CHAPTER 7

The Power Transition: A Retrospective and Prospective Evaluation

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INTRODUCTION

The power transition theory was introduced in 1958 (Organski 1958), and **30** years seems an appropriate period for an initial evaluation of the scientific worth and staying power of a new idea. In such an evaluation, one can use the Lakatos criteria:

> **A** scientific theory T is *falsified* if and only if another theory T' has been proposed with the following characteristics: (1) T' has excess empirical content over T: that is, it predicts *novel* facts, that is, facts improbable in the light of, or even forbidden, by T; (2) T' explains the previous success of T, that is, all the unrefuted content of T is included (within the limits of observable error) in the content of T'; and (3) some of the excess content of T' is corroborated. [Lakatos 1978,321

In such an evaluation two sets of things must be asked. Has the new construct, model, idea, or theory provided an explanation more powerful and more parsimonious than what existed previously? Has this way of looking at the problem proven more valid than the alternatives? One can add questions to the ones already posed. Has the new idea influenced the creation of other ideas and the undertaking of new work? Are such extensions successful? It should be kept in mind that the set of ideas that has

survived the test of time is a very biased sample. The number of good ideas is very small, and among that set many are ignored for reasons other than their intrinsic merit. An evaluation such as this is inevitably reserved for the lucky few that become visible enough to warrant consideration. Yet, not all is simply a matter of luck.

Clearly, a significant idea will have illumined new ground. It will have suggested what new materials should be dug up, where such materials are to be found, and how the digging can best be done. Significant work makes one of these contributions, excellent work makes two, and path-breaking work makes all three. We know that scientific ideas that induce path-breaking research cannot survive the test of time unchanged. The best, however, will find a permanent niche in the theoretical development of a given discipline. It is by such criteria that we will gauge the impact of the power transition theory on the field of international politics.

THE POWER TRANSITION

The power transition model described the international system in a sharply different way that had been previously conceived. Power transition rejected three fundamental assumptions imbedded in the realist angle of vision about world politics.

First, the international system had been conceived as a world governed by few rules, a world in a state of partial or total anarchy. Power transition sees the international order not as anarchical at all, but as hierarchically organized in a manner similar to the domestic political system. Actors accept their position in the international order and recognize influence based on differences in the power distribution among nations. This fundamentally different assumption separates power transition from preceding realist models.

Second, the power transition conceived the rules governing the domestic and international political system as fundamentally similar. Despite the absence of an enforceable code of international law, there were no major differences in the rules governing the domestic and international arena. Nations, like political groups in the domestic system, were in constant competition over scarce resources in the international order.

Third, power transition conceived international competition as driven by the potential net gains that could be accrued from conflict or cooperation. The objective of nations was not, as the balance-of-power theory argued (Morgenthau 1948), to maximize power; rather, the objective was to maximize net gains. Peaceful competition ensued when parties agreed

that the net gains from conflict were inferior to the net benefits; conflict emerged when the opposite was true (Claude 1962; Organski 1958; for a current review of realism see Keohane 1986).

Armed with these few fundamental assumptions, power transition produced a dramatically different view of the workings of the international order than alternate realist perspectives.

Hierarchy, Power, and the Status Quo

To explore the power transition model, one can start with its perspective of hierarchy in the international order. At the top of the hierarchical pyramid is the dominant nation that, for most of its tenure, is the most powerful nation in the international order. Today that nation is the United States, and its predecessor was England (Kugler and Organski 1989; see also Gilpin 1981; Keohane 1980). Below the dominant nation are the great powers. As the name implies, these are very powerful countries that cannot match one on one the power of the dominant nation at a given point in time, but have the potential to do so at a future time. Among them is to be found the eventual challenger of the international order. Below that group are the middle powers, further down still are the small powers, and at the bottom are colonies, which have today all but disappeared. Figure 7.1 provides a sketch of this perspective.

Power transition maintained a strong connection with the realist perspective on international politics by stressing that power is a critical variable shaping the way in which the international order functions. Yet this is not a power-maximization model. Satisfaction with the way goods are distributed in the international order is the second critical determinant of how smoothly the international order operates. Degrees of satisfaction as well as power are critical determinants of peace and conflict. Great nations that support the international order are allies of the dominant nation and help determine how smoothly the system runs. Indeed, peace in the international order is assured by the dominant nation with the support of the great powers that are satisfied with the distribution of benefits and the rules by which it is run. For this reason, power transition conceives of alliances as stable and reliable instruments created to support the international order that cannot be easily altered in the short run (for alternate assumptions about alliances see Morgenthau 1948).

Of course, not all nations are satisfied with the way the international order functions and the leadership of the dominant nation. The elites of some nations are dissatisfied because they do not believe they and their societies are receiving their due from the international order. The number of

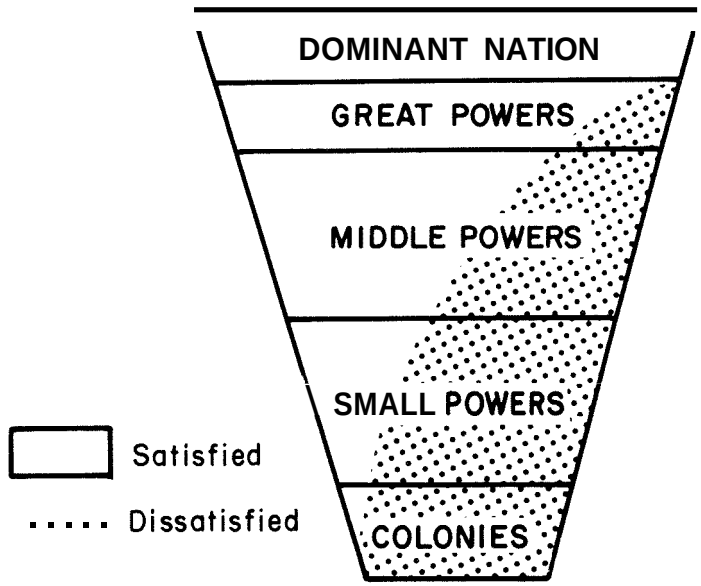

FIGURE 7.1. *Hierarchical distribution of power in the international order. From Organski (1968).*

such countries may be large. Whenever the dissatisfied nations are weak, however, they cannot (in isolation or by combining with each other) pose a threat to the dominant nation and the coalition supporting the international order. Only rarely—when the dissatisfied nation is also a great power that has managed to catch up with the dominant nation—is the setting created for challenges that lead to major conflict.

