

CHAPTER 4

Balance of Power and Power Shifts: Global Interests at Stake

What made war inevitable was the growth of Athenian power and the fear which this caused in Sparta.

—Thucydides

Relative capabilities are widely acknowledged as one of the key factors that determine the outcomes of deterrence and other conflictual situations. In the general international relations literature, realism stands out for its central focus on the idea of power. The realist tradition gives us two opposite approaches to power distributions and war: the balance-of-power school insists on peaceful consequences of power equality, while the power preponderance, or, more accurately, the power shift school, finds this condition unstable and conducive to war. Thus, in the context of deterrence, realism provides us with two mutually exclusive precepts for conflict avoidance. According to the balance-of-power theory, we should not expect deterrence failure between two equal powers, while according to the power shift approach, the exact opposite is to be expected. This chapter first offers an analytical survey of these competing realist arguments, then empirically examines the effects of relative power on deterrence outcomes between major powers.

Balance of Power

The international relations literature was dominated for several decades by the classical realist approach, which states that a balance of power creates peaceful structural conditions (Morgenthau 1948; Waltz 1979). This approach was later challenged by power transition theory on both logical and empirical grounds (Organski 1958; Organski and

Kugler 1980). Related theories of hegemonic decline (Gilpin 1981; Kennedy 1987) and global cycles (Modelski and Thompson 1989) also attempt to demonstrate that the history and logic of major power relations run contrary to the classical realist model.

The arguments of both schools have been tested in formal models and systematic empirical analyses. The tests tend to grant greater validity to the power shift argument. Still, there are a number of strong adherents to the balance-of-power school who have shaped the modern study of international relations since the early postwar publication of Morgenthau's classic *Politics Among Nations*.

Although the balance-of-power notion was influential in establishing modern studies of international relations, the idea is quite ancient. In his mid-eighteenth-century political essay "Of the Balance of Power" (1742), English philosopher David Hume did not fail to observe that the *phrase* "balance of power" could have been the invention of later ages, but the very *idea* originated in ancient Greece as testified in the records of Thucydides and other Greek historians. Nevertheless, the *policy* of balance of power in the Western world was recognized only centuries later, specifically in Renaissance Italy. Machiavelli is often cited for his acknowledgment of the balance-of-power policy of his political master Lorenzo Medici, who, prior to the French invasion of 1494, wrote "*Italia era in un certo modo bilanciata*" ("In those days when there was a balance of power in Italy," 1950, 78). Equally famous in his lifetime, the Renaissance historian Guicciardini went a step further in his well-known *Storia d'Italia* by attributing "the foundations of the tranquility of Italy" to the fact that Lorenzo Medici "employed all his devices, means and directions that the things of Italy should be evenly balanced" (the first 1579 English trans. by Fenton, cited in Vagts 1948, 97). The idea that balance-of-power policy brings peace continued to attract many great intellectual figures from different epochs, including the modern realists.

Multiple Meanings

In his *Politics Among Nations* (1948), Morgenthau elevated the idea of power to the very core of the modern study of international relations, and balance of power became the central theory in modern realism. The problem that plagues balance-of-power theory, however, is that its key term carries many different meanings. As Claude (1962, 13) noticed, "the trouble with the balance of power is not that it has no meaning, but that it has too many meanings." Balance-of-power schol-

ars did not seem overly concerned to narrow down its meaning, and Morgenthau himself listed four different meanings of his central term: (1) as a policy aimed at a certain state of affairs, (2) as an actual state of affairs, (3) as an approximately equal distribution of power, and (4) as any distribution of power (1948, 134). Haas (1953) and Wight (1966) later developed their taxonomy of distinct meanings of balance of power as found in the literature, well illustrating the severity of the conceptual problem.

Distinct Meanings of the “Balance of Power”

Haas 1953, 447–58	Wight 1966, 151
1. Distribution of Power	1. An even distribution of power
2. Equilibrium	2. The principle that power ought to be evenly distributed
3. Hegemony	3. The existing (any possible) distribution of power
4. Stability and Peace	4. The principle of equal aggrandizement of the Great Powers at the expense of weak.
5. Instability and War	5. The principle that our side ought to have a margin of strength in order to avert the danger of power becoming unevenly distributed
6. Power Politics generally	6. A special role in maintaining an even distribution of power
7. Universal Law of History	7. A special advantage in the existing distribution of power
8. System and Guide to policy-making	8. Predominance
	9. An inherent tendency of international politics to produce an even distribution of power

Despite its diverse connotations, whenever the term *balance of power* is employed, it is most likely to be used to refer to the balancing policy or the condition of balance. Thus, Quincy Wright (1942, 2:743) filtered out two principal definitions from the array of different usages by distinguishing between the condition of balance (“static balance of power”) and the policy adopted by governments to maintain that con-

dition (“dynamic”). Going a step further, Wight (1966, 151) emphasized that the primary meaning refers to an even distribution of power, and Morgenthau (1948, 134) similarly clarified that “whenever the term is used without qualification, it refers to an actual state of affairs in which power is distributed among several nations with approximate equality.”

The Balance-of-Power Policy and Dyadic Condition

In his seminal work on world politics that laid the grounds for modern realism, Morgenthau distinguished between two methods of balancing: “The balancing process can be carried on either by diminishing the weight of the heavier scale or by increasing the weight of the lighter one” (1948, 172). The principle of “divide and rule” is the classic manifestation of the former method, while the latter method of adding power to the weaker nation can be carried out through a policy of territorial compensation, arms buildup, or alliances. Later advocates and critics of Morgenthau’s balance-of-power theory concentrated on his theory of balancing through alignments, though Morgenthau himself did not by any means exclude other balancing techniques.

One aspect of Morgenthau’s theory of balancing by means of an alliance was particularly criticized for its logical inconsistency. According to Morgenthau (1948, 187), one of the scenarios for the balance-of-power system “consist[s] of two scales plus a third element, the ‘holder’ of the balance or the ‘balancer.’ The balancer is not permanently identified with the policies of either nation or group of nations. Its only objective within the system is the maintenance of the balance, regardless of the concrete policies the balance will serve.” Organski (1958) was first to observe that the idea of equilibrium as the primary goal of a “balancer” is logically inconsistent with Morgenthau’s first principle of realism that considered all states equal in their primary motivation for power maximization. This theoretical incoherence led Organski and others to reconsider the very idea of the balance of power as a stable system and develop instead an entire range of power shift theories as an alternative explanation.

