For more on these points see the scenario construction literature (e.g. Chermack et al 2001, Shoemaker 1995), as well as the discussion of scenario planning in the methodology chapter of this thesis.

time the mountain of bad debt built up in the financial system begins to take out the major Chinese banks one by one. Foreign investors flee, leaving the newly exchangeable Chinese currency, the Renminbi, to collapse to a tenth of its previous value.

In the wake of this economic meltdown and the resulting run on the banks, hordes of protesters, many of them from the recently enriched (and newly impoverished) middle classes, converge on Beijing and Shanghai. Armed clashes ensue, resulting in thousands of deaths, but the protestors are so numerous that they overwhelm the ability of the armed forces to cope. Many army units also desert and join the protesters, meaning that China's two largest cities become battlegrounds for pro- and anti-government forces.

The struggle is bloody and extended. Eventually, the CCP is overthrown and a junta drawn from the leading officers and demagogues among the counter-revolutionaries is set up in its place. However, hearing reports of the chaos in Beijing, secessionists and dissidents elsewhere in China seize their chance. A rival government is set up in far-flung Chongqing, and another in Guangzhou. Xinjiang and Tibet declare independence. China is plunged into a long-lasting chaos and civil war that takes decades to unravel, just as it did after the fall of the Qing dynasty in 1911-12.

The year 2050 finds a weakened, fractious and fragmented China. The large western regions of Xinjiang and Tibet are now controlled by pro-Western forces, with Indian troops in Lhasa and UN forces in Kashgar and Urumqi. Russia has seized large swathes of the north-east down as far as the port of Dalian. The prosperous south-east of China has separated itself from the rest and joined democratic Taiwan and Hong Kong in a Western-orientated coalition. The south-west is controlled by the warlords of Chongqing. What is left of the People's Republic of China lies in the environmentally ravaged centre, north and east around Beijing and Shanghai, but is weakened and chaotic to the extent that the UN has decided to recognise Taiwan-Guangzhou as the holder of China's seat on the UN Security Council. In short, the old China, once known as the PRC, is no more, and in its place is a new set of smaller states contending to give the long-suffering Chinese people hope and to reunite the Chinese heartlands.

5.72   Scenario 2: *'Democratic transition'*

As China's economy inevitably slows, times become harder for job-seekers and graduates during the years up to 2020. China's export industry, previously the envy of the world, becomes uncompetitive as asset prices and salaries rise, while new industries are slow to emerge. At the same time, struggles with the environment become more severe. The north continues to desertify, water is rationed in Beijing, smog worsens, and industrial pollution of groundwater claims more and more lives through cancer.

After numerous small scale protests, one case proves the tipping point towards democratization. The human rights lawyer representing a 'cancer village' where children are dying by the hundreds of leukaemia and other diseases is beaten to death after being taken into police custody for 'stirring up trouble'. Spread like wildfire by the internet, the case quickly becomes a cause celebre, *generating articles and flash mob protests across China outside CCP provincial headquarters. Amid leadership fear of extended civil strife, the police and army receive instructions to hold fire and await further instructions.*

Peaceful candlelit vigils for the dead grow in frequency, with singing crowds thronging the streets of cities throughout China. Several weeks pass, during which the numbers of protesters steadily swell. In Zhengzhou, shots are fired and several protesters are killed, others wounded, provoking a wave of outrage across the blogosphere. Calls for change start to come from many quarters, including even some editorials in state-owned newspapers, indicating the possibility of concessions.

Seeing the writing on the wall, a pro-democracy faction within the ranks of the CCP's leading cadres canvasses secretly for support. The crowds grow restive, breaking windows and looting shops in several cities. All at once, in the wake of a sudden backroom bloodless coup, the leaders of the faction appear on live television to announce that there will be elections within six months. The crowds hold their breath, disbelieving but expectant. Further announcements are made over the next several weeks, and a date for multi-party elections is set.

Amid much scepticism, the elections take place. The CCP wins the majority of seats, forming the government, but other new parties (mostly led by former CCP cadres) such as the Chinese Nationalists, the Greens and the Liberals also win substantial shares. Of course, vote-rigging and corruption are suspected and in some cases proven to have occurred. Nevertheless, the long process of reforming Chinese law and institutions begins amidst surprisingly general optimism.

The next two decades see many problems and setbacks with the reforms. China's economic growth continues to be much slower than before as the reform process takes its toll on productivity, averaging around 0-2% p.a. Cynics and pessimists call China a 'puppet democracy' whose strings are pulled behind the scenes by the CCP. Nonetheless, some gains are made: China is more respected on the world stage, participating more fully in global institutions; a Chinese president wins a Nobel Peace Prize in 2034; Chinese scientists patent ground-breaking technology in the fields of clean energy, genetics and nanotechnology by 2040; and Chinese industry is being developed on the basis of new labour laws. By mid-century, despite manifold problems inherent in an old and vast civilisation adapting to a new and unfamiliar political system, China appears to have followed the example of Taiwan and genuinely democratized, having recently elected its first non-communist government since the 2020 elections, and stands as one of the members of a new G-15 of the world's most influential nations attempting to use scientific innovations to forge a more sustainable future for humanity.