Challengers are those powerful and dissatisfied great nations who have grown in power after the imposition of the existing international order. Their elites face circumstances where the main benefits of the international order have already been allocated. The conditions for conflict are present. Peace is threatened when challengers seek to establish a new place for themselves in the international order, a place to which they believe their increasing power entitles them.

Note that, as illustrated in Figure 7.1, the conditions for a peaceful international order are present when the dominant nation has a large power advantage over any other single nation and most combinations of countries dissatisfied with the status quo in the second tier. For this reason, during periods of preponderance the international system is peaceful and stable. **To** ensure the smooth running of the international order, however, it is very important for the dominant nation to have the support of most great

powers. As a rule, most great powers *are satisfied* with the way the international order is run. Today, for instance, supporters of the United States-led international order include Germany, Japan, England, France, and Italy. The Soviet Union and China are potential challengers, but they are in direct competition with one another and, very importantly, are also much weaker than the United States (Kugler and Organski 1989). India is still a very weak country unable to challenge the great powers. Clearly, even if only Japan and the European countries support the United States, the preponderance of resources—short of nuclear weapons—favoring the international order is massive (Kugler and Organski 1989). Thus, power transition contends that the international order is, as it should be, stable, as it has been since 1945 because of this massive power preponderance in support of the status quo.

Figure 7.1 indicates that instability is likely only during periods of relative parity among potential competitors. As a dissatisfied great nation approaches parity by growing in power more rapidly than the dominant nation, instability increases and so does the probability of conflict. The closure of the power gap engenders fear on the part of the leaders in the dominant nation that the challenger will (1) surpass the dominant country, (2) become increasingly unwilling to accept a subordinate position in the international order, and (3) challenge the leadership and rules of the international order. And this, in fact, is very likely what the challenger will do. Thus, power transition argues that competition for dominance in the international order is finally joined when the dissatisfied party anticipates greater benefits and privileges if a conflict is successfully waged than if the current status quo is preserved. Concurrently, the dominant nation, recognizing the reality of the changing power relationship, prepares to resist such change. World wars are rooted in such relatively rare conditions (Organski 1968, 364–367).

Before we turn to the empirical tests of some of these propositions, it is useful to contrast power transition with the alternative realist positions.

NOVEL PROPOSITIONS IN THE POWER TRANSITION

To understand how radical a break the power transition theory represents, it will be helpful at this point to compare this view of the international order with that of the balance-of-power theory. When the power transition was first presented, collective security was also a viable, alternate model seeking to account for the connection between the distribution of power and the presence of conflict or stability. Collective security, however, was always

far more prescriptive than explanatory and has since lost ground (Carr **1945;** Claude **1962;** Organski and Kugler **1980).** Balance of power, on the other hand, despite very limited empirical scrutiny, was and remains the most widely accepted explanation of the way international conflict and stability emerge in the international order (Morgenthau **1948;** Kissinger **1964;** Waltz **1979;** Siverson and Sullivan **1983;** Keohane **1986).**

Balance of power, as the label implies, proposed that an equal distribution of power leads to peace and an imbalance brings about the necessary conditions for war. Nations were expected to attack when they were stronger than an opponent. The reason balance-of-power theorists reached this conclusion is that in an anarchic international order all nations wish to increase their absolute power, and the main way in which this could be accomplished was by defeating others and imposing one's preferred outcomes on the vanquished. Hence, instability would occur when one side gained a power advantage.

The function of alliances was to preserve parity of power among the competing coalitions of great nations and provide the weaker states with sanctuary. Under conditions of power equality a great nation could not attack other great powers or their smaller allies and expect to obtain major concessions through war at low absolute costs. A balance of power ensured peace not because nations were satisfied with the status quo—none was—but, rather, because war under conditions of power equality meant that the absolute costs of war could be expected to be very high. In sum, balance of power presented the international order as anarchic and intrinsically competitive, a system in which individual nations seek to maximize power and were restrained from aggression because the opponents were just as strong.

The balance-of-power perspective differs from the power-transition model in fundamental ways. Balance of power views the power of states as largely manipulable through coalitions. Indeed, from the perspective of balance of power, the power of nations remains roughly unchanged, and if any such shifts do occur, they can be easily compensated for by restructuring alliances. A state could marginally expand its power by increasing its military strength, but a government could do very little to alter fundamentally and dramatically a nation's ability to impose its preferences on the rest of the international order (Knorr **1956).** Alliances become the key to understanding conflict in the international order because they are the major source of variations in power. This viewpoint resulted in a focus on diplomats and diplomacy as the mechanism that could ensure the key values of international politics: peace and security (Morgenthau **1948;** Kissinger **1979).** It should be noted that the view that domestic growth could only marginally affect the international order is far more congruent with the

preindustrial period than it is with the world today. Prior to industrialization there was little that national elites could do to enhance their power other than to ally themselves with other states.

From the viewpoint of power transition, on the other hand, changes in the international power structure were, in all significant respects, the result of the domestic developmental process. Thus, the significant data for the discussion of power relations were the shifts from primary to secondary to tertiary production, variations in movement of fertility and mortality from high to low rates, the increase in the ability of the political system to mobilize resources, and differences in the social mobility of populations. Maintaining the international order was conceived not as a global chess game where the power of actors is relatively fixed and changes in alliances are critical, but as adjustments to the dynamic changes induced by differential growth rates across countries over time. Because of such different conceptions of the international order, one should not be surprised that, as we will see, the prescriptions for preserving peace also differed radically.

The balance-of-power and the power-transition models also differed in their assumptions of the goals that nations pursue. Balance of power assumes that the central goal is to maximize power and that all nations will take advantage of preponderance to impose their will on others. Power transition, as we have seen, recognized the existence of a power hierarchy that provides structure for the international order and attributes peace to the power advantage of the dominant nation and the support for the international order by the satisfied nations. It is common to think of the differences we have discussed as simply different assessments of the power distributions required for stability and conflict in the international system. But they are more than that. The disagreement regarding the relationship between power distribution and the cause of major war are merely a reflection of the profound differences between the balance-of-power and power-transition theories regarding the willingness of national elites to maximize absolute or net gains. The logical implications of this fundamental difference will be discussed further when we assess the implications of each theory for deterrence. Before we move on, however, a clarification is in order.