As for balance of power itself, recent literature has devoted greater attention to the methods of balancing versus bandwagoning. While *balancing* in the narrower sense refers to the process of alignment against the prevailing power or threat, the term *bandwagoning* is used to describe the process of siding with the strongest power or threat. Both Waltz (1979, 126) and Walt (1987, 33) maintain that balancing is

more common than bandwagoning, but Schweller (1994) found the reverse pattern in his historical analysis.¹

If Machiavelli was one of the first to recognize the official policy of power balancing in Lorenzo Medici's Italy, he was also one of the first skeptics concerning the prudence of such a policy:

In those days when there was a balance of power in Italy, this was doubtless well done, but does not seem to me to be a good precept for the present time, for I do not believe that the divisions thus created ever do any good; on the contrary it is certain that when the enemy approaches, the cities thus divided will be at once lost, for the weaker faction will always side with the enemy and the other will not be able to stand. (Machiavelli, *Prince*, trans. Ricci, 1950, chapter XX, 78)

Over the past two centuries, statecraft based on balancing policies has been lauded by such illustrious figures as Metternich, Castlereagh, Churchill, and Kissinger. It has encountered much skepticism as well. Even those scholars who advocated the balance-of-power approach moved in the direction of studying it as a situation or *condition* rather than as part of a nation's intentional *policy*. As a condition, balance of power can be conceived either as a dyadic situation between any pair of states or as a structural condition of the entire international system. It is interesting to note that most empirical research has applied a dyadic approach, while theoretical progress of the balance-of-power school has been mostly limited to structural analyses, as exemplified in the neorealist works (e.g., Waltz 1979).

Balance-of-Power Structures: Bipolarity versus Multipolarity

Neorealism, or structural realism, broadens the classical realist theory by focusing on the impact that system properties have on the probability of war.² Waltz (1979), one of the most influential neorealists, makes the case for a systemic theory of international politics, thus diverging from traditional balance-of-power theorists. Unlike Morgenthau, who considers balance of power to result from a state's policies, Waltz (1979, 119) maintains that "these balances tend to form whether some or all states consciously aim to establish and maintain balance, or whether some or all states aim for universal domination." Like other structural realists, he is more concerned with the impact of power

structures on states' behavior, rather than the reverse. In the structural approach, therefore, whether states consciously pursue a balancing policy or not is irrelevant for explaining the probability of peace or war.

One major debate in the structural balance-of-power approach is centered on the effects of polarity (i.e., the number of power centers in the system) on the probability of war. Morgenthau (1948, 332–35) and Deutsch and Singer (1964) advance an argument about the stabilizing effects of a multipolar balance of power. In this argument, shifting alliances are considered to be an important element of multipolar stability. On the other hand, Waltz (1964, 1979) develops a theory of bipolar stability in which the main source of power capabilities is internal.

It is interesting that there have been only a few attempts to analyze the balance-of-power structure deductively. Most formal models have found tripolarity to be the most stable system (e.g., Wagner 1986; Niou, Ordeshook, and Rose 1989). The equilibrium of Powell's game (1996), however, contradicts the expectations of both balance-of-power (bipolar or multipolar) and power preponderance theories, suggesting instead that stability is most likely when the expected benefits from war are not significantly different from the status quo distribution of benefits.

Empirically the results are inconclusive. Hopf's study (1991a), though restricted to the shorter period from 1495 to 1559, did not find any significant difference in warfare frequency between bipolar and multipolar European systems. Thompson (1986) and Levy (1984) obtained similar results over a longer time-span of nearly five centuries from 1494 to 1983. Ostrom and Aldrich (1978), on the other hand, found a curvilinear relationship between polarity and major power wars. Wayman (1984) reported mixed and quite distinct results. The number of wars was lower in a bipolar system if polarity was measured in terms of the individual capabilities of major powers. On the other hand, the magnitude of warfare decreased in multipolar systems if polarity was measured in terms of alliance clusters. The findings of Brecher, James, and Wilkenfeld's study (1990) were also mixed. While there was generally a lower frequency of international crises in multipolarity, in instances of major power crises the reverse pattern was apparent: major power crises occurred with less frequency in bipolar systems. Nevertheless, as Mansfield (1993) also points out, it is erroneous to assume that the poles are generally similar in their power base. That is, there can be both equal and unequal distributions of power between the poles in either bipolarity or multipolarity. As the fundamental premise of the balance-of-power theory is that war

becomes more likely when there are power inequalities, the neorealist focus on structural conditions (polarity) does not always have to be consistent with this premise.

For both theoretical and empirical reasons, a number of scholars shifted their analysis from the structural to dyadic level when considering the linkage between power distribution and international conflicts, including deterrence and wars. For example, in their extensive study, Bueno de Mesquita and Lalman (1988) did not find structural variables, including polarity, to affect the probability of war, further shifting attention from systemic to dyadic power distributions. The arguments of both the classical balance-of-power theory (Morgenthau 1948) and power shift theories are also essentially dyadic. For these reasons, most empirical research “has clearly favored dyadic over systemic explanations for understanding such key phenomena as the outbreak of war” (James 1995, 182). The dyadic approach is thus also appropriate for the empirical analysis in this book. Furthermore, deterrence is not a systemic property, and a systemic level of analysis could hardly be a valid choice for its empirical analysis. Before presenting the results of previous empirical tests based on a dyadic level of analysis and those of this study, major theoretical arguments of the power shift school need first be clarified.

Power Shift Theories

Organski (1958) was the first international relations scholar to challenge the balance-of-power paradigm. His power transition theory provided the foundation for the emergence of a number of similar theories jointly referred to as power-shift theories. Their common argument is that systemic instability and the likelihood of major wars do not decrease, but rather increase during periods of power parity when there are power shifts between major contenders in the system.³ Power preponderance, therefore, creates a much more peaceful structural condition. The preponderant nation is considered to be satisfied with its advantaged position in the system, while other major powers are not capable of challenging the established order. The Pax Britannica and Pax Americana offer historical evidence for this argument. By contrast, the condition of parity between two or more major powers is assumed to create a much less stable condition. Under such circumstances, more than one power is capable of assuming a leading role in the international system. The period of power parity, when a shift in

power positions occurs between a rising challenger and a dominant status quo power, is thus a period of competition for leadership and may be critical for systemic stability. The two world wars in the twentieth century are examples of the unstable nature of this condition as the rise of German power brought an end to the era of Pax Britannica.

Power shift theories may be classified according to the key notions they use to support their central argument: power transition (Organski and Kugler), hegemonic stability (Gilpin), global cycles (Modelski and Thompson), Kondratieff waves (Goldstein), and the world-system (Wallerstein, Chase-Dunn). In addition, there are several individual works that are not strictly classifiable under the power shift framework and yet they support some of its central tenets (e.g., Midlarsky, Blainey). After a brief survey of these theories, empirical evidence for the power transition model will be reviewed as this theory was most frequently examined within the power shift paradigm.

Power Transition

Power transition theory (Organski 1958; Organski and Kugler 1980; Kugler and Organski 1989) is often regarded as the most important challenge to the prevailing balance-of-power theory in the field (Morgenthau 1948; Waltz 1979). They differ in several critical respects (see also Kugler and Organski 1989).

First, the classical realist assumption regarding the anarchical nature of the international system is challenged by the alternative assumption that the international order is hierarchically structured (Organski 1958). In a hierarchical system, some states are presumed to be satisfied with their place in the system, while others are not. Satisfaction with the existing hierarchy is one of the critical factors in the power transition model. "Degrees of satisfaction as well as power are critical determinants of peace and conflict" (Kugler and Organski 1989, 173). Satisfied states do not, in general, initiate conflicts. A negative attitude toward the status quo distinguishes a potential Challenger from the order's Defender. In the classical realist model, however, where *all* states are presumed to be dissatisfied due to their constant security dilemma, preponderance in power capabilities is sufficient to provide an incentive to initiate war.

