Part I

Foundations

1 Introduction

> Uncertainty appears to be a characteristic of all political life. Systematic political analysis can reduce some of that uncertainty.
>
> Robert Dahl, *Modern Political Analysis*

Uncertainty is ubiquitous, consequential, and ineradicable in political life. However, since antiquity, the puzzle of political uncertainty has often frustrated progress in social science theory and public policy. Uncertainty is clearly recognized today, in the turbulent world of party realignments, foreign regime changes, and post-Cold War politics, but many earlier epochs in the many-thousand years' history of politics have been similarly affected by political uncertainty. The fall of the ancient Babylonian or Roman empires, the Chinese Warring States period, or the collapse of the Maya states in Mesoamerica all occurred in periods of similar political uncertainty.

In this first chapter I introduce uncertainty as a fundamental property of politics, crossing the traditional sub-disciplinary boundaries of international and comparative or domestic politics, identifying major forms of uncertainty that invite a unified explanation across different areas of politics. I then lay down a system of axioms and explain the main parts of the general theory of politics presented in this book. Because this chapter is a point of departure, the main goal is to air some of the major issues, while leaving for subsequent chapters the more intricate task of detailing the theory and its application to various areas of political science. An important property of political uncertainty is its duality across levels of analysis, a feature that is evident in the main concepts, principles, and applications discussed throughout this book.

1.1 Politics and uncertainty

1.1.1 *Nature of political uncertainty*

Political uncertainty refers to the puzzling lack of sureness or absence of strict determination in political life. Elections, wars, governmental

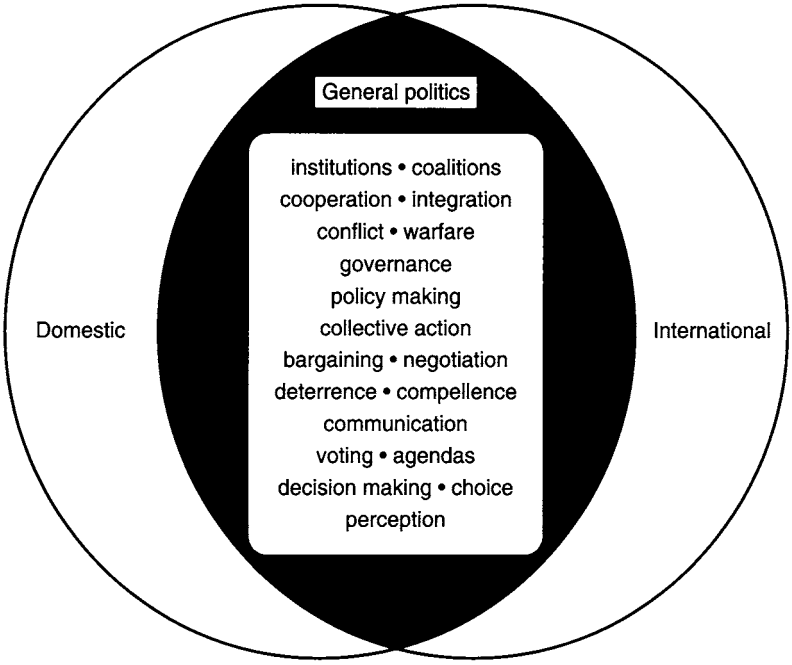

Figure 1.1. General and contextual areas of politics

processes, threats, collective action situations, and other political phenomena identified in figure 1.1 are all inherently uncertain political occurrences. My primary interest in this book is in these core phenomena of general politics, at the rich and fertile intersection of the domestic and international. For example, the uncertainty of coalitions is both domestic (cabinet governments) and international (alliances). The uncertainty of conflict has domestic (civil warfare), as well as international (interstate warfare) manifestations. The fundamental uncertainty of deterrence and compellence threats applies in both national and international contexts, as with other core phenomena in the domain of general politics. Of course, the context-specific details of domestic or international manifestations of these general political phenomena (conflicts, coalitions, deterrence, voting, communication, or others mentioned in figure 1.1) can be important as well, but the core phenomenon must be understood first. So, while often I shall use context-specific illustrations (e.g. interstate war in the next chapter), the main theoretical interest is in understanding the nature of uncertainty in general (context-free) politics.