The Power Transition and the Overtaking Pattern

This review provides an occasion to address a popular misconception regarding the dual role played by the notion of transition in the theory. The transition is always taken to refer to the overtaking process where a

challenger catches up with and passes the dominant nation. When the model was first presented the conception of the "transition" referred to the domestic changes that take place when it moves from underdeveloped to developed status. Organski (1958) postulated that the transition process was composed of three stages. An underdeveloped country is in the stage of power potential: all of the power that its government can derive from modernization lies all in the future. As the country begins to develop, economic changes are accompanied by profound social and demographic changes that increase greatly the pool of human and material resources exposed to governmental penetration and extraction. These are the sources of major power changes that a nation experiences as it passes through the stage of the power transition. When a country is fully developed it reaches the stage of power maturity and slows down in its overall power growth.

As nations move up from stage one, they leave behind the countries that have not begun their development. As new countries develop, they catch up to those that have developed earlier. The reason developed countries in the stage of power maturity are caught by those undergoing the transition is that mature, developed nations have already used up the power potential to be gained through development. If a latecomer is very much larger and grows at faster rates than the nations that developed earlier, it will inevitably overtake the nation that had developed earlier. It is the domestic transition from stage to stage that leads in some cases to the overtaking of one great power by another in the international order, which sets up the conditions for major conflict. Thus, the overtaking process at the international level is an externality of the domestic transition. This conception has left an important imprint on the discipline, particularly in what has now become known as hegemonic stability theory in the new emphasis on political economy. Gilpin (1981), for example, presents a very similar picture of the international order, suggesting that large nations in their youth increase their power but slow down once they become a mature hegemon. Using Olson's collective goods perspective, Keohane (1984) argues that a "hegemon" declines because of the burden imposed on it by the need to maintain the international order. While very distinct paths are used in these newer attempts to explain rate changes in the power of competing nations, in many ways these models appear to differ from the core elements in the power-transition model only by nomenclature. The "dominant nation" is a clear precursor of the "hegemon," the "international order" is the antecedent of an "international regime," and, perhaps most importantly, parity in power is seen by both theories as the condition for major conflict (Organski and Kugler 1980). At this point it seems proper to turn to the empirical record accumulated over the last 20 years regarding power distributions and conflict.

EMPIRICAL EVALUATIONS

The lnitiation of Conflict

A fundamental and testable difference between power transition and balance of power concerns prediction about conflict over control of the international order. Despite its influence, balance of power has been exposed to a very limited number of empirical tests, and, with a few exceptions, most of these have produced negative or contradictory results (Ferris 1973; Midlarsky 1981, 1983; Singer ***et al.*** 1972; Siverson and Sullivan 1983; Bueno de Mesquita 1981).

Empirical tests by Organski and Kugler (1980) show that the insights of the power transition are far more likely to be valid (see also Thompson 1983a and Houweling and Siccama 1988). In Table 7.1, the analysis of relations among great powers that comprises a small set of the possible dyads over the last century and a half shows the power of this inference.

Table 7.1 makes two fundamental points. Preponderance by the dominant power insures peace among great powers, while a balance of power may lead to either conflict or peace. Clearly, the necessary but not sufficient conditions for major war emerge only in the rare instances when power parity is accompanied by a challenger overtaking a dominant nation. The odds of a war in this very reduced subset are 50 percent. No other theoretical statement has, to our knowledge, reduced the number of cases to such a small set, and no other is so parsimonious in its explanatory requirements (for alternatives see Bueno de Mesquita 1981).

One should note that when power parity among major contenders is

TABLE **7.1**
Great Powers, Power Distribution, and Major War, 1860–1980[a]

		Relative power distribution		
		Preponderance	Parity no transition	Parity and transition
Major war				
	No	4 (100%)	**6** (100%)	5 (50%)
	Yes	0 (0%)	0 (0%)	***5*** (50%)

SOURCE: Organski and Kugler (1980, 42–53, Table 1.7).
[a] $N = 20$, tau $C = 0.50$, significance $= 0.01$.

present, war is avoided two thirds of the time. Major war, however, was never waged in the past 100 years when the dominant power was preponderant. Preponderance appears to provide the most stable condition for the international order.

There are obvious drawbacks to the story presented in Table 7.1. First, the number of major wars is so small that chance may have produced these effects. Because the universe of cases is used for the 1870–1980 period, however, such a question can only be answered as additional historical data become available, particularly for the period of the Napoleonic wars. More importantly, the power transition suggests that, during the rare periods when a challenger overtakes the dominant nation, war will be waged only if the potential challenger is dissatisfied. Tests of the theory thus far, however, have not included explicit measures of satisfaction with the status quo. It is perhaps easy to persuade oneself that Germany was a dissatisfied power prior to the Franco–Prussian War, World War I, and World War II. But did the United States support the status quo when it overtook England in the 1870s? Was Russia satisfied with the international order when it matched England in power prior to World War I? It may well be that when satisfaction with the status quo is operationally defined, a sufficient explanation for major war will be approached. This may not be sufficient, however, because extensions of power transition in the context of deterrence (reviewed later) and the current work on expected utility suggest that, along with dissatisfaction, a separate concept of risk may be required to specify this model fully (Kugler and Zagare 1987a; Bueno de Mesquita and Lalman 1986).

Before turning to an empirical comparison of the implications of balance of power and power transition, we wish to bring up why we think such great differences in interpretation exist between the two models.