The second difference between the two theories lies in their disagreement over the question of what is the most destabilizing power distribution. In the balance-of-power framework where anarchy

reigns, states are seen as power-maximizers intent on preserving and enhancing their security. An advantage in capabilities facilitates the pursuit of this goal, making power preponderance a critical requirement for initiating a conflict. Inversely, parity constrains conflict initiation, thus creating a stable environment. Assumptions about the ordered nature of the international system bring power transition theory to the opposite conclusion about a more stable power distribution. Similarly to hegemonic stability and long cycle theories (Gilpin 1981; Modelski and Thompson 1989), power transition theory maintains that a large power gap dividing the dominant nation from the next layer of major powers facilitates maintenance of the international order, as created by the dominant nation. Instability arises when the power gap between the dominant nation and a challenger narrows. As Organski and Kugler (1980, 20) argue, “the source of war is to be found in the differences in size and rates of growth of the members of the international system.” It is precisely the competition for leadership in the international system between a declining status quo power and a rising dissatisfied challenger, commonly occurring when they reach parity, that creates the critical condition for the outbreak of major wars.

The third difference is that “the balance of power is a theory of *statics*, while the power transition is a theory of *dynamics*” (Siverson and Miller 1996, 58). Kaplan (1957) included dynamic changes in the balance-of-power systems, but he did not explain the underlying dynamics and reasons for such changes. Organski and Kugler (1980) overcame this limitation by pointing to the differential rate of growth between the status quo defender and challenger as a source of changes, leading to destabilizing power balances and violent power transitions.

Hegemonic Decline

Gilpin’s (1981) theory of hegemonic war is based on an important premise, one that also substitutes hierarchical order for anarchy in the international system. As he argues, “although the international system is one of anarchy (i.e., absence of formal governmental authority), the system does exercise an element of control over the behavior of states” (28). Gilpin further identifies analogous mechanisms of control in domestic and international systems. While the components of domestic systems consist of laws, property rights, the domestic economy, authority, and government, their international counterparts may be

found respectively in the rules of the system, division of territory, international economy, hierarchy of prestige, and great power dominance (distribution of power). According to Gilpin, the system is stable as long as the distribution of power is asymmetric, with a hegemon providing “public goods” to the system while, at the same time, designing other elements of the system to its own advantage. As both the system and its hegemon benefit from the asymmetric power distribution, there is an overall condition of “hegemonic stability.”

However, “once a society reaches the limits of its expansion, it has great difficulty in maintaining its position and arresting its eventual decline” (Gilpin 1981, 185). That is, the costs to the hegemon for maintaining order begin to exceed its revenues. Meanwhile, other powers, unencumbered by the costs of dominance, are able to rise relative to the hegemon. “In time, the differential rates of growth of declining and rising states in the system produce a decisive redistribution of power and result in disequilibrium in the system.” This “disequilibrium” is the result of a disjuncture between the new distribution of power and the other components of the system which were previously designed by the hegemon. Consequently, “a rising state attempts to change the rules governing the international system, the division of the spheres of influence, and, most important of all, the international distribution of territory” (185, 187). Gilpin points out that the disequilibrium is most likely to be resolved by a “hegemonic war,” unless the declining hegemon somehow succeeds in restoring the equilibrium. Yet, declining hegemons often fail in their attempts to restore the status quo peacefully.

Kennedy (1987) figures most prominently among historians whose argument is similar to Gilpin’s theory. In his sweeping attempt to account for the rise and fall of the great powers throughout all of human history, Kennedy attributes structural changes in the international system to the hegemon’s relative decline. This decline results from the hegemon’s “imperial overstretch,” which occurs as the military burden of maintaining hegemonic order and global interests weakens the economic base of the hegemon. As other great powers do not share the same military burden of maintaining the existing order, their economic growth accelerates at a faster pace and ultimately surpasses that of the hegemon. Kennedy’s goal was not to develop a general theory of war, but rather to offer an account of why empires eventually vanish, to be replaced by others that repeat the same cycle of rise and decline. Nevertheless, the logic of his argument is identical to the core assumptions found in power shift theories.

Global Cycles

Modelski and Thompson (1989) argue that the global system evolves through cycles, each approximately a hundred years in duration. Each period is seen as a four-phase process.

The phase of *Macrodecision* (global war) is marked by profound and severe violence, but it also settles the question of leadership. The *Implementation* (world power) phase sees one nation-state, which acts as a global leader, implement major new programs. In *Agenda setting* (delegitimation), questions are raised about the legitimacy of that leadership, and new problems enter the global agenda. In the phase of *Coalitioning* (deconcentration), leadership reaches a low point; it is an open season for challengers and for new coalitions. (24)

The theory is, therefore, more comprehensive in scope, aspiring to explain the history of the modern world system (since 1494) as a cyclical process. The explanation of global warfare is only one component of this larger framework, when it might occur in the “macrodecision” phase, which can be either violent or nonviolent (Modelski and Thompson 1989, 49). In any event, Modelski and Thompson do offer an explanation of system-transforming wars, as they interpret a “global war” as “a fight to determine the constitution or authority arrangement of the global political system” (Thompson 1988, 46). Like Organski and Kugler (1980) and Gilpin (1981), they also find the cause of major conflicts in an uneven rate of growth between the “world power” and the “challenger.”

On the other hand, they claim neither uncertainty nor the challenger’s intention to assume global dominance as the triggering factor for global war. That is, “global wars tend to begin as relatively localized affairs, becoming global in scope only after the globally oriented power(s) decides to participate. Thus, what we see in retrospect as a major challenge may not have been fully intended as one by the challenger’s decision-makers” (Thompson 1983, 349). The historical argument is that challengers, driven by their fast economic growth, sought mostly limited regional expansion. But if the challenger’s continental expansion comprised the core region of the global system, it was likely to trigger global war. The globally oriented world power, whose superior naval capabilities guarantee it a global reach, would then react

when it saw its leading position threatened by this continental expansion in “the active zone of the global system.”

Kondratieff Waves

Goldstein’s (1985) attempt to link the onset of major power warfare with the Kondratieff waves represents yet another cyclical approach to the study of major powers. In his analysis of the economic cycles of core states since 1495 (i.e., Kondratieff waves), Goldstein reports the occurrence of synchronic war cycles. More specifically, he characterizes economic long waves, each lasting about fifty years, as an alternation of downswings and upswings in prices. In search of a possible correlation between the economic phases and international warfare, he reports that “the upswing periods are characterized not by *more* wars than on the downswings, nor by wars that last much *longer*, but by *bigger* wars—six to twenty times bigger as indicated by battle-fatalities” (Goldstein 1985, 424–25). A further important finding is that only the wars between great powers are strongly correlated with the economic phase periods (425).

Goldstein does not consider economic waves as triggering factors for major power wars, but rather reverses the causal direction. Each war cycle ends with major power warfare and, since it occurs almost simultaneously with the end of an inflationary upswing in the economic cycle, Goldstein is more inclined to explain the Kondratieff waves by such wars rather than vice versa. He argues: “These observations, connecting war to major inflationary periods on long wave upswings, are consistent with the theory that wars *cause* long economic waves. However, . . . [o]ne must reserve the possibility of bidirectional causality between economics and war” (1985, 431).