Politics is fundamentally uncertain because it concerns social behavior "affecting the lives and fortunes of collectivities" or "how they are governed" (Brams 1985: chs. 1–2; Riker and Ordeshook 1973), how political systems are founded (Gerstein et al. 1988: 91; Taylor 1987), how a collectivity of individuals, groups, or states makes an "authoritative allocation of values" (Easton 1965), or how "collective action problems" arise and are managed (Olson 1965). Perhaps the most certain statement that can be made about these and other core puzzles of politics is that we never know for certain that they will happen. This is true in both contexts of politics – domestic and international, as indicated in figure 1.1.

Several extant definitions of politics make the role of uncertainty explicit:

> Political decisions can be defined as the "sovereign" collective decisions from which the individual is *less likely* to escape, because of both their spatial extension and their coercive intensity.[1]

Uncertainty means that in politics outcomes are neither predetermined (with probability 1) nor impossible (with probability 0), but lie somewhere in between. *Where* in between, and *how* and *why* are classic puzzles of politics, and the core questions I address with the new theory presented in this book. Were politics not perennially uncertain it would be like the world of eighteenth-century Laplacean mechanics – a world of lifeless pendulums and celestial orbits in which the future is exactly predictable once initial conditions are specified. Politics is fundamentally different because – as Aristotle would have put it – its uncertainty is essential, not accidental.

The fundamental cause of uncertainty in politics lies in the indeterminate nature of individual decisional acts and states of nature (lotteries) that are most commonly beyond the control of political actors, groups, or states.[2] These uncertain acts and events of normal social intercourse have significant effects on the life, fortune, or governance of collectivities – in other words, they are political. Unlike planetary orbits and other simple physical systems, the political behavior of individuals and collectivities is not

[1] Sartori (1973: 21), emphasis mine. Uncertainty appears as a constituent feature in numerous other definitions of politics, such as those by Almond (1990: 35), Easton (1965), Gilliant (1987), Masters (1989: 140), Merriam (1970), Moe (1990: 119), or Weber (1949). Uncertainty is also included as a substantive political property in traditional definitions of conflict (Blainey 1973; Howard 1983; von Clausewitz [1832] 1976: 89), as well as being "a noteworthy conclusion" in the cumulative domestic political conflict research program (Lichbach 1992: 348).

[2] By contrast, a classic example of deterministic *metaphor* in politics is the action–reaction model of conflict, where it is assumed that decision makers do not "stop to think" (Richardson 1960a: 12). See also Landau (1979: 78–102), Miller (1979), and Rapoport (1960: ch. 5) on the influence of physicalism on the theory and practice of politics, particularly the use of deterministic models (social physics).

governed by deterministic laws. Note that the indeterminacy of decisional acts and nature's lotteries covers both contexts of general politics – domestic and international.

I view the uncertainty of politics as having three constituent properties that motivate the need and suggest the opportunity for a general unified theory. First, political uncertainty is consequential, because uncertainty causes significant changes in "the lives and fortunes of collectivities" or "how they are governed" – changes that themselves take place with uncertainty from start to finish. Elections, crises, revolutions, public policy processes, wars, and other common political occurrences shown in figure 1.1 have this property, but so do less dramatic political events, such as town meetings, parliamentary hearings, or budgetary appropriations. Political uncertainty, often caused by incomplete information, can cause a coalition to be larger than just "minimum winning," or it can cause a collective action need to become a severe political problem, or it can cause voting agendas to become "multiple-stage" processes. In the area of collective action problems, it has been noted that

> the introduction of uncertainty yields a plethora of cases and few general results. Clear cut relationships between group size and collective rationality and/or group asymmetry are especially dificult to establish when uncertainty is present. (Sandler 1992: 90)

A better understanding of political uncertainty – its causes, properties, and consequences – can assist in establishing some general results for understanding collective action and related phenomena.