The Likely Source of Disagreement between Balance of Power and Power Transition

One is puzzled by the question of how is it possible that scholars, those who espouse the balance of power and those who favor the power transition, see the international order as working so differently. One can only guess why the differences arose. The "reasons" we advance are linked to when each model was elaborated. We think that the key to the different perspectives espoused by the backers of the balance-of-power and the power-transition models is to be found in the moment when the two models originated. Although the balance of power is an ancient idea that goes back to the politics of the Italian city states, was revived and modernized by the British

TABLE *7.2*
Percentage Distribution of Gross National Product among the Major Powers, 1870–1980[a]

Year	United States	Japan	Germany	United Kingdom	Russia/ USSR	France
1870	19.6	6.7	16.8	19.3	19.8	17.8
1880	26.1	5.4	16.3	17.5	19.1	15.6
1890	28.2	5.0	15.7	19.3	17.7	14.1
1900	30.6	5.3	16.4	17.8	17.1	12.8
1913[a]	36.0	5.5	17.0	14.3	16.9	10.3
1925[a]	42.5	8.0	12.2	12.6	15.1	9.6
1938[a]	36.3	9.2	15.0	11.7	20.8	7.0
1950	50.0	5.0	7.1	10.6	20.1	7.2
1960	42.5	7.8	9.2	8.6	24.8	7.1
1970	40.7	11.3	11.6	6.3	21.5	8.6
1980	36.6	16.8	11.2	5.4	21.8	8.2

SOURCE: Data for 1870–1960 are based on various works by Angus Madison. Data for 1970–1980 are from the World Bank *World Tables* and National Foreign Assessment Center, *Handbook of Economic Statistics* (1979). For details on adjustments, see Kugler and Organski (1989).

[a] These odd years are used to avoid, as much as possible, the direct effects of mobilization for World Wars I and II and the unusual global distortion introduced by the Great Depression.

foreign office at the end of the nineteenth century. Likewise, while the basis for the power-overtaking idea (with a good deal of imagination) can be traced to the work of Thucydides (1959), Organski proposed the model in its modern version in the 1950s. Table 7.2, a representation of the productivity of great powers (which is used as a rough surrogate for power) in the previous century, can be used to illustrate the reason for the different perspectives.

At the end of the nineteenth century, when the balance of power began to be invoked, two things were true. Most of the European great powers appeared to be very near to each other in power. Moreover, these countries were growing slowly and the overtaking of one by the other was very slow. In short, if one looked at the structure of power at the end of the nineteenth century, the distribution of power appeared in rough balance and the slope of the trajectories that each country was traveling in its growth appeared almost parallel and flat. On the other hand, France and England were very conscious of being overtaken by German growth because Germany had passed France in the 1870s and England in the 1900s. Hence, it appeared as if the balance of power's prescription—that the stronger power was the aggressor—seemed correct.

On the other hand, when the power transition model was first formulated in the 1950s, the dominance of the United States was clear and

the interval between the USSR, Japan, and all of the other European nations was also very wide. The hierarchical nature of the international order was in plain view. Moreover, the secular decline of England and France had also become plain. Clearly, the emergence of the United States as the dominant power was due to its fast and continued growth for several decades. Likewise, the position of the Soviet Union as the potential challenger in the system was rooted in the decade of the 1930s, during which fast growth followed the collectivization, industrialization, and urbanization of that country. Given these developments, there could be no question in the 1950s that—aside from the Korean War—the international order appeared peaceful, secure, and clearly connected to U.S. dominance.

Thus, one explanation of the different views of the balance-of-power and the power-transition perspectives on the international order was the actual world state the authors observed at the time each theory was promulgated. The empirical record, however, can be used to assess the overall validity and the generality of each proposition. We now turn to some of these findings that allow us to evaluate the growth and assess the impact that the power-transition model has had on other formulations.

EXPLORING IMPLICATIONS OF THE POWER TRANSITION

The Timing of War

Organski (1968) initially argued that war would be waged as the challenger approached power parity with the dominant nation. Tensions between the two major contenders would mount as the dissatisfied challenger, growing faster than the dominant nation, threatened to catch up and overtake the dominant power. As each actor perceived that the power gap between them was disappearing, conflict would be triggered by the challenger who became impatient and mounted its attack before it was as strong as the dominant nation. This evaluation may have been influenced, in part, by the very vivid outcomes of World Wars I and II, which the challenger lost. Such outcomes could be understood if the challenger attacked before it had achieved parity with the dominant nation and was, therefore, doomed to defeat, as Germany learned painfully in World Wars I and II.

Organski and Kugler's (1980) test suggested, however, that on this point the original power-transition model was incorrect. Their study shows that the challenger did not attack *before* but only *after* it had surpassed the

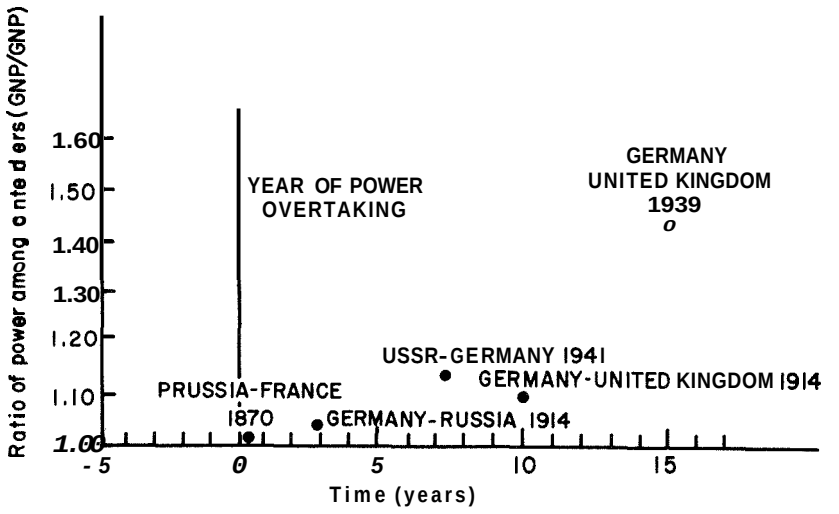

FIGURE 7.2. Ratro of power between the dominant and the challenging nation associated with war initiation. The challengers are listed first, dominant powers last. At a ratio of 1.00, the contenders are equal in power. From Organski and Kugler (1980, 59, Figure 1.2).

power of the dominant country. Their evidence prior to every major war since 1870 can be clearly seen in Figure 7.2.

This finding is of major interest to the transition argument not only because it relates the timing of war initiation to a power overtaking but because it implies a different relationship between satisfaction, power, and conflict than was originally postulated. Note that, contrary to original expectations, in each case the conflict started after and not before the parity point. This unexpected outcome could be accounted for without any respecification of the dynamics within the Power Transition in at least two ways.