Notwithstanding this apparently unresolved problem of causality, Goldstein’s analysis can still be interpreted as a contribution to the power shift paradigm of international conflict. In this respect, his important argument is that the upswing escalatory phase, which ends with major power warfare, is marked by “a shift away from unilateral leadership toward the classical rules of *power balancing* and alliance formation” (1985, 434).

The World-System

Wallerstein’s (1984) primary concern is to explain the history of the modern “world-system” in terms of the capitalist “world-economy” as

it emerged in the mid-fifteenth century. World wars are interpreted as periodic phases in the expansionary patterns of world capitalism. The main characteristic of the modern world-system is its division between core and periphery, with the productive superiority of core states giving them the means to exploit weak and peripheral regions. A single power, leading in industrial production, agriculture, commerce, and finance, is characterized by Wallerstein to rise above other core states as a hegemon. The productive, commercial, and financial superiority of the single hegemon coincides with periods of general expansion in the world economy. As the hegemon's costs of advancing its imperialistic interests begin to increase, its gains start to decline relative to the gains of other core states. Intensifying competition within the core begins to take place, occurring almost simultaneously with an emerging stagnation in the world economy. This overall stagnation follows from the previous expansionist phase as supply begins to exceed demand. Rival competition among the core states ensues as each core power attempts to restructure the world economy to its own advantage. This situation eventually leads to world wars, which Wallerstein interprets as the succession struggles that follow the relative decline of a hegemonic power.

Chase-Dunn's (1981) variant of the world-system perspective also ties a radical economic analysis to an explanation of major wars. In his theory, an uneven rate of economic growth between the declining hegemon and other core powers is also said to be at the root of "world wars." This process of changing power differentials in the core area results from the dynamics of capitalist development. As Chase-Dunn summarizes his argument:

The accumulation process expands within a certain political framework to the point where that framework is no longer adequate to the scale of world commodity production and distribution. Thus world wars and the rise and fall of hegemonic core powers can be understood as the violent reorganizations of production relations on a world scale, which allows the accumulation process to adjust to its own contradictions and to begin again on a new scale. (1981, 23)

Other Power Shift Approaches

Several authors develop arguments that do not strictly belong to any of the reviewed theories within the power shift paradigm, either because

they are more eclectic (e.g., “power cycle” developed by Doran 1989; see also Vayrynen 1983) or simply tangential to the paradigm (e.g., Midlarsky 1986, 1989; Blainey 1988). Regardless, their underlying ideas reinforce, at least in part, the power shift premise.

Blainey (1988), for instance, develops an argument that essentially opposes the balance-of-power idea. As he contends, wars break out when parties disagree about their relative bargaining positions, which are based on their power differentials. If there is a disagreement about relative power, implying uncertain chances of winning or losing, a peaceful solution to a crisis is less likely. Blainey’s approach, however, includes an important caveat to the strictly power-based premise: “It is not the actual distribution or balance of power which is vital: it is rather the way in which national leaders *think* that power is distributed” (1988, 114). For this reason, peace breaks out in situations of decisive power superiority, such as those emerging at the end of wars with recognizable winning and losing sides. What is implied here is that power proximity creates uncertainty concerning the relative strength of nations, and this situation makes war-triggering disagreements over bargaining positions more likely. Uncertainty, therefore, is a crucial ingredient in Blainey’s “perceptual” formulation of an essentially power preponderance argument.

Midlarsky (1986, 1989) develops the idea of “hierarchical equilibrium” to describe the conditions for systemic peace. Essentially, it is an attempt to reconcile balance-of-power and power transition theories, by positing that a stable international structure (i.e., hierarchical equilibrium) consists of:

- (a) two or more alliances (or other loose hierarchies such as loosely knit empires) of varying size and composition, but clearly including a great power and a number of small powers within each; and (b) a relatively large number of small powers not formally associated with any of the great powers. (1986, 82)

His model incorporates an element of power transition theory by requiring that “the power differentials *within* each hierarchy are substantial” (1989, 56). On the other hand, an element of balance-of-power theory is also incorporated through the requirement of rough power equality *among* multiple hierarchies. Midlarsky argues that only under these conditions can a dangerous interdependence of crises be avoided. Otherwise, the breakdown of a hierarchical equilibrium struc-

ture may lead to the accumulation of interdependent and unresolved disputes and their escalation to “systemic war.”

Power Balance versus Power Shifts: Empirical Evidence

Empirical evidence for either power paradigm has not been conclusive. Critical tests of parity and preponderance assumptions find support for each of them, but during different centuries (Singer, Bremer, and Stuckey 1972). Also applying a systemic analysis, Mansfield (1988) found a higher number of wars during unipolar periods when a hegemon was dominating the system, but Thompson (1986) and Spiezio (1990) report the opposite findings. Unlike the aggregate-level analyses, examinations of power distribution as a dimension of dyadic relationships gave more leverage to the power transition argument. While a few analyses failed to find a correlation between power parity and war (Ferris 1973; Siverson and Tenefoss 1984), most other tests reported a positive correlation (Garnham 1976; Weede 1976; Organski and Kugler 1980; Houweling and Siccama 1988, 1991; Moul 1988; Kim 1989, 1991, 1992; Bueno de Mesquita 1990; Gochman 1990; Bremer 1992; Bueno de Mesquita and Lalman 1992; Geller 1992; Kim and Morrow 1992; Lemke and Werner 1996; De Soysa, Oneal, and Park 1997; Werner 1999). In short, most of dyadic empirical analyses found parity or transition to be a necessary, but not a sufficient, condition for war.

It is important, however, to recognize that many of these tests used different research designs, different temporal and spatial domains, and different operational definitions of the independent and dependent variables. For instance, while the original version of the theory was designed to explain the behavior of major “contenders” in the system (i.e., only the upper layer of major powers), most empirical analyses examined the behavior of all major powers. Some analyses went a step further to test power transition in cases of smaller states (e.g., Garnham 1976; Weede 1976; Lemke 1996; Lemke and Werner 1996). The question can be raised then whether power transition theory can be considered as a *general* theory of war or, rather, as a more specific theory of *major power* or *system-transforming* wars. The temporal domain of these studies also ranged from the period 1648–1975 (Kim 1992) to the period 1969–74 (Garnham 1976) or 1950–69 (Weede 1976). Most analyses, however, use a time span from 1815 to 1975 (since the Napoleonic Wars). The original study by Organski and Kugler (1980)

looked at the period since 1870, the beginnings of modern industrialization for most major powers. The measurement of power, as a critical variable, was based largely on internal capabilities (GNP or, alternatively, the Composite Index of National Capabilities), although some studies also defined power in terms of alliances (e.g., Kim 1991). These and many other differences make it difficult to compare findings, but some generalizations can still be made in support of a principal line of the power transition argument.

Some empirical studies stand out for their theoretical ramifications regarding the transition argument. Bueno de Mesquita and Lalman (1992) augment power factors with the importance of domestic politics for foreign conflict behavior. But, generally, they do find that power transition theory fares better than the balance-of-power theory. Kim (1991) reports that parity and a challenger's dissatisfaction increase the likelihood of war, but transition and relative growth rates do not matter significantly. Moreover, he defines power in terms of alliances rather than just in terms of internal capabilities. Kim and Morrow (1992) make several extensions to the power transition model: they find that war is more likely during periods of equality, but that it will not occur unless the dissatisfied challenger is risk-acceptant, the declining defender is risk-averse, and the costs of war decrease as well. They also report that both the growth rate of nations and the transition point do not have an impact on the probability of war. Gochman (1990), however, reports a significant correlation between rapid rates of power change and the probability of war (see also Werner 1999).