5.73   Scenario 3: *'Clash of the titans'*

China's economic growth slows gradually, but under a series of soundly-formulated 5-year plans continues at a rate of about 5-6% p.a. until 2025, even in spite of the rising price of natural resources and foodstuffs. The CCP maintains a tight grip on power, nipping dissent in the bud through strict censorship and control of the public sphere. Chinese banks and large corporations are still state-owned enterprises (SOEs). Infrastructure projects continue apace, industry becomes more high-tech and efficient, and Chinese scientific institutes reach the cutting edge, but the environment is still under stress. The price of oil passes $250 per barrel. Meanwhile Europe and Japan

are still stagnant and the USA is crippled by its debt burden, which expands to $20 trillion and beyond.

Gaining in confidence, Beijing expands the capabilities of its army, navy and air force. Chinese aircraft carriers protect shipping in the dangerous Straits of Malacca and Red Sea Straits. Nuclear submarines circle the Spratly and Senkaku (Diaoyu) Islands, alarming the Philippines, Vietnam, Indonesia and Japan, and venture unchallenged through the Pacific and Arctic oceans. A manned Chinese space station circles the earth. In 2026, Chinese taikonauts stand on the moon. Rumours of secret Chinese programs of stealth bombers, underwater ports and space weaponry spread.

In the US, hawks have been warning for decades of the Chinese military build-up. Despite its economic woes, Washington gets caught up in a new arms race with Beijing, among other things restarting the Reagan-era 'Star Wars' program. Japan and Russia are also said to be redeveloping their armed forces. Tensions steadily build.

The first stand-off occurs, to everybody's shock, in 2028 in the Arctic, where the Chinese navy is discovered protecting a secret, UN-unsanctioned undersea drilling installation which has been extracting oil for Chinese use for several years. American and Chinese ships exchange overhead warning shots. The case is taken to a UN tribunal.

Before the case can be resolved, Japanese and Chinese ships clash in the East China Sea near the Senkaku Islands. One Japanese and two Chinese ships are sunk, but the conflict does not for the moment escalate as each side's forces withdraw. The US takes Japan's side in the UN, but Russia, fearing Japanese claims on the Kyril Islands, weighs in for China. Global stock markets crash. World War III seems to loom.

During the next few years, amid escalating tensions, full-scale war somehow never quite materialises. Probably all sides are just too afraid of the consequences of unleashing the full fury of their dogs of war. In 2032 Sino-Russian relations break down as they did in the 1960s, and border clashes occur along the Amur (Heilongjiang) River. Japan and the US seize the opportunity to push for economic sanctions to be imposed on both China and Russia. EU negotiators intervene and avert the worst.

In the next two decades, skirmishes occur at several flashpoints in the oceans without flaring further, Russia twice changes sides, Pacific, Arctic and Antarctic spheres of influence are redrawn. The US agrees to withdraw from Chinese and Russian waters, while strengthening its bases in Japan. China agrees in turn to stay out of the Atlantic.

By 2050, the PRC is in control of the East China Sea and the Indian Ocean. It is the undisputed Asian hegemon, with only Japan remaining as an isolated island of barricaded Western influence. Russia patrols the Arctic and the Baltic and keeps a tight watch on its Far Eastern borders, while US dominates the Atlantic, Europe and the East Pacific. Fleets and air forces patrol constantly, maintaining an uneasy state of truce. Amid the unresolved and worsening global environment and economy, and faced with dwindling natural resources, the future of the temporarily carved-up world dominated by glowering, militarised titans is uncertain.

5.74   Scenario 4: *'Living with the dragon'*

2015 sees the end of the global financial crisis. China's economic growth, which had dipped as low as 6% p.a., rises again to 9% amid revived global trade and optimism. Industrial production figures rise dramatically amid a rapid shift towards high-tech goods such as computers and mobile phones, boosting the jobs market and pumping air back into the deflating housing bubble. The discontent which had begun to stir in Chinese society quietens down again, as the PRC rediscovers its penchant for generating wealth and lifting millions out of poverty.

The environment is still under strain, however. Demographic trends also represent a long-term drag on the economy. The most important thing, Beijing realises, is to develop technological solutions to these problems, a task which China's rapidly emerging state-of-the-art scientific institutes set about tackling. With the proportion of Chinese living in cities passing 60 per cent in 2018, the need to improve urban dwellers' quality of life is pressing.