First, an explanation fully congruent with the original notion attributes this inconsistency to a failure in the measure of national power. Thompson (1983a) replicated the early results using a now-standard measure of power developed by Singer *et al.* (1972). Thompson's work confirms that parity is associated with war, but indicates that major conflicts started, as Organski originally anticipated, prior to the overtaking. Indeed, Thompson argues that when the power measures are adjusted for the performance of the military and industrial components, the timing of conflict conforms with the expectations advanced in the original theory. Organski and Kugler (1980, chap. 2)—as we show later—used an admittedly simple measure of total output in order to approximate power, which, as their own work later shows, may distort the real relation between the main contenders. Their

research on power measures now shows that incorporating a direct measure of governmental capacity into the power equation permits an accurate accounting of the outcome of major wars (Kugler and Domke 1987). That work, however, fails to confirm Thompson's findings. Rather, the new measures of power suggest even more definitely that the challenger was stronger than the dominant nation prior to the initiation of major conflicts. There is, again, not enough empirical evidence to settle this issue at this point; there is, however, a second explanation consistent with the early formulation of power transition that may explain why the more powerful country lost the war.

Power transition postulated that alliances were relatively stable and that capabilities were known. In the original statement of the model, however, the effects of allies on war outcomes may have been underestimated. Recall that allies satisfied with the working of the international order are expected to support the dominant nation. Organski and Kugler (1980) show that major allies remain true to their alliance in the major wars under scrutiny, and this finding is generalized by extensive evaluations of alliance performance (Bueno de Mesquita 1981; Siverson and King 1980). Allies of the dominant nation include, as we have seen, the great powers in the international order. The weight of their power immediately after an overtaking would be sufficient to overcome the marginal advantage that a challenger held over the now slightly less powerful but still dominant nation. Thus, as Organski and Kugler (1980) suggest, the reason why the dominant nation succeeds more often than not in major conflicts can be traced to the performance of allies. Despite the marginal inferiority of the dominant nation in relation to the challenger immediately after the overtaking, if conflict is initiated the ultimate outcome tilts in the direction of the dominant power because the great powers that are satisfied with the organization of the international order are able to help the dominant power overcome the challenger and its less powerful alliance (Organski and Kugler 1980, 53–61).

The inclusion of alliances allows power transition to account for the outcome of war after the overtaking. It does not, however, explain why the challenger fails to start the conflict prior to the transition point as originally anticipated. The possible contradiction between original expectations and empirical results led one of the authors to investigate the internal consistency of power transition in the context of nuclear deterrence. From this research a third and perhaps more systematic explanation for the timing of conflict has emerged. Because this work extends the original propositions of power transition and links them to nuclear deterrence, let us discuss it in a separate section.

Power Transition and Deterrence

Before we turn to the specific implications for the timing of conflict, it is important to stress that the advent of nuclear weapons has altered the notion of power in the international order. Few would disagree with the original assessment of Bernard Brodie (1946) that nuclear weapons have so increased the costs of conflict that war can no longer be simply thought as the continuation of policy by other means. Brodie (1946, 1959) then argued that these massive costs made war unwinnable and unthinkable; given these new conditions, he proposed the notion that nuclear weapons could be turned into instruments to frighten an aggressor from its course, and the concept of nuclear deterrence was born.

As nuclear arsenals developed and relative parity of nuclear weapons was attained among the main competitors, maximization of power reemerged as a viable assumption and power parity among the major actors was again associated with peace. Like balance of power did previously, deterrence today, as exemplified by the strategy of mutual assured destruction (MAD), proposes that international stability is assured when nuclear contenders are dissuaded from initiating a conflict because the absolute costs of nuclear war are so high that the parties find them "unacceptable" (Jervis 1979; Hardin *et al.* 1985; Intriligator and Brito 1987). Proponents of MAD now argue that nuclear preponderance will lead to war because when one side gains a substantial advantage, it will impose its preferences by threatening an opponent with nuclear devastation. Indeed, and somewhat paradoxically, proponents of MAD now oppose the Strategic Defense Initiative (SDI) because it would reimpose nuclear preponderance, which is precisely the condition that Brodie addressed.

In sharp contrast with classical deterrence, power transition suggests that the calculus of war and peace has not changed with the advent of nuclear weapons. It is taken for granted that the absolute costs of war have obviously multiplied, but the calculations of marginal gains or losses as a challenger overtakes a dominant nation still provide the necessary conditions for the initiation of war. There is no need to adjust assumptions in the nuclear era. A preponderant dominant nation—the United States—would have no incentive to destroy its potential challenger—the Soviet Union—during the period 1945–1960 when the United States held unilateral preponderance of nuclear power because the United States enjoyed all the benefits of the international order. This stability, however, would be altered and would become increasingly tenuous as nuclear parity is approached and an overtaking by the Soviet Union becomes possible. Thus, in this view, a balance of terror is very tenuous and unstable (Organski 1968; Organski and Kugler 1980; Kugler 1984; Kugler and Zagare 1987a,b; Zagare 1987).

TABLE 7.3
Sufficient Conditions for Peace

Alternatives offered to i	Alternatives offered to j: Do not challenge	Alternatives offered to j: Challenge
Do not challenge	Status quo (a_1, b_1)	j wins (a_1, b_2)
Challenge	i wins (a_2, b_1)	War (a_2, b_2)

Formal extensions of the Power Transition were constructed to show the conditions under which nuclear conflict could logically be waged. Recall that satisfaction with the international order reflects the value that each participant attaches to the status quo. The dominant nation is the main architect of the international order and is assumed to be satisfied, while the challenger must be dissatisfied. Before we evaluate the power interaction in a competitive setting, we should underline the importance of the assumption regarding the status quo. Zagare (1987, **151)** shows that, regardless of their power relationship, two nations satisfied with the status quo in the international order have no incentive to challenge each other and, hence, no need to deter each other. This is simply demonstrated by the generalized representation shown in Table 7.3 of a competitive game used frequently to represent deterrence where the two players, i and j, can either support (a_1 or b_1) or challenge (a_2 or b_2) the existing status quo.