In his formal derivation, Zagare (1987) confirms that war may occur only during parity, but adds that peace may also ensue if the revisionist power is risk-averse. Kugler and Zagare (1987, 1990) further elaborate formal specifications of and derivations from the model, and find that war is indeed more likely under parity, but only if both sides are risk-acceptant or one side is risk-acceptant while the other is risk-neutral. Common to both the empirical findings of Kim and Morrow (1992) and the formal analyses of Kugler and Zagare (1987, 1990) and Bueno de Mesquita and Lalman (1992) is the importance of a state's risk-propensity.

The level of satisfaction with the international order is a key element in the power transition version of power shift theory. Power transition is only a necessary condition for war, while dissatisfaction with the status quo is a critical requirement for these periods of transition to erupt into war (Organski 1958, 325–33). Despite its central place in the

theory, the issue of dissatisfaction was not originally tested (Organski and Kugler 1980) and was largely ignored in empirical analyses. Yet, all formal models of power transition point to the critical importance of the challenger's dissatisfaction (Kugler and Zagare 1987, 1990; Bueno de Mesquita and Lalman 1992; Danilovic 1996; Zagare and Kilgour 2000). Only recently there were several attempts to operationalize this concept. Operational definitions of dissatisfaction are still in the developmental stage and, so far, have included such indicators as similarities in alliance portfolios between the dominant nation and other powers (Kim 1989, 1991; Kim and Morrow 1992), money market discount rates (Bueno de Mesquita 1990), "frustration" resulting from "status inconsistency" (Danilovic 1996), domestic regime types (Lemke and Reed 1996), the rate of arms buildup (Werner and Kugler 1996), and related "extraordinary growth" of military expenditures (Lemke and Werner 1996).

The next chapter will offer a new, geopolitical approach to understanding the issue of dissatisfaction with the status quo as the critical variable for differentiating between peaceful and violent power distributions. Before moving to the geopolitical aspect of major power rivalry and deterrence, this chapter will outline the dynamics of power change in the twentieth century. The validity of the alternative arguments of the balance-of-power and power shift schools concerning deterrence outcomes will then be tested.

Power Trends, 1895–1985

National Power: Alternative Indicators

While there are several indices of power, most studies use the Composite Index of National Capabilities developed by J. David Singer in the Correlates of War project (also known as the COW index). The index is a combination of demographic, industrial, and military components and each component is presented with two indicators: (1) demographic size, measured by total population and urban population (cities larger than 20,000); (2) industrial potential, operationalized in terms of iron or steel production and energy consumption; and (3) military capabilities, indicated by size of the armed forces and military expenditures (in U.S. dollar values). For this study, the COW index for a major power is constructed as a percentage of the major power total for each indicator. These percentages are added and then divided by the number of

indicators. In other words, the index gives equal weight to each dimension of a nation's power potential.⁴

Although the index has been widely used in empirical analyses, an alternative measure would be a nation's gross national product (GNP) or its gross domestic product (GDP). It is interesting that Organski and Kugler's original formulation and test of power transition theory employs GNP as a power indicator, while most other studies that tested and largely confirmed their theory used the COW index. Merritt and Zinnes (1989) compared several power indices and found the scores for the most powerful nations to be twice as consistent between the indices as the scores for less powerful nations. Similarly, Lemke and Werner (1996, 246) report a high correlation between GDP and COW ($r = 0.85$) for great powers. On the other hand, Kugler and Arbetman (1989) found that the COW index and GNP measure the strength of most powerful nations differently. While they did not find such a variance for smaller major powers, the difference arises for major contenders mostly because of the explicit inclusion of military indicators in the COW index. Furthermore, De Soysa, Oneal, and Park (1997) report differences between major powers and contenders in their sensitivity to power measures. Specifically, they found support for power transition theory for all major powers when the COW index was used, but this support was lacking for contenders unless the GDP was used as an indicator.

The COW index is often chosen for empirical tests partly because GNP is still a somewhat unreliable indicator for several critical years for Germany and Russia/USSR. Data are scarce and largely missing for czarist Russia at the turn of the century (and earlier), and the Russian official statistical reports did not present the country's GNP during the Soviet period. Despite a few attempts to reconstruct the Soviet GNP (e.g., Maddison 1969), these data are not yet consistently reliable for the entire period. Most recently, Maddison (1995) produced a historical series of national gross domestic products for the Organization for Economic Cooperation and Development, which is also the main source of GDP data in this book.

The Dynamics of Power Rise and Decline, 1895–1985

Each major power's percentage share of their joint power potential, measured by the COW National Capability index, is presented for every five-year period in table 4.1. Figures 4.1 through 4.4 present the dynamics of relative power growth among major powers during the

entire period, showing the COW index as a composite score (fig. 4.1) and trends for its military and economic components (figs. 4.2 and 4.3, respectively). Figure 4.4 shows GDP growth for each major power, also presented as a percentage share in the major power total.

As indicated in figure 4.1 and table 4.1, several transitions occurred during the entire period if we measure power with the COW composite index. In the period 1895 through 1914, Germany passed Great Britain and Russia. Russia also reached Great Britain in its power potential, but Britain quickly regained a marginal advantage

TABLE 4.1. Percentage Distribution of the COW National Capability Index among Major Powers, 1895–1985

Year	U.S.	U.K.	France	Germany	A-H	Italy	Russia	Japan
1895	23.53	20.23	9.88	14.46	7.05	4.57	15.38	4.90
1900	22.20	21.03	9.89	16.16	6.23	4.13	16.11	4.26
1905	24.58	14.15	8.17	14.93	5.54	3.62	22.60	6.41
1910	26.39	14.09	9.38	16.91	6.20	4.34	17.58	5.11
1914	24.16	15.87	9.55	18.70	8.54	3.61	15.43	4.96
	U.S.	U.K.	France	Germany	Italy	Russia	Japan	
1920	34.55	24.09	6.51	4.18	4.98	18.20	7.49	
1925	33.63	13.99	10.04	11.23	5.89	17.82	7.41	
1930	30.95	11.72	9.81	10.80	6.16	23.02	7.54	
1935	25.65	10.09	7.60	14.05	8.76	26.01	7.83	
1939	24.22	12.74	5.73	23.98	4.45	20.55	9.33	
	U.S.	U.K.	France	Russia	China			
1946	60.74	12.02	1.81	23.61	1.83			
1950	37.82	9.14	4.91	26.52	21.62			
1955	38.60	8.20	4.90	27.88	20.42			
1960	33.44	6.88	5.56	27.26	26.86			
1965	34.25	6.67	4.97	28.69	25.42			
1970	32.85	5.89	4.53	30.01	26.72			
1975	28.62	5.35	4.43	33.50	28.10			
1980	27.46	4.69	4.72	33.97	29.16			
1985	26.13	4.10	3.89	35.57	30.32			
1990 ^a	30.29	5.14	5.31	29.43	29.82			
1995 ^a	35.25	5.65	5.87	12.56	40.67			

Note: All rows total 100 percent.