At the same time, Beijing realises that it must improve its relations with other parts of the world. With growth in the US, Europe and Japan still slow, the PRC's global responsibilities inevitably increase in line with its growing economic clout. In 2019

China is instrumental in solving the problem of Somalian piracy by giving its military and diplomatic backing to a newly-installed hard-line government which begins to crack down on criminal elements: there is no other way to protect Chinese shipping heading into the Mediterranean. In 2021, the Athenian port of Piraeus, under Chinese majority control, becomes the largest by volume of trade in Europe: the Greek economy, with Chinese guidance and investment, begins to pick itself up off the floor. Central and Eastern European countries begin to look to China rather than Western Europe or the US for leadership and assistance. Chinese soft power increases steadily also in Africa, Latin America and its Asian backyard as Chinese business interests spread and take root.

Around 2032 Chinese economic growth finally grinds to a near-halt. Demographic and environmental factors have taken their toll. Yet with the earlier relaxation of the one-child policy (meaning a baby boom generation is due to reach working age in the 2040s), the Chinese diaspora increasing rapidly in size and influence around the world, and the implementation of new green technologies gaining traction, there are plentiful reasons to suggest that the slowdown will not stop China's long-term rise. The PRC is more and more influential globally: many now look to Beijing to arbitrate disputes before they look to Washington, which is now absorbed in solving its growing problems of domestic debt, declining industries and civil disorder, or stagnant, decaying Western Europe.

By 2040 the Chinese economy is back on track. Chinese industry leads the world in finding high-tech solutions to environmental, energy and agricultural problems. The most gifted university graduates naturally look at moving to China to find work at one of its world-beating corporations – if they can beat the domestic competition from the baby boom generation. China's environment is still severely degraded, but everybody is optimistic that the solutions being applied will work. The gradualist reforms of the previous two decades have also encouraged a slew of academic studies of the success of the PRC's meritocratic, Confucian-derived political and business culture. Many want to copy Beijing's methods of selecting and training leaders.

In mid-century China stands at the head of the family of nations, respected but no longer feared. It has halted its environmental collapse, and begun to turn things around, with cleaner energy, smarter agriculture, and more efficient use of resources.

Its system of government, although still officially communist, has evolved gradually into an efficiently hierarchical set of committees, constantly consulting and developing mid- to long-term policy solutions in response to emerging issues. The PRC is respected in the UN, where its non-confrontational approach to conflict resolution is increasingly utilised. In 2050 even the US, Europe and Japan, despite reservations and resentments held over from an earlier age, are now resigned to living with the dragon.

5.8   Conclusion and summary

The above finished scenarios represent the culmination of the scenario construction process as designed in the methodology chapter. They are of necessity imaginative, yet at the same time developed out of the historical uncertainties and trends studied in the preceding chapter. At the same time, they are intended to represent clear, coherent, plausible and memorable narratives based on the typology of expert forecasts developed in this chapter. The success or otherwise of this conclusion to the scenario construction process will be evaluated as part of the conclusion to this thesis.

At this point the scenario construction process has been completed up to the development of the four final 'learning' scenarios based on the typology of expert forecasts. All that remains for this thesis is to conduct a critical review of the success or otherwise of the project as a whole, which will be conducted in the next chapter, the concluding one, and thereafter to add some suggestions for ways in which future research could build on the findings of this project.

CHAPTER 6: CONCLUSION

6.1 Overview

Having completed the scenario construction process up to the writing of the final 'learning' scenarios (thus completing all the steps in Figure 3), the concluding chapter will analyse three aspects of this project. The first of these is the need, as explained in the methodology chapter and outlined in Figure 4 (Part 5: 'Critical analysis of scenario construction project'), to assess the degree to which the scenario construction process has been successful. In other words, has the construction of scenarios of China's future based on the typology of expert forecasts and the analysis of key trends and uncertainties conducted in the previous two chapters produced something new or at least interesting which can be used as the basis for further research, or as a foundation for interested individuals (such as politicians, scholars and journalists) to understand China's development better and to influence or plan for possible future outcomes? What, in addition, are the limitations and advantages of using scenario construction as a learning tool for the study of socio-political futures?

The second aspect to analyse is the success or otherwise of the project as a whole. This means examining the value of the entire thesis to establish the extent to which it assists practitioners in the social sciences – especially in the fields of political science and international relations – in obtaining an improved understanding of the study of socio-political, future-orientated phenomena such as China's future development. Here we can look back at the theoretical and methodological aspects of this thesis, i.e. the findings obtained in the theory and methodology chapters, in order to decide the extent to which these add something to the study of the future in the social sciences in general, and the study of political futures in particular. Key questions here will be the following: What (if any) new information has the project revealed about the study of the future in the social sciences, and especially in political science and IR? Is there anything more that could have been done and could be done in future research in this area? What are the limitations inherent in studying future socio-political phenomena? Is it actually worthwhile to attempt to study future political developments on the basis of the sum of present knowledge, or is it, in fact, a futile exercise? Has anything worthwhile been

achieved in terms of understanding the future of China? All these aspects of the theoretical, empirical and methodological parts of the study will be examined frankly.

