
INTRODUCTION: NEW PERSPECTIVES ON THE CAUSES AND MANAGEMENT OF SYSTEMS CRISIS

A fundamental concern of international relations is maintenance of world order while providing security for the nation-state. Instability has many causes, and the massive wars accompanying systems transformation are not simply explained. Structural explanations establish a broad historical framework around which other sources of explanation may be integrated.

SYSTEMS STRUCTURE AS KEY TO AN INTERNATIONAL POLITICAL VIEW OF FOREIGN POLICY

By systemic stability and instability we mean how much peace versus massive conflict characterizes the system at a particular time. System stability does not refer to the degree to which the internal components of the system (its structure) are stable in the sense of unchanging. The system is constantly changing, and transformation occurs not as a discontinuity but as an "evolutionary novelty" emerging from the continuum of long-term changes in systemic structure, systemic changes which reflect the dynamics of the various state power cycles within that system (Doran 1971, pp. 1-11, 46-58). Systemic stability is equivalent to the absence of major war, to territorial security combined with peace, or peace based upon the acceptance of a legitimate international political order.

In the late nineteenth century, analysts spoke of the problem of peaceful change to connote the perils of nationalism and imperialism, and challenges to the status quo created by newly rising states. With the obvious failure of the balance of power prior to the First World War, and the struggle to overcome that failure at Versailles, this problem acquired a meaning that was highly structural in concept and useage. A wrong solution to the problem in appeasing Hitler shifted the focus of analysis after 1945 to the reasons why it failed, to the reasons why changes in the structure of the system have repeatedly ended in world war.

INTRODUCTION

But if structure is what gives each international system its special character and substance, what are the essential components of structure? At a minimum, structure involves the number of actors within the central or great power system, their relative power, their systemic roles, the extent of polarization (ideological as well as structural), the nature and extent of alliance association, and the nature of the norms and codes of governing behavior constituting the prevailing international regime. These considerations form the basis of judgment whether a particular type of system is likely to be more or less conducive to stability, or whether the origins of political stability lie with the nature of the change in systemic structure.

Contributions to this systemic structural perspective have come from many directions and contrasting approaches to analysis, but something like consensus now exists regarding the principal concepts of system, structure, and distribution of power. As Morton Kaplan (1961) warned, any attempt to describe the differences between types of theoretical international systems in terms other than structure "would founder under the weight of the parameters which individualize these systems" (pp. 8–9). Richard Rosecrance (1963) showed that systems are stable at maturity and that the problem is getting from one stable system to another. "System structure" was defined as "the distribution and hierarchy of power" by Stanley Hoffmann (1968a, p. 17), or equivalently as "the distribution of capabilities across the units" by Kenneth Waltz (1979, p. 69), who emphasized that "to be politically pertinent, power has to be defined in terms of the distribution of capabilities" (p. 192). The notion of system structure is tied to that of power, and power (in whatever issue area) involves a relative relationship. The distribution and hierarchy of capability reflect the relative power of each member of the system, operationalized as "percentage share of systemic power" by J. David Singer and his associates (1972). Hence, the distribution of capability, systemic shares, and relative power are used interchangeably to express what is meant by systems structure.

Waltz recognized that the definition of systems structure as distribution of capabilities is necessary "to bring off the Copernican revolution" of systems level understanding (p. 69). "The structure of a system changes with changes in the distribution of capabilities across the system's units. And changes in structure change expectations about how the units of the system will behave and about the outcomes their interactions will produce" (p. 97). After extensive debate centered on this "structural realist" view, Robert Keohane (1989) concluded: "systemic theory is important because we must understand the context of action before we can understand the action itself

INTRODUCTION

... structural theory [relative power, or the concept of systemic shares] is important because it provides an irreplaceable *component* for a thorough analysis of action, by states or non-state actors, in world politics" (p. 61). Note for example Stephen Krasner's (1985) contrast between a structural interpretation of North-South relations and the economic focus on the behavior of utility-maximizing individuals (p. 306). The concepts of system and structure capture much that is important in the behavior of states and accordingly form the basis for the emergent paradigm shift even if a theory of international relations must go beyond structural realism.