Note that no matter what values are attached to all of the other alternatives, when the status quo is preferred by both actors to the outcome that could be secured by challenging it, the status quo is never challenged. Simply stated, when i and j are satisfied and marginally prefer the status quo to a challenge, war is not possible. Consequently, such an outcome pair does not need deterrence to insure cooperation (Zagare 1987; Keohane 1984). Deterrence is required, however, if at least one party prefers the option of challenging the status quo, and the investigation of different combinations of such values produces a number of complex and interesting deterrence alternatives (Kugler and Zagare 1987b; Zagare 1987). Thus, consistent with the fundamental assumption of power transition, it has now been shown by others that ***dissatisfaction*** with the status quo is an essential precondition for conflict.

Given the dissatisfaction of at least one party with the international order, let us now explore what power distributions can lead to conflict. Kugler and Zagare (1987b) propose the power-overtaking structure in Figure 7.3 to ,account for stable deterrence: Under conditions of power

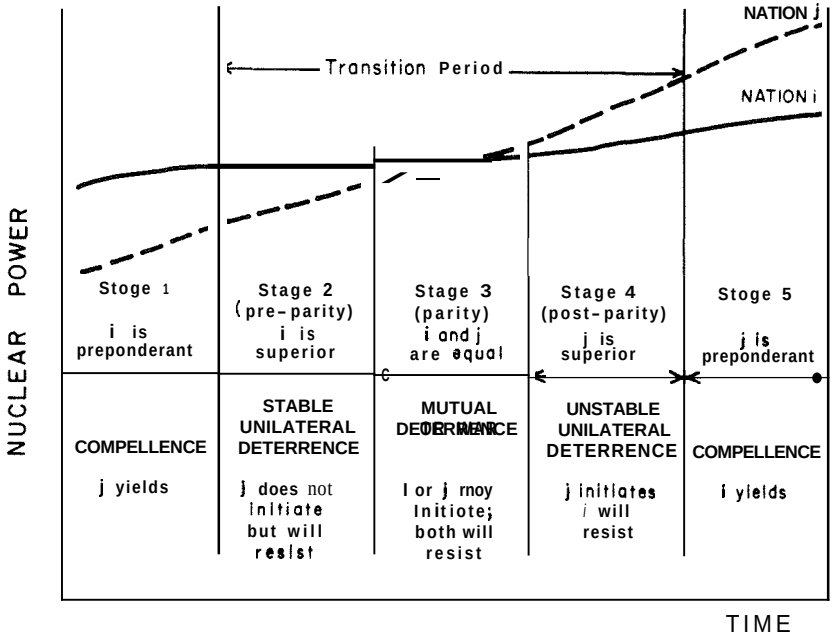

FIGURE *7.3. Power transition and the dynamics of deterrence.*

preponderance (stages 1 and ***5),*** the power-transition and deterrence theories—unlike the balance-of-power model—suggest that war is unlikely. The weaker power cannot obtain concessions without significant costs, and the stronger party has little incentive to alter the status quo. Power transition adds an additional refinement. When the dominant power is satisfied and preponderant (stage 1), war is unlikely because i has no incentive to extract added concessions from potential challengers. When the challenger becomes preponderant (stage 5), however, it will extract concessions that can no longer be resisted by the previously dominant nation.

Power transition differs fundamentally from both balance of power and deterrence in stages 2, 3, and 4. Power transition indicates that the conditions for conflict are present during most of the transition period and are heightened by the growth of the challenger. Contrary to Organski's (1958) original expectations, we find the conditions for stable unilateral deterrence during the immediate preparity period (Stage 1).The challenger, j, is able to resist the demands of the dominant nation, i, thereby signaling that, at that power level, the sufficient conditions for conflict are met. Because the dominant nation, i, is committed to the status quo, however, i

has little incentive to challenge *j*. After all, the prevailing international order is controlled by and designed for the benefit of the dominant power. Concurrently, *j*'s own incentive to challenge is minimal because *j* is still marginally inferior to *i* and expects to gain no concessions should a confrontation arise. This deduction is consistent with the empirical report that challengers did not initiate major war prior to the overtaking, but instead waited until they were stronger than the dominant nation to make a move (Organski and Kugler 1980). Moreover, this logic provides a clear explanation for the absence of nuclear war since Hiroshima and Nagasaki were devastated.

The Power-transition model indicates that the stability of nuclear threats erodes in the next two stages (Figure 7.4, stages *3* and 4) where this model anticipates simultaneously the conditions for war and peace. Unlike classical deterrence and the balance-of-power models, which argue that parity of power insures peace when the costs of war are very high, power-transition theory proposes that these are the very conditions where deterrence is most uncertain. When power equality is achieved (stage *3*), *j* is sufficiently strong to make credible threats and to fight if spurned. Thus, war may be waged precisely because each side has an equal opportunity to achieve net gains with a victory and the dissatisfied party anticipates net losses from continuous compromise. There is also a reverse side to this argument. Parity also suggests the conditions for stability. Congruent with the expectations of the balance-of-power model, power equality is associated with peace when the potential challenger, *j*, is unwilling to take risks and anticipates no gains from a conflict involving nuclear weapons (Kugler and Zagare 1987a,b).

Finally, and germane to this argument, after the challenger, *j*, has surpassed the previously dominant power, *i* (stage 4), the conditions for a major war are present. Unlike the preparity period (stage 2), which is stable because the dominant power is satisfied with the prevailing order, the postparity period is potentially unstable because *j*, now slightly stronger, is still dissatisfied with the status quo but can now anticipate the possibility of marginal gains through conflict. Under such conditions, sooner or later *j*'s frustration will manifest itself in a challenge. When it does, the declining but still dominant nation, *i*, is expected to resist. War can ensue.

What, then, are the implications of the power-transition model for stability in the nuclear age? This exploration shows that the power-transition model extends easily to encompass deterrence without altering the basic assumptions or reformulating the theory as nuclear weapons proliferate. Given Lakatos' concept of generality, power transition's concept of international politics seems to have a definite edge.