The final aspect of the study to be examined in this concluding chapter follows on from the other two. In terms of adding value to the field of research into socio-political future outcomes, what kind of foundation does this thesis provide for future research? On a more negative note, does this project in fact indicate any fruitful directions for researchers to work on, or does it merely prove that the future is unknowable and that it is not worth continuing with such research? Again, these questions will be discussed frankly and with the intention of adding something to the fields of political science and IR in the area of futures research.

6.2   Critical analysis of the scenario construction project

The limitations and advantages of using scenario construction as a tool for understanding the future have already been indicated in the methodology chapter and it is therefore not necessary to repeat them here in detail: the reader is referred to the relevant pages in that chapter. What needs to be done here is to assess whether this specific scenario construction project has revealed anything new about the previously-acknowledged pros and cons, and also whether it has unearthed any new information about the study of the future in the social sciences, and especially in political science and IR. It is also important to decide what conclusions can be drawn from the process of constructing scenarios of China's future, as well as from the scenarios themselves.

Let's take the previously analysed strong points of scenario construction first. These were four: (i) scenarios do not predict, but present possible alternative outcomes; (ii) scenarios permit an exploration of future uncertainties; (iii) scenarios are a good match with the psychology of the human mind as it examines the future, in that, like the human brain, they "imagine a wide range of potential futures, potential situations"[774]; and (iv) using scenarios can help to overcome the human brain's prediction flaws. None of these advantages would appear to have been contradicted by the present study.

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[774] David McRaney (2012) *You Are Not So Smart: Why Your Memory Is Mostly Fiction, Why You Have Too Many Friends on Facebook, and 46 Other Ways You're Deluding Yourself*, Oxford: Oneworld Publications, p. 21.

In fact, the first two strengths would seem to have been confirmed by this thesis, while confirming or contradicting the last two remains a matter for psychological research and is beyond the scope of this thesis, except to reiterate the sources that were quoted earlier in support.

Moving on to the disadvantages of using scenario construction as a methodological tool for understanding the future, it may be recalled that the relevant section of the methodology chapter discussed two. These were: (i) that scenario construction, despite the best intentions of the constructor, can be affected by biases; and (ii) that in constructing scenarios wild imaginings and fictions can easily take the place of reasoned analysis. There is therefore a need here to analyse the extent to which these two weaknesses have been addressed (or not) by the present study.

In both cases it can be said that there is some evidence that the methodology used here has done something to compensate for the weaknesses of scenario construction. At the outset the use of a typology of expert forecasts, allied with the employment of the historical and present-day context of China's developmental trends and uncertainties as a check on plausibility, was expected, at least to some extent, to mitigate the dual potential failings of bias and wild imaginings. In fact, in practice following the steps in the scenario construction process enabled one scenario theme to be replaced by another, which was unearthed during the typology and which had not been initially considered. This indicates that the checks and balances built into the methodological process did indeed serve to mitigate the initial bias stemming from the development of the scenario themes. Furthermore, in confirming the existence of expert support for three of the four scenario themes, as well as the necessity of replacing the fourth with another which had not been initially considered, the typology can be said to have supplied a firm foundation for the final 'learning' scenarios which would not have been present if the scenarios had merely been developed from the author of the study's own imagination and from no other source.

On the other hand, it goes without saying that it has at all stages been up to the author of this work (namely, myself) to interpret the literature on China's past, present and future analysed in this work, as well as to relate this literature to the scenarios ultimately constructed. Other authors might, for instance, have set up the initial scenario themes differently and worked through the typology differently, as well as

drawing out different trends and uncertainties from the literature on China's past and present development. The inevitable subjectivity built-in to the project must still be considered a weakness, despite the use of the checks and balances outlined in the previous paragraph.

Another possible weakness is identified by Neumann and Øverland, and consists of "a tendency to reify current trends"[775] and ignore unexpected outcomes ('black swans') in the predictions of individual forecasters. Smil calls this "the biasing effect of recent events" and suggests it is "the most common weakness found in long-range forecasts".[776] The final typology of expert forecasts above (see Table 4) reveals for instance a prevalence of experts favouring a continuation of one of the two variants on 'China rise': in these texts there is often an assumption that China's recent high rates of economic growth will continue in a linear fashion, while assuming that China's current political system will not change. Experts forecasting radical change (i.e. adherents of one of the two 'fall' scenarios) are considerably fewer in number, these scenarios being neither currently fashionable nor suggested by current trends. A study of forecasts made in the 1990s (beyond the scope of this thesis) could be conducted to confirm this hypothesis: expert texts of that decade, closer in time to the events of 1989, may be expected to have had a much higher prevalence of 'fall' forecasts relating to the endurance of China's government and political system. However, as far as the methodology used in this study is concerned, the explicit non-utilisation of either probabilities or expert consensus would seem to negate this possible weakness. In other words, unfashionable forecasts have been given equal weighting with fashionable ones in the final typology and 'learning' scenarios, regardless of the number of experts supporting them, meaning that the problem of reification of current trends should have been avoided. Neumann and Øverland's 'reification' weakness can thus be seen to have been negated by the methodological process utilised in this study.