Recently, the uncertainties of the post-Cold War era have caused numerous changes in the foreign and domestic policies of many countries, as well as other no less significant changes in international institutions.[3] Clearly, uncertainty matters in politics. The principles presented in this book provide some general and specific results to understand the consequences of uncertainty.

Second, political uncertainty is ubiquitous, particularly since the "democratization or massification of politics" (Sartori 1973: 20). No area of politics – none of the themes in figure 1.1 – is immune from chance, just as gravity is everywhere in the physical world, or values pervade the ethical world. Coalitions, governmental policies, and conflict and cooperation are

[3] The effects of post-Cold War political uncertainty are numerous, both domestically (Giddens 1995; Gill 1994; Jones 1995; Landy and Levin 1995; Weisberg 1995), and internationally (Rosenau 1992; Russett and Sutterlin 1991; Singer and Wildavsky 1996). Similar uncertainties in politics earlier caused the development of the Concert of Europe (responding to uncertainty over emerging threats to international security) and the League of Nations (responding to uncertainty over the availability of permanent institutions for maintaining peace in times of crisis). Dahl (1984) and Nagel (1975) also use this consequential property of uncertainty in defining political power.

all affected by uncertainty. This property poses a considerable challenge because it can defeat theoretical efforts or lead to only abstract generalities lacking in empirical referents or concrete insights. However, political uncertainty is neither intractable nor all of one form, as I shall demonstrate, and discernible patterns can differ significantly between one form of uncertainty and another. The different patterns of political uncertainty – randomness is not all uniform – which occur within a system of principles constitute an important topic in this book. The ubiquity of uncertainty provides a valuable opportunity, not an obstacle for political theory.

Finally, political uncertainty is ineradicable, because nothing humanly possible can be done to eliminate it. Uncertainty is inexpungible from politics. At best, "systematic political analysis can reduce some of that uncertainty" (Dahl 1984: 6). Rather than ignoring or avoiding political uncertainty, the study of politics should therefore aim directly toward understanding it. My view is that these properties and others that I analyze in this book must be used constructively, as conceptual building blocks, to obtain some new insights into politics based on its inherent uncertainty, and to help integrate the core areas of general political research (the elements in the intersection of politics in figure 1.1) and increase the accumulation of knowledge in our discipline.

1.1.2 *History and political uncertainty*

The core properties of political uncertainty I have just highlighted – consequentiality, ubiquity, and ineradicability – were known to early political thinkers from both Western and Eastern traditions. Thinkers as dissimilar as Aristotle (in the *Politics*), Sun-Tzu (*The Art of War*), and Niccolò Machiavelli (*The Prince* and *Discourses*) recognized these constitutional features of political life and wrote about them extensively, if not theoretically. Also, since antiquity, these properties have been acknowledged in both contexts of general politics – domestic and international. For example, as described by Machiavelli ([1512] 1965: 897) in one of his *Familiar Letters* to Piero Soderini,

> Certainly anybody wise enough to understand the times and the types of affairs and to adapt himself to them would have always good fortune, or he would protect himself always from bad, and it would come to be true that the wise man would rule the stars and the Fates. But because there never are such wise men, since men in the first place are shortsighted and in the second place cannot command their natures, it follows that Fortune varies and commands men and holds them under her yoke.

Machiavelli's observation clearly covers both domestic and international politics, being a statement about general politics.