The practical implications of this model are, however, sobering. The

power-transition perspective suggests that when nuclear parity is reached and a challenger threatens to overtake the dominant nation, perceptions of a "missile gap" or a future "window of vulnerability" can destabilize deterrence. As power transition suggests, this is true only if elites of competing nuclear powers concentrate on the net gains and losses each may achieve from a challenge and are not stopped from action, as Brodie suggested, because of their concern with the absolute costs of a nuclear war. With the perspective of power transition, for example, one can see why Kennedy thought that the deployment of nuclear weapons in Cuba was a radical step that could not be accepted and, to prevent this marginal change, accepted a high risk of a massive nuclear war. It should be noted that much of the new strategic literature now suggests the possibility that parity does not, after all, insure stability. For example, Huntington, whose work was instrumental in the development of classical deterrence, now argues that it is unwise to rely on nuclear equality alone when facing an opponent who is willing to risk more to attain its own ends (Huntington 1982). Indeed, with the deployment of tactical nuclear weapons the possibility of waging and "winning" a nuclear war has reemerged (Gray 1979). Indeed, despite pleas by proponents of continued balance under the mutual assured destruction policy (Jervis 1979; McNamara 1984), it is no longer universally accepted that, with parity, nuclear war is so "unthinkable" that it could not be used to advance policy goals. Note that this is precisely what power transition suggested would happen when parity was reached.

Quite understandably, these two perspectives of international politics produce very different policy propositions in the nuclear field. The most obvious divergence is in the impact of nuclear proliferation. Both deterrence and balance of power permit the inference that the proliferation of nuclear weapons will enhance the stability of the international order. Indeed, Waltz (1981), Intriligator and Brito (1981), Bueno de Mesquita and Riker (1982), and, much earlier, Kaplan (1958) independently developed, from the balance-of-power structure, the idea that nuclear proliferation can increase international stability even in volatile disputes. Each analyst proposes slightly different schemes for the dispersement of nuclear weapons, but, from the simple premise that increasing the absolute cost of war will reduce its likelihood under balanced conditions, all deduce that the proliferation of nuclear weapons should enhance stability and secure peace.

The power-transition framework produces a diametrically opposite conclusion. The high costs attached to nuclear conflicts do not reduce the danger because it is the marginal calculations of gains and losses that lead to challenges. Nuclear parity does not produce assured stability. Rather, the nuclear parity created by proliferation enhances the potential for instability. Indeed, proliferation augments the number of nations that can achieve

regional or world nuclear parity and, because of this, expands the number of actors that have the opportunity to consider the risk of nuclear war, increases the chances for an overtaking among competitors that may be willing to take the risk of war, and, therefore, undermines world and regional stability. Note that most balance-of-terror advocates are inconsistent on this point because they concurrently advocate stable nuclear deterrence under equality and vehemently oppose nuclear proliferation (Jervis 1979; Hardin *et al.* 1985).

The development and reformation of power transition show how the theory has produced important extensions in the nuclear age that are empirically and formally consistent with the record of international stability while remaining consistent with the original proposition. Related extensions in the field of comparative politics also support the vitality of this perspective.

Power and Political Capacity

The concern of power transition with national development led to a concept of national power that was radically different from the prevailing view. National power was only partially captured in military strength (Claude 1962), in the mobilization of untapped resources for war purposes (Knorr 1956), or in the many-faceted notion of the will to fight (Aron 1967). The power-transition model suggested that national power was rooted in the development of socioeconomic and political resources. At the core of the developmental process are three interconnected sets of changes: the increase of economic productivity resulting from industrialization, the increase in the demographic pool in the economically active ages due to the demographic transition, and the increase of the capacity of elites to mobilize resources produced by the population. For students of international politics, this specification of the connection between development and power made relevant the data and methodologies of many disciplines.

Initially, power transition suggested a very simple indicator by which national power could be measured and specified an interactive model to do so (Organski 1958). Measures of political capacity were not available, and, while Organski noted this deficiency, he suggested that changes in the economic and demographic structures were sufficient to measure, at least very roughly, the concept of national power. Thus, power was simply

$$\text{Power} = \text{Economic Productivity per Capita} \times \text{Population}$$

The gross national product (GNP) was the measure chosen because it combined the demographic and economic aspects of a nation's productivity.

In empirical tests this parsimonious and robust measure performed as well as the more complex index of power developed by Singer *et al.* (1972), which included demographic, industrial, and military components. Indeed, the same periods of transitions among developed nations were identified with both approaches (Thompson 1983a; Organski and Kugler 1980). Here, the power-transition concept led to a second major innovation. If power was the result of the levels of development in the demographic, economic, and political spheres, it was critical to specify a model of such a relation and measure the capacity of political systems. A concept and a measure of political capacity, however, were not easy to come by. For the purpose of international politics, the fundamental political question can be phrased as follows: Is the political system more productive, more effective, and more efficient than another in its ability to extract resources for its own ends? The problem, then, is how to measure the capacity of elites to mobilize the human and material resources under their jurisdiction.

Relative political capacity (RPC) is a first attempt to approximate the level of political performance through the use of revenue data. As Ardant stated, "The fiscal system is the 'Transformer' of the economic infrastructure to the political structure" (Organski and Kugler 1980, 74). To approach political capacity, then, one must estimate the ability of a political system to mobilize the resources within the polity. The procedure used for such an estimation has been fully described elsewhere, and numerous analysts have added specificity to this general concept allowing RPC to deal with world, regional, and even domestic political capacity (Organski and Kugler 1980; Kugler and Domke 1987; Kugler 1987; Snider 1988; Rouyer 1987). Simply stated, RPC is a ratio that measures the difference between the revenues a government is expected to extract (given its economic performance and resource endowment) and the revenues a government is capable of extracting to pursue its own ends. Power could now be reformulated as

$$\text{Power} = (\text{Economic Production per Capita} \times \text{Population}) \times \text{Relative Political Capacity}$$

Political capacity is used to shrink or expand the original base of power. The validity of this new measure of national power would, of course, be tested. Tests were set to determine if one could "postdict" the outcome of wars among developed and developing nations—including Korea, Vietnam, and the Middle East wars—and if one could concurrently improve on the account of the outcomes of wars among developed nations in conflicts such as World Wars I and II. The new measure proved successful in both environments (Organski and Kugler 1980; Kugler and Domke 1987). The importance of such tests is that, at long last, a parsimonious measure of

power that accounts for the outcome of wars with a high degree of accuracy has been developed and validated.