A third possible weakness not yet discussed lies in the transition from the typology to the final 'learning' scenarios. Although I have tried my best to input a good range of information from both the expert forecasts and China literature into the scenarios, the writing of these is intrinsically an act of creating plausible-seeming narrative fiction. While writing the scenarios I was aware that there was an imaginative leap required in

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[775] Neumann and Øverland (2004) p. 259.
[776] Smil (2004), p. 212.

order to make the jump from the literature and the typology to the scenarios themselves: this leap could only take place in my head, and so there is a definite sense in which the scenarios are not 'objective' at all, particularly since they describe events which have not yet occurred (and may never occur). The scenario construction process as it has been developed here is thus hampered, no matter how much evidence is considered, by the lack of an explicit intervening methodological step for transferring expert analysis into the final scenarios. An additional methodological step of this type may therefore be required to make future attempts at scenario construction more convincing in terms of their evidential basis. This is something worth considering in the further development of research into the use of scenario-based methodologies for understanding possible future outcomes.

On balance, despite the shortcomings, it can be said that the scenario construction process developed in this project has had three positive outcomes. First, it has allowed us to examine a range of potential futures in considerable detail without having to commit to predicting one or another. This has the obvious advantage of permitting the study of trends and uncertainties inherent in the present development of a socio-political phenomenon (in this case the development of China) without any obligation to decide between alternatives, which appears to be pointless given the difficulties (or impossibility) of forecasting accurately. Second, the use of a typology of expert forecasts has provided a means by which to establish a more solid basis for constructing scenarios which are grounded in, as Smil and Rescher point out, a range of informed opinion rather than merely emanating from one person's imagination.[777] Third, using this method also performed the useful function of producing an unexpected alternative to the author's original set of scenario themes, and thus enabled these to be revised and improved, as well as permitting a clear picture of the spectrum of expert analysis of the phenomenon to emerge in the final typology. The last two positive outcomes provide evidence of a mitigation of the primary weaknesses of scenario construction, namely the tendency towards bias and wild imaginings, while the first one, as stated in the methodology chapter, neatly bypasses all the problems inherent in prediction in the social sciences.

Overall, then, it can be stated that the scenario construction process as developed in the methodology chapter and then followed as a series of steps through the subsequent two

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[777] See Smil (2004), p. 211 and Rescher (1998), p. 92.

chapters, while still in need of some improvement in the area of transformation of expert analysis into the final 'learning' scenarios, met with some success in terms of reducing the effects of bias and wild imaginings. It also permitted the examination of a broad spectrum of views on China's future development and the consideration of a wide range of evidence taken from the literature on China's past and present, which was then used as a check on the plausibility of the scenario themes. These findings allow us tentatively to conclude that scenario construction, when combined with adapted Delphi method in the form of a typology of expert forecasts, may have some value as a methodological tool for examining possible socio-political futures, albeit qualified by the shortcomings analysed in this conclusion and the methodology chapter.

At the same time, further research into the methodology is undoubtedly needed before its success can be fully evaluated, particularly as it relates to the connected fields of IR and political science. One area requiring a good deal of research (especially since it does not seem to be adequately covered by any of the scenario planning literature) is the need to analyse the psychological and practical impact of final 'learning' scenarios on their users. Such research into outcomes and usage would require analysis of users' interaction with the scenarios: this would demand the use of (for instance) interviews or questionnaires to ascertain users' responses to the scenarios. It would also be desirable to establish some methods for assessing the impact of scenario usage on real-world outcomes such as political decision-making or academic research projects. Such research is beyond the scope of this thesis (due to lack of both space and time), and would require the design of a new project or projects. Here it is only possible to point out – as a finding identified by this thesis – the need for further testing and exploration of these research areas.

Comparison of the scenario construction process utilised here (which, as stated in the methodology chapter, is based on applying the insight of the Delphi method described by Rescher[778] in respect of the value of expert opinion to the scenario construction process suggested by Shoemaker[779]) with other variants of scenario construction – such as Neumann and Øverland's 'perspectivist scenario building'[780], or Ditrych's 'new

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[778] See Rescher (1998), pp. 92-3.
[779] Specifically, as indicated in the methodology chapter, on Shoemaker (1995), pp. 28-30.
[780] Neumann and Øverland (2004).

scenario building'[781] – is also needed. At present, as Ditrych's 2012 paper suggests, there appears to be little or no consensus in political science and IR at present about the effectiveness or precise form of scenario planning that could be used in these fields,[782] and detailed further testing of variants is therefore required. Neumann and Øverland even go so far as to suggest, given that they have been unable to find any "attempts in published IR literature to reclaim the dialogue" on scenario construction, that IR scholars have deliberately turned their back on the use of the methodology.[783]