Paradoxically, political uncertainty remained an unsolved mystery throughout the Renaissance, in spite of scientific advances in understanding uncertainty through the concept of probability (Bochner 1966). None of the great classical political thinkers prior to the eighteenth century – occidental or oriental – developed a theory of political uncertainty. Political science might have evolved quite differently had Machiavelli studied Girolamo Cardano's *Liber de Ludo Aleæ* (The Book of Games of Chance), the first treatise on mathematical probability (Ore 1953).[4] Or, shortly after, had Thomas Hobbes (a friend of Galileo Galilei) used the mathematical theory of probability and the fledgling theory of social choice to formalize the *Leviathan* problematique – among sovereigns, state of war, and anarchy (Niou and Ordeshook 1990, 1994; Taylor 1987: ch. 7) – perhaps allowing political science to develop ahead of economics, no doubt with intriguing consequences. Many of the formal elements existed, although clearly not all (game theory). Unfortunately, Cardano's seminal work, unlike *The Prince*, was published posthumously in 1661, more than a century after Machiavelli's death, and probably not early enough for Hobbes to learn and apply.

In the Western world, the uncertainty of politics was first studied scientifically during the time of the French Revolution. This was due primarily to the pioneering work of giants such as Marie Jean de Condorcet, Pierre-Simon de Laplace, and Siméon Denis Poisson.[5] The scientific study of

[4] Machiavelli ([1512] 1965: 954) had a clear (if undeveloped) understanding of decision making under uncertainty, as evidenced by the following observation written to ambassador Francesco Vettori, his benefactor, on December 20, 1514:

> When a prince is forced to take one of two courses, he ought to consider among other things where the bad fortune of either of these can bring him. Then always, other things being equal, he ought to take that course which, if in the end it is bad, will be least bitter.

Similarly, in his second letter to Vettori, he notes:

> All wise men, when it is possible for them not to gamble all their property, are glad not to do so, and considering the worst that can come of it, they consider where in the evil before them the smallest evil appears. Because the things of Fortune are all doubtful, they will join willingly that Fortune who, doing the worst she can, will bring the least harsh end.

These and other observations clearly indicate that Machiavelli had at least an intuitive understanding – if not a formal mathematical grasp – of political decision making under uncertainty. Besides outlining the main structure of a decisional problem (the framework of alternatives, states of nature, utilities, and probabilities), both statements also reflect a clear understanding of risk aversion and what would eventually be formulated by Savage (1951) as the minimax regret criterion.

[5] Political uncertainty had been present much earlier, at least as a concept, in the works of Herodotus (*The History*) and Thucydides (*History of the Peloponnesian War*), both from the fifth century BC. However, it was not recognized as a worthwhile theoretical element in political theory until much later. After Machiavelli's reasoned analysis of *Fortuna politica*, the first scientific seminal works were produced during the Enlightment, by de Condorcet (1785), de Laplace (1812), and Poisson (1837, 1853). It was no coincidence that some of these scholars were also pioneers in the development of rational choice theories of politics, an area of the discipline with foundations in political uncertainty.

political uncertainty during the French Revolution was no accident, because the explosion in mass popular participation (Ortega y Gasset 1957) increased political uncertainty to what at the time must have seemed an all-time high, so that an unprecedented number of common people for the first time became involved in the affairs of government – the entire nation, as Napoleon would say. It was Poisson's scientific exchange with Laplace concerning the uncertain behavior of the newly formed popular juries that produced the now famous Poisson distribution.[6]

In the twentieth century, many of the seminal works that deal with aspects of political uncertainty have done so in a fragmented way that has overlooked the powerful unifying role of uncertainty in politics.[7] For example, as I show later in this book, the same basic structure and properties of uncertainty are found in political phenomena as diverse as the implementation of government policies (Landau 1973; Pressman and Wildavsky 1973), the problem of collective action (Olson 1965; Sandler 1992), or the onset and development of conflict.[8] In each case the behavioral outcome of these political processes – whether policy implementation, collective action, war, or any of the others in figure 1.1 – is governed by the same pattern of uncertainty and is therefore explained by the same political principles. Similarly, the probabilistic forces (risk hazards) that govern the onset and termination of wars[9] follow analogous principles to the forces that govern the rise and fall of governmental coalitions (Cioffi-Revilla 1984; King et al. 1990). The specific political structures and forces differ across contexts (domestic and international), but only in details. The general principles they obey are uniform.