^aThe COW National Capabilities data are not available for 1990 and 1995. Figures for these years were calculated from the following sources: United Nations, *Statistical Yearbooks 1990/91, 1993, 1996, 1997* (New York, 1993, 1995, 1999, 2000); United Nations, *Demographic Yearbooks 1993, 1995, 1996, 1998* (New York, 1995, 1997, 1999, 2000); *SIPRI Yearbook 1999: Armaments, Disarmament and International Security* (Oxford University Press, 1999); *The Statesman's Year-book 1991–1992, 1996–1997, 2001* (New York: St. Martin's Press).

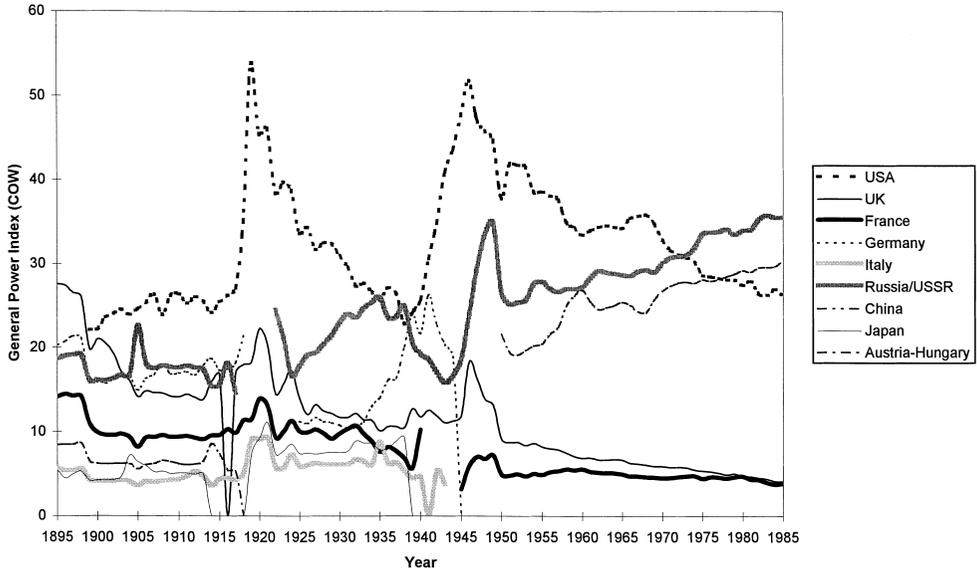


Fig. 4.1. COW national capability index of major powers, 1895–1985

over Russia. During the interwar period, Germany again passed both Britain and later the USSR in the 1930s. Power overtaking further occurred between Japan and France. According to the COW index, overtaking took place even during the Cold War period, with the Soviet Union passing the capabilities of the United States during the 1960s and early 1970s. China also passed the United States in the early 1980s according to the COW index.

On the other hand, military and economic components of the COW index (see figs. 4.2 and 4.3) show quite different trajectories for the rise and decline of major powers. The growth of military capabilities is more volatile, while economic growth seems to show less dramatic changes. The dynamic of GDP growth (see fig. 4.4) resembles that of the COW economic components (fig. 4.3), suggesting more stable developments in economic growth, though not always free from the incidents of power overtaking.