All of the above means that further comparison of the scenario construction process specified in this thesis with other methods for looking at the future, such as Delphi method, point forecasts, mathematical modelling, and so on, is also needed in order to establish whether scenario construction is better or worse than other methods or, alternatively, whether it could be used in combination with them. Much, therefore, still remains to be done before scenario construction, particularly in the experimental form utilised in this project, can be employed widely as a method for looking at futures in IR, political science and the broader social sciences. This thesis provides one suggestion of how to proceed (via a typology of expert forecasts), but there is no doubt that a much clearer and more rigorous debate in the literature over methods would be helpful. To repeat Neumann and Øverland's important observation: "The future is unknowable, but it does not follow that the *methods* [their italics] that we use to discuss future probabilities cannot be held to scientific standards."[784]

Moving on to an assessment of the scenario construction process as it relates to China's future, the use of a typology of expert forecasts as a basis for the construction of the final 'learning' scenarios – to the best of my knowledge an innovation in the field of IR – not only appears (to my mind) to give these scenarios more academic rigour than those obtained in other scenario building projects, but also supplies some unexpectedly informative insight into the range of expert opinion on China's future. Whether the scenarios obtained are judged by the academic community to be useful or 'value-added'

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[781] Ditrych (2012).

[782] Ibid., p. 103. To quote Ditrych in full: "Scenaristika neni ve vědě o mezinarodnich vztazich zavedenou metodou. Ve svem nedavnem vyvoji, teoreticky zakotvenem v kritice možnosti pravděpodobnostni předpovědi stavajicich (systemovych) teorii mezinarodnich vztahů, ktera si vypůjčuje koncepty jako nelinearita z matematickeho studia komplexnich systemů, může přitom poskytnout nastroje k zvyšeni prakticke relevance oboru v očich tvůrců zahraniční politiky (ať už statnich instituci, či nestatnich akterů) i široke veřejnosti."

[783] Neumann and Øverland (2004), p. 264.

[784] Ibid., p. 265.

is another matter, of course; but I would like to point out that given that they embody the narrative essence of what appears to be the full extent of academic opinion, the scenarios ought to provide a basis for clearer thought about some possible directions in which China's development may lead. It is for this reason that I have called the final scenarios 'learning' scenarios: they are intended to provide a basis for further thought, debate and research. To this extent at least the scenarios obtained must have at least a certain amount of value.

Thus, the typology, I would suggest, can be seen as casting some clear light on the often contentious and confusing debates concerning China's future by assigning the views of thirty prominent experts to definite categories so that their positions can be compared and contrasted. Again, however, further research would be necessary to decide whether there are alternatives to the system of categorisation arrived at in this project. I can only point out here that it seems to me that the fact that the 'China threat' scenario theme is supported solely by Western scholars and the 'Peaceful rise' theme is supported solely by Chinese scholars must provide some pointers for further research, for example in the area of political psychology, or in the study of the roles of personal characteristics and emotion in political analysis and decision-making.[785] Without elaborating further on this and other salient points (which would require another whole chapter at the very least, for which there is no space here), it is sensible to conclude that there is ample opportunity for further research into the findings of this scenario construction project in a number of areas, and that the research conducted in this area has therefore at the very least fulfilled a useful function in pointing out the need for the fields of IR and political science to expand their horizons in the connected areas of futures research and China's 21st century development.

6.3   Critical analysis of the research project as a whole

As stated in the introduction to the thesis, the ambition inherent in this project has meant from the outset that it was always likely to be prone to a certain amount of

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[785] For example, one possible avenue for further research could be to compare the results of the typology obtained here with the thesis laid out by Drew Westen in his (2007) *The Political Brain: The Role of Emotion in Deciding the Fate of the Nation*, New York: Public Affairs.

approximation, error, failure or negative findings. Any research dealing with an exploration of future outcomes in the social sciences is always going to be controversial and experimental to some extent, given the lack of consensus in the literature about how to approach the material in terms of methodology. Thus there was no doubt from the beginning that the research to be presented would, in all probability, fail to satisfy a number of political scientists and IR practitioners, particularly those focussed on the use of quantitative methodologies. Future outcomes in the social sciences are essentially, as we have seen, unquantifiable given the current state of scientific knowledge, and will likely remain so even should methodological improvements be made. Even if computer modelling one day catches up with complexity and chaos theory it is still very likely that what it will be modelling will be *possibilities* or *probabilities* rather than *certainties*. In other words, the models that are capable of being produced are always likely to be scenarios rather than forecasts, since it will always be difficult (or impossible) to establish solid statistical probabilities of future socio-political outcomes occurring.