For as long as politics has existed – during the past five millennia of human history (Cioffi-Revilla 1996; De Laet 1994), possibly longer – uncertainty has played an important causal role in explaining political behavior, often under the guise of "incomplete information" at the individual or group level (Ferejohn and Kuklinski 1990; McKelvey and Ordeshook 1986, 1987; Niemi and Weisberg 1972). Today, in the post-Cold

[6] Unfortunately, modern classic works in probability (e.g. Feller 1968; Parzen 1960) maintain the mistaken impression that the Poisson model was somehow imported into the social sciences from physics (e.g. where it is used to model radioactive decay). In fact the opposite is true. The Poisson model and many aspects of probability theory are mathematical developments inspired by the investigation of social phenomena, similar to deontic logic, game theory, decision theory, fuzzy sets theory, some aspects of graph theory, and catastrophe theory. Regrettably, I am not aware of any comprehensive survey of these branches of mathematics inspired by human (as opposed to physical) phenomena.

[7] Specifically, I refer to the following classic works: Arrow (1951, 1956), Black (1958), de Pietri-Tonelli (1941, 1943), Deutsch (1966), Downs (1957), Pareto (1897), Richardson (1919, 1952, 1960a, 1960b), von Neumann and Morgenstern ([1947] 1972), and Wright (1942).

[8] See Cioffi-Revilla (1987), Cioffi-Revilla and Dacey (1988), Deutsch (1978: 159), and Wright (1942).

[9] See Cioffi-Revilla (1985a, 1985c, 1989), Richardson (1960a), and Weiss (1963).

War age, uncertainty is viewed as "a prime characteristic of turbulent politics" (Rosenau 1990: 8), and continues to play a central role in the production of "collective goods programs" (Baron 1996). Political uncertainty lies at the very foundations of contemporary positive political theory, providing a basis for standard utilitarian choice theories (Lalman et al. 1993) and others based on different mechanisms (e.g. Beer et al. 1987; Quattrone and Tversky 1988; Stone et al. 1995). Mounting empirical evidence also suggests that political uncertainty, or "lack of structural clarity" (Singer 1989), may also be a significant cause of war in the international system (Burns 1958; McClelland 1968; Midlarsky 1975). Uncertainty is just as critical for understanding political cooperation: "Agreements that are impossible to make under conditions of uncertainty may become feasible when uncertainty has been reduced," and "information-rich institutions that reduce uncertainty may make agreements possible in a future crisis" (Keohane 1984: 246–7). Political uncertainty, along with pressure for compromise, causes interest groups to create bureaucracies "that undermine effectiveness and insulate against democratic control" (Moe and Wilson 1994: 5). Fortunately for the continued growth of political science, uncertainty per se does not place politics outside the realm of systematic inquiry. Rather, it provides an opportunity for developing political theory and advancing our understanding.

1.1.3 *Uncertainty and contemporary political science*

Although uncertainty is widely acknowledged as a defining and perennial feature in most areas of general politics (figure 1.1), much of contemporary political science in fact still uses a "variance" paradigm (Casti 1990; Mohr 1982) that tends to overlook uncertainty. Perhaps this is done in order to maximize parsimony at the expense of realism (Occam's razor), consistent with Dahl's epigraph at the beginning of this chapter.[10] In most standard approaches, uncertainty is not accepted as a hard fact of political life, which the political scientist tries to understand in a systematic fashion.[11] Rather, most extant frameworks often equate randomness (behavior governed by probabilistic causality, which is scientifically knowable) with haphazard behavior (behavior not obeying any systematic scientific laws, which is

[10] Influential works promoting the variance paradigm have been Blalock (1989), Shively (1989), and Tufte (1974).

[11] Interestingly, the roots of this perspective are also to be found in the Enlightment. For example, according to Elster (1993: 45), "Tocqueville argued that in democratic societies, stability requires an effort to banish chance, as much as possible, from the world of politics," while "to Veyne's mind, the greatest danger for authoritarian societies is a universalistic system of social mobility in which promotion is by merit rather than by chance." See note 2 above.