Political Capacity: A Demographic Test

The search for a measure of political capacity had direct payoffs in political demography. The use of demographic variables to explore changes in political behavior has long been a staple of political analysis, but the measurement of the effects going the other way had proven elusive. One could not tell, for instance, what effects the growth of the political system had on the fertility and mortality of populations. Many analysts, of course, suspected that as the capacity of a government grew and state authority was strengthened, internal conflict, which decimated the population, devastated the economy, and caused further death through lack of health care and disease, decreased causing a drop in mortality. And again, with state growth and with governmental rules on marriage, education of women, divorce, ownership of property, education, employment, and access of contraception or abortion, infertility also declined.

To test the effects of state growth on fertility and morality, the measure of political capacity was transformed into a measure of political costs. The theory connecting the measure of political costs and the process of growth of the political system has been outlined elsewhere (Organski *et al.* 1984), and brief synopsis must suffice. The growth of a government's ability to extract political resources is the result of the elites' attempt to gain as much of the resources as they can from their society. The major reason more resources are not extracted from the population is that the ruling elite cannot pay the political costs that the extraction of additional resources would require.

The results of analyzing the effects of political capacity on fertility and mortality had vast implications for our understanding of the process of national development. It has been suspected for some time that the growth of nations was the result of changes in the social, political, economic, demographic, and belief structures making up a national society. A key to this pattern of growth is to be found in the fact that fundamental changes in behavior in one sector brought about changes in other sectors. In the demographic sphere, for example, Thompson (1929) and Notestein (1945) proposed that fundamental changes in economic development caused changes in fertility and mortality. In the absence of economic development, it was not thought possible that fertility could be brought down sufficiently to permit the savings that developing countries required in order to develop. Analyses using political capacity suggest that this view was fundamentally

in error. Politically capable countries reduced both fertility and mortality (Organski *et al.* 1984). As the case of China vividly demonstrated, an economically underdeveloped country (with, however, a highly effective political system) could lower the fertility of its population to levels of countries in Europe like Spain. This lowered fertility was part of the unintended consequences of that nation's political growth and started well before any population control programs were instituted (Organski *et al.* 1984). More recent research shows that political capacity indicates when a government-instituted program of birth control will have far reaching effects. The major birth control attempt by Indira Gandhi fizzled out in India, but Rouyer (1987) shows that relative success was directly related to the level of political capacity achieved by the local governments in each of the Indian states that attempted such programs.

The realization that political change by itself could bring down fertility, which permits the necessary savings for economic development (although, of course, such savings need necessarily be channeled into productive investment), suggests a very different prognosis for the economic development of the many remaining underdeveloped countries. If such countries can develop their political capacity, as China or Vietnam have, they can enhance economic growth. Hence, the distribution of power driven by such political changes in domestic structures is very likely to change the world of tomorrow in massive ways.

The introduction of political capacity may also affect comparative politics in areas that had received a good deal of attention in the 1960s and 1970s under the rubric of political development. That effort produced some memorable work but has since died out. We suggest that one of the reasons for this failure is the inability to estimate the capability and productivity of the political system. The measure of capacity is a tool that allows direct cross-national comparisons and suggests that the field of political development should again be at the center of political research.

CONCLUSIONS

We return to Lakatos' criteria to assess the value of power transition. As expected from any novel idea, power transition suggests a number of new assumptions and derives nonstandard hypotheses about the reasons for peace and conflict in the international order. Power transition asserted that an equal distribution of power among key contenders is the necessary condition that bring about major international conflict and that when power is asymmetrically distributed, peace is assured. This proposition was

radically different from prior expectations of the realist tradition and has, thus far, been supported by the existing evidence.

Turning then to Lakatos' criteria of generality, the extensions of power transition provide a description of the nuclear world that is consistent with the empirical record and do not require additional assumptions or revisions to develop the general argument of deterrence. Balance of power and its various extensions into deterrence accomplish such ends only by altering assumptions to correspond with changes in the distribution of nuclear resources. Moreover, the debate regarding the stability of deterrence, the value of nuclear proliferation, and the usefulness of defensive systems, which now divide many analysts in the realist tradition of equilibrium, can be understood and directly related to the behavior of practitioners using the perspective of power transition.

Power transition has also influenced the study of world politics by directing attention to domestic developmental processes rather than to international interactions to understand peace and war. The new perspective has clearly influenced writers in the hegemonic tradition who also place development at center stage. Moreover, by refocusing the concept of power away from military force, power transition had a lasting impact on the way power is now measured. Perhaps the greatest cross-disciplinary impact of power transition can be traced to the development of measures of political capacity. Such measures, designed originally to approximate power more effectively, have now acquired a life of their own in the systematic analysis of national behavior. Their promise is that we will understand more fully the process of national development and—for the first time—will be able to compare directly the political capacity of governments regardless of governmental forms.

The survival of power transition as a major idea in the field should be secured by such a record. Reformulations of key concepts under new names and the inclusion of key aspects of the theory under different rubrics may well result in the absorpti'on of this central idea into other constructs. This, of course, is also a measure of success. Regardless of labels that may eventually be used, however, upon completing this evaluation it seems to us that, on the key aspects of Lakatos' criteria (novelty, generality, and empirical support), power transition fares very well because it has focused and added to our knowledge. Perhaps no higher reward can be asked from any idea.

CHAPTER 8

Arms Races, the Conflict Spiral, and the Onset of War

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INTRODUCTION

> While the [arms race] models are more formal now than in the pre-Richardson days, they all seem to be variants of his basic approach. . . , even. . . more recent efforts, while clearly informed by the scientific outlook, leave us very far from the sort of knowledge we seek. [Singer 1970, 137]

Although these words were written over 15 years ago, they still have a ring of truth today. Scholars continue to devote most of their attention to modeling arms races, with special emphasis on the effects of factors such as reactivity and technology. One need only look at the recent reviews of arms race models (Moll and Luebbert 1980; Isard and Anderton 1985; Anderton 1985) to appreciate both the volume and sophistication of this work. Yet even though many of these models enlighten us on the dynamics of arms races, they tell us little or nothing about their relationship to and effect upon the broader political context in which these competitions take place. When will arms races lead to militarized confrontations? When will they lead to war? Under what conditions can they be terminated in a peaceful manner? Can arms races actually reduce the chances of war? These are only a few of the questions to which Singer alluded.

Most of these questions are relatively unexplored, but in recent years there has been greater attention devoted to studies of the outcomes of arms races. To a considerable extent, these studies are based upon a desire to assess the relative accuracy of two significant, diverging points of view on