With these circumstances understood, the project now concluding was always going to include a quantity of grey areas, approximation, generalisation, sweeping statements, and so on. At the same time, given the difficulty of pinning down most socio-political phenomena with precision, the apparent flaws inherent in the project can also be interpreted on another level as assets, since their very imprecision can be said to be more representative of the uncertainties inherent in the study of the future than any (irrational) attempt to be precise, either numerically or otherwise. Thus, the rough edges found in the analysis contained in the previous four chapters can be said to be methodologically *valuable*, providing better and more informative insight into socio-political futures in general, and into the phenomenon of China's emerging future (which must, after all, turn out one way or another) in particular than any attempt to quantify it. Furthermore, the mere attempt to understand what is possible or impossible when looking at the future must be, at some level, worthwhile, if only for what it reveals about the limits on the human ability to encompass what is all the time being speculated about, anticipated, and planned for, but which has not yet come to pass.

It is necessary, however, to be more specific about the value or otherwise of this thesis by examining some specific findings, some of which were arrived at in the body of the

thesis, and some of which have emerged only at the end. A detailed analysis of these findings can identify the areas in which this thesis has clarified issues, as well as indicating problematic areas which need further research.

The first such finding was arriving at the connected realisations that improving study of the future in the social sciences, and more specifically in political science and IR, is both *necessary* and *controversial*: necessary because many aspects of the study of socio-political phenomena are future-orientated (e.g. normative, predictive), and controversial because there is no agreement about *how* to study the future in the social sciences, or even whether it *can* be studied. This thesis has, I believe, demonstrated the *necessity* of studying the future, but whether it has managed to resolve the controversy over *how* to study the future is doubtful. It has, however, in the review of theories and methodologies, managed to unravel many of the issues surrounding this 'how' controversy, identifying a number of problems, if not all their solutions.

The thesis has also distinguished methodologies which seek centrally to predict (e.g. methodologies which employ statistics and probabilities) from those which do *not* (especially scenario construction). This distinction in itself is a valuable finding, I would suggest, because of the confusion over the use of different methodologies that appears to exist in much of the social sciences literature concerning the study of the future. Armed with this understanding it is possible to analyse and plan for future outcomes on the basis of *possibility* rather than probability, of well-weighted *uncertainty* rather than ill-thought-through expectation, as scenario construction allows us to do.

Another significant finding has been to confirm that there is a need to focus on complexity and nonlinearity when looking at causal processes which lead to future outcomes. Work by complexity theorists such as Gell-Mann, Kauffman, Mitchell and others into complex adaptive systems, feedback loops, and other complex or chaotic phenomena has been shown by social scientists such as Robert Jervis, John Miller and Scott Page to have relevance to political science as well as the wider social sciences.[786] In the absence of a proven methodology for computing complex future outcomes with sufficient reliability in order to construct accurate models of the future, the use of scenarios has therefore been demonstrated to be the *faute de mieux* methodology: in

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[786] See Gell-Mann (1994), Kauffman (1995), Mitchell (2009), Waldrop (1993), Jervis (1997) and Miller and Page (2007), as well as the theory and methodology chapters of this thesis for further explanation of complexity theory.

other words, the best available methodological procedure for building complex phenomena into an attempt to address future possibilities.

In the area of scenario construction the detailed findings have been outlined in the section above. In terms of the importance of the scenario construction process for the overall project, however, I believe it is safe to conclude that constructing scenarios provided the only effective way to make progress. Since the central aims of the project were to conduct research into socio-political futures and China's future in particular, the use of scenario construction enabled the project to be carried out, for better or worse. It is difficult to see, as the methodology chapter explained in depth, how any other methodology could have provided the opportunity to continue with the project. For this simple reason, I would conclude that the use of scenario construction was a measured success within the context of the project as a whole.

Finally, as far as the study of China's future is concerned, the most intriguing part of the research was concerned with the typology of expert forecasts and the subsequent transformation of the resulting typology into scenarios. This, I believe, presents an interesting avenue for future-orientated research in the social sciences, and one that does not appear to have been previously considered or attempted in IR and political science. In terms of China studies, the typology itself represents an informative representation of the range of expert opinion, clarifying the often-contentious and confusing debates that have been continuing in the IR literature since the year 2000. The final 'learning' scenarios, even if none of them turn out to have been accurate depictions of China's actual future development by 2050 (which is quite possible), still, I contend, provide a fruitful basis for discussion and planning, as well as the aforementioned categorised description of the state of expert opinion over the period from 2000 to 2013. Thus the typology and scenarios must have some degree of value, even if only as historical documentation of the debate concerning China's future which has been filling the pages of academic IR and political science journals in recent years. As previously stated, the final 'learning' scenarios are in no way intended to be predictive, and thus it is outside the scope of this project to make any claims of this sort for them. Beyond this, whether they can be used as a foundation for further research, thought, learning and planning has to be decided by politicians, experts and scholars for themselves.

6.4   Summing-up: implications for future research

As already indicated in this chapter, this thesis has produced a wide array of interesting questions which can potentially be explored in future research. This section will summarise these in order to present a clear picture of the thesis' implications in terms of IR, political science and social science futures research, as well as research into China's future. As there are two main threads to this thesis, the study of the future in the social sciences and the study of China's future, the research questions presented below are divided into two groups.