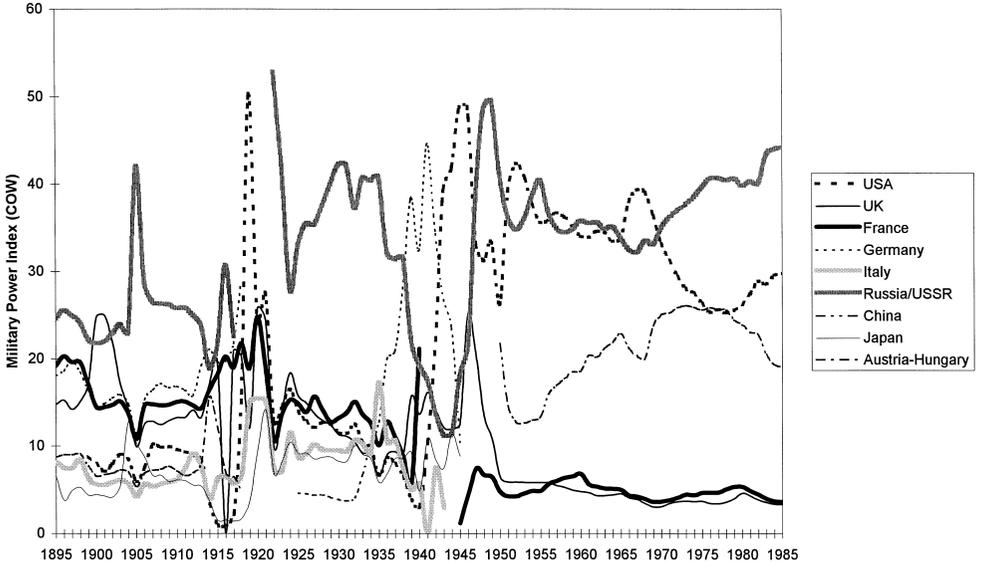


Fig. 4.2. COW military power index of major powers, 1895-1985

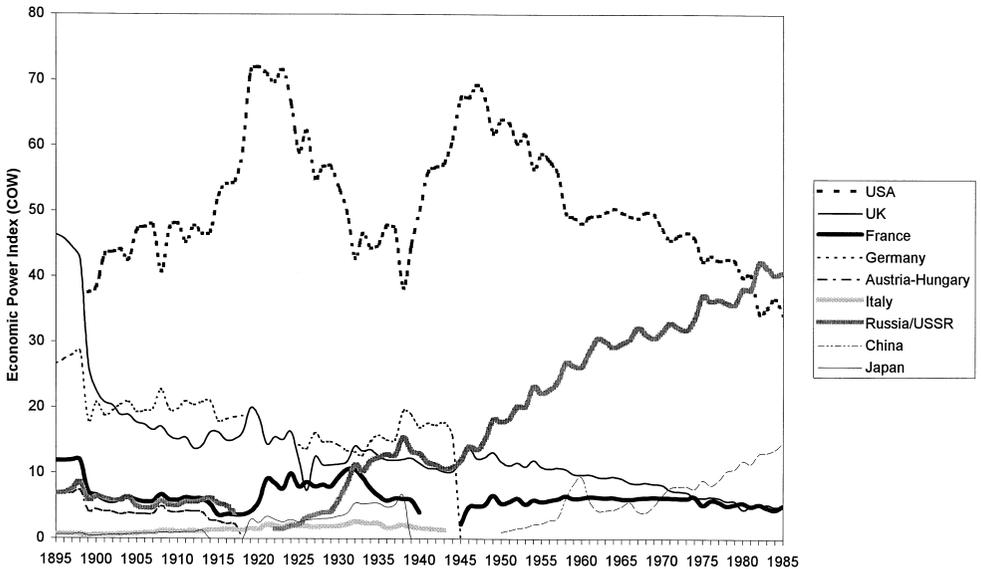


Fig. 4.3. COW economic power index of major powers, 1895-1985

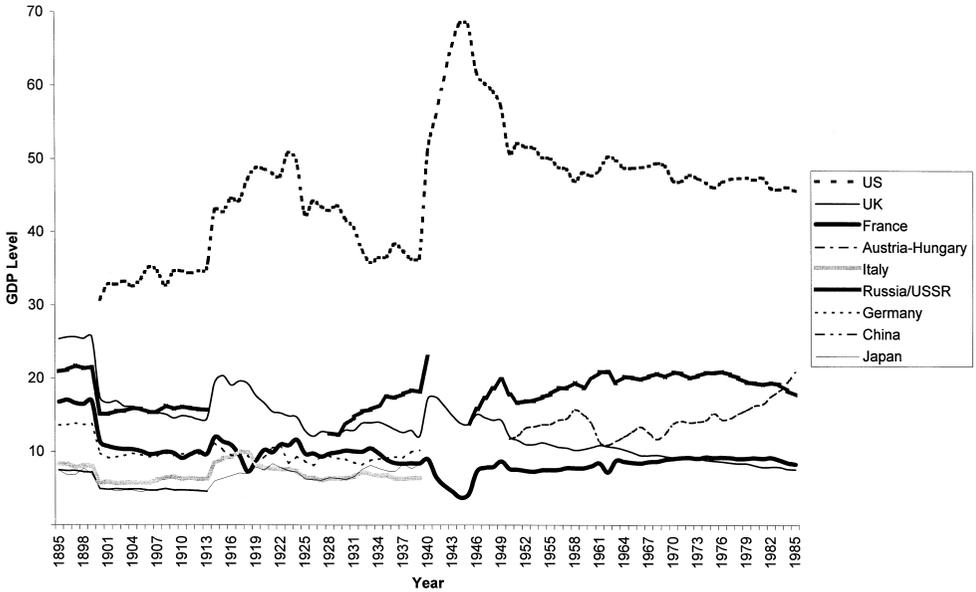


Fig. 4.4. Gross domestic product of major powers, 1895–1985

The Impact of Relative Capabilities on Deterrence Outcomes

A theoretical framework for explaining deterrence outcomes needs to incorporate both capability and credibility as key factors. As previously suggested, the deterrence literature has long focused on relative capabilities, neglecting the impact of the inherent credibility of threats on the probability of their success. The key argument in this book is that *both* are necessary to any explanatory framework of deterrence outcomes. This argument will be fully tested in chapter 7, while this and the following two chapters will examine the predictive power of each factor individually.

Measurements

Relative capabilities simply capture a major power’s strength relative to that of another power. It is commonly measured as the ratio of one side’s capability to the sum of both sides’ capabilities. The higher the value of this variable, the more powerful the country becomes relative to another. In this case, relative capability is measured by the ratio of the Defender’s capability to the sum of the Defender’s and the Chal-

lenger's capabilities. The value of the variable ranges from zero to one hundred indicating a relatively more powerful Defender as the value increases. As the variable's value decreases, the Defender's relative capability becomes either equal to or less than the Challenger's capabilities, with the point of parity at 50.0. The Challenger is vastly superior to the Defender if the variable's value is closer to zero.

The main power shift theories—power transition, hegemonic decline, and global cycle—all primarily focus on the top layer of great powers, which are identified as global contenders in chapter 2 (see table 2.5). Their theoretical arguments were later empirically extended to include other major powers and even nonmajor states. In order to examine whether the power shift argument is universally applicable to all major powers or rather restricted only to global contenders, my analysis presents empirical findings for both classes of powers.

Empirical Analysis

A brief descriptive survey of the power variable (see table 4.2) shows that the mean value for power distribution was close to parity with a relatively high standard deviation indicating adequate variance in the 70 cases of deterrence dyads.⁵ For the most part this trend is consistent across different power indicators and similar for both general contenders and major powers in general.

Table 4.3 presents a multinomial logit model of deterrence outcomes. As explained in appendix D, parameter estimates indicate the predicted marginal effects of each explanatory variable on the log-odds ratio between two outcomes in each possible pair of deterrence out-

TABLE 4.2. Descriptive Statistics for Relative Capabilities

Explanatory Variables	Mean Value	Standard Deviation	Minimum	Maximum	Cases
All Major Powers					
Defender's Relative Power (COW)	49.42	16.94	15.71	83.87	69
Defender's Relative					
Military Power (COW)	46.27	20.18	11.58	91.38	70
Defender's Relative GDP	56.18	18.87	18.71	83.15	68
Global Contenders					
Defender's Relative Power (COW)	48.68	10.99	19.29	69.59	40
Defender's Relative					
Military Power (COW)	45.29	13.08	12.75	70.65	40
Defender's Relative GDP	57.29	15.80	27.72	83.15	38

comes. The substantive impact of relative power on deterrence outcomes is assessed by means of the predicted probabilities of each outcome for different power configurations. They are calculated according to equations 1 and 2 (see appendix D) and reported in table 4.4.

Table 4.3 shows that relative power is a significant predictor of behavior given that the overall explanatory power of the model is strong (chi-square is significant regardless of power measures). However, the degree of significance for relative power varies for different pairs of outcomes. The most striking finding is that, almost uniformly across all three power measures, the significance of the power predictor is high only for those pairs of outcomes that include the Challenger's

TABLE 4.3. The Impact of Relative Power on Deterrence Outcomes for All Major Powers, Multinomial Logit Models

Variable	Compromise AcqCh vs. AcqDef		War vs. AcqDef	Compromise vs. AcqCh		War vs. Compromise
Model 1						
Def's Relative Power (COW)	.107 (.025)	.041** (.022)	-.034 (.027)	-.040** (.022)	-.075*** (.026)	-.035* (.028)
Constant	-.490 (1.228)	-1.010 (1.135)	1.206 (1.206)	.961 (1.137)	2.217** (1.162)	1.255 (1.211)
Model Chi-Square (df) = 12.008*** (3)						
Log Likelihood Function = -79.048						
N = 69 (missing data for 1 case)						
Model 2						
Def's Relative Military Power	-.017 (.022)	.023* (.018)	-.013 (.022)	-.040** (.019)	-.036** (.019)	.004 (.022)
Constant	.680 (.985)	-.039 (.889)	.448 (1.012)	.719 (.866)	.487 (.893)	-.232 (.967)
Model Chi-Square (df) = 7.218** (3)						
Log Likelihood Function = -83.334						
N = 70						
Model 3						
Def's Relative GDP	-.015 (.022)	.030* (.019)	-.004 (.022)	-.045** (.020)	-.034** (.019)	.011 (.023)
Constant	.554 (1.188)	-.650 (1.088)	.105 (1.198)	1.204 (1.098)	.756 (1.101)	-.449 (1.196)
Model Chi-Square (df) = 7.372** (3)						
Log Likelihood Function = -79.582						
N = 68 (missing data for 2 cases)						

Note: Numbers in parentheses are standard errors.
*p < .10; **p < .05; ***p < .01 (one-tailed t-tests).

acquiescence as an option. The direction of correlation indicates that the stronger the Defender is relative to the Challenger, the more likely it is that Challenger's acquiescence will dominate over all other deterrence outcomes.