First, there is the question of methodologies for examining future outcomes in the social sciences. Here, as the previous sections have indicated, there are a number of very interesting and still-unresolved questions. These include the following. Is it truly impossible to predict the future in the social sciences, or will computer modelling and statistics eventually provide a way or ways to establish reasonably accurate probability forecasts? In the absence of such forecast accuracy, is scenario construction (as Neumann and Øverland, Ditrych, and Bernstein et al suggest[787]) the best way of examining future outcomes in IR and political science without predicting? If so, is there an optimal way of constructing scenarios to make them less prone to biases and wild imaginings? If so, is the use of expert opinion categorised via a typology a fruitful way to progress? How does the typology of expert forecasts constructed in this thesis stack up against other possible methodologies? If scenarios are used, is there a need to include more than three or four scenarios to encompass more possibilities (as Broadfoot and Enright did in the case of China's future[788] and as Neumann and Øverland suggest[789]), or is this only likely to confuse readers? What is the best way to assess the effectiveness of scenarios in terms of their actual post-construction use? Similarly, where does scenario construction fit (if at all) into the study of political psychology in terms of understanding the effects of using scenarios as tools for learning about and planning for the future?

Second, there is the question of research into China's future. Here there is a vast range of research possibilities: the following questions will summarise the chief ones that

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[787] See Neumann and Øverland (2004), Ditrych (2012) and Bernstein et al (2000).
[788] See Broadfoot and Enright (2008).
[789] See Neumann and Øverland (2004), p. 276, where the authors suggest that 'new' scenario building, in contrast to traditional forms, aims to utilise "five or more" scenarios.

result out of this thesis' findings. Given the complexity of the development of a large political entity such as the PRC, is it impossible to assess a developing nation's future as it relates to its place in the global system of states, or is there some way to establish more and less likely variants of the future (as this thesis has attempted to do)? To what extent does the typology of expert forecasts and opinion herein constructed merely reveal the prejudices of the experts and the influence of recent events and to what extent is it representative of the true state of China's development? How does the range of expert opinion on China's future since 2000 compare with expert opinion during the 1990s? Are past and present trends in the development of a nation such as China indicative of the future course of events, or should, given the conclusions of complexity theory concerning nonlinearity, greater emphasis be placed on unpredictable turns of event (i.e. 'black swans' and 'wild cards'[790]) in the construction of scenarios, as recent work on scenario construction in IR[791] suggests?

To sum up, the avenues for further research are manifold, as recent scenario construction projects conducted by Ondřej Ditrych (2012 onwards) and Rapkin and Thompson (2013) suggest. Indeed, the appearance of these projects would seem to confirm the wisdom of Neumann and Øverland's claim that scenario construction needs to be taken up by IR scholars as a method for examining the future. However, only the (unknown and unknowable) future will reveal whether scenario construction as a methodology can plug the gap in IR and political science concerning the need for more thorough and rigorous study of the future.

Although this thesis has been ambitious, it is hoped that its exploration of the study of the future in political science, IR and the broader social sciences has not been entirely without merit. If at least the importance of attempting to understand the intersection between theory, methodology and empirical findings in relation to the way socio-political futures emerge from the past via the present has been made comprehensible, then this research project can be said to have been worthwhile. It is therefore to be

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[790] See Bernstein et al (2000) for more on 'wild cards'. This term can be seen as the scenario constructor's equivalent of Taleb's term 'black swans', in that it refers to the inclusion of less probable, possibly non-linear events in the scenario construction process.

[791] For example Ditrych (2012), which is based on Bernstein et al (2000). See also David P. Rapkin and William R. Thompson (2013) *Transition Scenarios: China and the United States in the Twenty-First Century*, Chicago: The University of Chicago Press. Unfortunately Rapkin and Thompson's book was published only as this thesis was being completed, so there was no time to analyse its conclusions regarding 'wild cards' and scenario construction in depth.

hoped that this thesis can stimulate other IR scholars and political scientists to take up the challenge of finding ways to study the future, both of China and the rest of the world.

In conclusion, some readers may think that little of substance has been revealed concerning China's future, particularly if one is of the opinion that the future is entirely unknowable. Even if this is the case – and I hope it is not – I believe the project is not without overall merit, for two reasons. The first of these is that the thesis has examined the current state of the study of the future in political science, IR and the social sciences in depth, establishing both the absolute necessity of considering future outcomes and considering the available research methods for doing so. Second, the typology of expert forecasts and views of China's future has greatly clarified the voluminous but rather scattered debate that has been taking place in the IR literature and elsewhere in recent years concerning the rise of China, allowing the reader to understand the experts' positions in relation to each other. If either of these two areas of the research were to stimulate further discussion and exploration, then this thesis could be said to have added at least something of value to the global debate about China's future as well as to the contested and controversial subject of the study of the future in the social sciences.

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