Table 4.4 also reveals the limited explanatory power of relative capabilities in a substantive sense. It is the strongest predictor of outcomes under the condition of Defender's power superiority (e.g., a two-to-one ratio of capabilities to the Defender's advantage, as in table 4.4), when the Challenger's acquiescence is the most likely outcome. This predictive power declines as power shifts to the Challenger's advantage. For example, the probability of all four outcomes is almost even if the ratio of capabilities is two-to-one to the Challenger's advantage. In other words, if we consider relative power alone, as in the models presented in tables 4.3 and 4.4, either the results are less robust (as in the situation of the Challenger's power superiority) or, at best, they can provide only an intuitive finding (e.g., Challenger is likely to acquiesce when it is relatively weak). As for the parity condition, neither balance-of-power nor power shift theories were robustly confirmed or rejected. The results are again skewed to indicate the outcome of Challenger's acquiescence, the singular outcome that the power-based

TABLE 4.4. Marginal Change in the Probability of Deterrence Outcomes for All Major Powers

Power Distribution	AcqDef		AcqCh		Compromise		War	
	<i>p</i>	Δ	<i>p</i>	Δ	<i>p</i>	Δ	<i>p</i>	Δ
COW								
Defender's Power Superiority	12.50		70.29		12.79		4.42	
Power Parity	18.31	+5.8	51.94	-18.3	18.40	+5.6	11.35	+6.9
Challenger's Power Superiority	22.20	+3.9	31.76	-20.2	21.91	+3.5	24.12	+12.8
Military Capabilities (COW)								
Defender's Military Superiority	14.70		66.05		9.53		9.72	
Military Parity	17.44	+2.7	53.31	-12.7	14.94	+5.4	14.30	+4.6
Challenger's Military Superiority	19.13	+1.7	39.77	-13.5	21.64	+6.7	19.46	+5.1
GDP								
Defender's Superiority	15.69		60.58		10.13		13.60	
Economic Parity	19.65	+3.9	46.00	-14.6	16.25	+6.1	18.11	+4.5
Challenger's Superiority	22.42	+2.8	31.82	-14.2	23.76	+7.5	22.00	+3.9

Note: Power superiority is calculated as a two-to-one ratio of forces. Predicted probabilities of deterrence outcomes (*p*) are calculated according to equations 1 and 2 (see appendix D). The sum of predicted probabilities for all four deterrence outcomes should yield a total of 100 percent. The marginal change (Δ) presents a percentage change in the predicted probabilities from the value above in the table. For example, using COW measure, changing power distribution from the Defender's superiority to power parity increases the probability that the Defender will acquiesce by 5.8 percentage points.

model seems to explain best at the expense of its predictive power for the other three outcomes. Overall, the findings are neither robust enough nor sufficiently interesting to warrant the use of relative power alone for predicting major power behavior.

How much do the results change if we examine global contenders only? In terms of the direction of correlation, the patterns are largely similar to those obtained for other major powers. Both the probability of war and Defender's acquiescence increase as the power shifts from the Defender's advantage to parity, and further toward the Challenger's advantage. For example, using the COW National Capability index as an indicator, the probability of Defender's acquiescence increases from 2.05 percent to 36.10 percent as the power shifts from the Defender's to Challenger's superiority (see table 4.5). The trend is similar if we use the other two indicators, that is, only the military components of the COW index or, alternatively, the gross domestic product. The magnitude of change for Defender's acquiescence and war as deterrence outcomes, however, is much smaller than the magnitude affecting the probability of Challenger's acquiescence. As was also the case for other major powers, the probability of the Challenger's acqui-

TABLE 4.5. Marginal Change in the Probability of Deterrence Outcomes for Global Contenders

Power Distribution	AcqDef		AcqCh		Compromise		War	
	<i>p</i>	Δ	<i>p</i>	Δ	<i>p</i>	Δ	<i>p</i>	Δ
COW								
Defender's Power Superiority	2.05		70.31		27.17		0.47	
Power Parity	15.09	+13.0	47.14	-23.2	29.89	+2.7	7.89	+7.4
Challenger's Power Superiority	36.10	+21.0	10.26	-36.9	10.67	-19.2	42.97	+35.1
Military Capabilities (COW)								
Defender's Military Superiority	9.09		74.51		12.98		3.41	
Military Parity	16.74	+7.6	48.80	-25.7	23.91	+10.9	10.55	+7.1
Challenger's Military Superiority	22.10	+5.4	22.91	-25.9	31.58	+7.7	23.41	+12.9
GDP								
Defender's Superiority	13.27		55.06		15.55		16.12	
Economic Parity	22.18	+8.9	35.47	-19.6	25.32	+9.8	17.03	+0.9
Challenger's Superiority	31.12	+8.9	19.18	-16.3	34.60	+9.3	15.10	-1.9

Note: Power superiority is calculated as a two-to-one ratio of forces. Predicted probabilities of deterrence outcomes (*p*) are calculated according to equations 1 and 2 (see appendix D). The sum of predicted probabilities for all four deterrence outcomes should yield a total of 100 percent. The marginal change (Δ) presents a percentage change in the predicted probabilities from the value above in the Table. For example, using COW measure, changing power distribution from the Defender's superiority to power parity increases the probability that the Defender will acquiesce by 13.0 percentage points.

escence increases if the power shifts in the Defender's favor. These patterns for global contenders remain unaltered and follow the same intuitive logic found for the rest of the powers. More important, the findings show that war does not necessarily become more likely if the global contenders become equal in their capabilities. On the other hand, the correlation between compromise and relative power slightly changes, becoming curvilinear for the COW overall measure.

Overall, in light of these results, it is difficult to provide any definite answer to the question of whether power parity or disparity creates unstable conditions, leading to deterrence failure. Relative power is a strong predictor of behavior, but only for less complicated situations. For example, when the Defender has the power advantage, the Challenger's acquiescence is not a surprising outcome. For more precarious situations, however, the search for additional factors is warranted.

After all, as Bueno de Mesquita (1989) noted, the key difference between the balance-of-power and power shift schools lies in their opposing *implied* assumptions about the ways that individuals respond to uncertainty.

According to many balance-of-power theorists, for instance, the incentive to wage war is diminished by the belief that the chances for success are only fifty-fifty. This is similar to the statement that decisionmakers facing the choice of waging war act as if they are generally risk averse. Conversely, many preponderance theorists seem to subscribe to the belief that war is most likely when opposed forces are roughly equal, implying that decisionmakers generally act as if they are somewhat risk acceptant. (154)

In other words, both theories assume "uniform responses to uncertainty or to risks" (Bueno de Mesquita 1989, 154), which is very restrictive. Thus, any power-based argument can only be partial, as it assumes away the variation in people's propensities toward risk, their different degrees of willingness to bear the costs of action, and any other aspect of variation in individual responses to risk. As argued in the introduction, an actor's *willingness* to carry out a threat is an essential requirement for deterrence provided it also has sufficient capabilities to carry out such a threat. The next three chapters will examine the degree to which the inclusion of the factor of willingness can correct for the presented inconclusive empirical findings regarding the impact of relative capabilities on deterrence outcomes.