Why must theory go beyond realism, classical and structural? While a number of reasons could be adduced, we here focus on the reason identified by Keohane: existing theories of international relations "do not offer a theory of peaceful change" (p. 65). Keohane was responding at once to the crucial insight into international relations, and the fundamental limitations of the hegemonic stability paradigm, which appeared in Robert Gilpin's (1981) study of "war and change in world politics." Asserting that "the fundamental problem of international relations in the contemporary world is the problem of peaceful adjustment to the consequences of the uneven growth of power among states, just as it was in the past" (p. 230), Gilpin examined the unsuccessful efforts of analysts to overcome this dilemma of peaceful change before and after the Second World War. Keohane concluded that the resolution to the dilemma lies in regimes and international institutions, and thus that system and structure are involved in the problem but not in its solution.

But, according to power cycle analysis, system and structure are indeed involved in the solution to peaceful change. Without a foundation in terms of state power and foreign policy role, other perhaps more elaborate solutions are likely to collapse because they will have been eroded from beneath by the absence of an adequate structural base.

While part of a wider tradition of systemic and structural theories, the power cycle perspective may however be obscured by certain assumptions that do not apply to it. Its conception of the system is totally dynamic and stresses the nonlinearities of state power change that suddenly alter the view of the future. And while its focus on vertical change also emerged within the power transition and hegemonic stability research traditions, this common perspective has masked the true commonalities and divergences between these three distinct theories, leading to confusions about both the causes of war and the path to world order.

INTRODUCTION

THE THEORY AS INITIALLY FORMULATED

Power cycle theory saw its first articulation in *The Politics of Assimilation: Hegemony and Its Aftermath* (1971). Why had the balance of power repeatedly failed to preserve order? Why were certain times in history so traumatic for states individually and collectively? Those questions guided examination of the first three world wars of the modern state system, and the postwar efforts to establish a new world order at the Peace of Westphalia (1648), the Treaty of Utrecht (1713), and the Congress of Vienna (1815). This summary relates only the theoretical aspects of that study.

The book argued that such structural crisis can be understood only by examining how a state becomes a hegemonic threat. What factors or conditions enable a state to rise above others in the system and aspire to hegemony? Efforts to understand the dynamic of French capability over three centuries (seventeenth through nineteenth), reinforced by "thought experiments," yielded an answer that was elegant in its simplicity: *A state's relative capability in a system will increase when its rate of absolute growth is greater than the absolute growth rate for that system as a whole (the systemic norm)*. A table (p. 47) summarized the steps needed to determine whether a state was converging or diverging from the systemic norm, and hence the direction of its relative power trajectory.

What then enables a state to grow faster than the systemic norm? If a state does begin to diverge from the systemic norm, what is the nature of its growth or decline in relative power, and how does that dynamic influence the behaviors of states throughout the system? Further "thought experiments" yielded a second principle of relative power change: *a state's relative capability growth will accelerate for a time and then (at a point of inflection) begin a process of deceleration*. As the state rises in level of relative capability (due to its greater absolute growth rate), it acquires progressively larger systemic shares *until* it reaches a level at which its absolute growth rate increasingly dominates the systemic norm and hence becomes increasingly "less greater" than that norm. Subsequent to that level, the state acquires ever smaller systemic shares although absolute growth rates have not changed throughout the system. Viewed alternatively, the finiteness of systemic shares means that a rising state eventually will have increasing difficulty in acquiring additional shares.

The analysis demonstrated that long-term changes in relative power for each state in the system and changing systemic structure are two aspects of a single dynamic. Moreover, these changes in a state's

INTRODUCTION

relative power over time reflect its rise and decline as a major power within the system, its cycle of power and role capability. Once the process of state rise and decline is recognized as a process amenable to systematic analysis, the dynamic can be fully explicated and the impact of changing systems structure on the behaviors of statesmen directly assessed. The occurrence of *critical times in the state's international political development*, times when it abruptly experiences a new perception of future security and foreign policy role, then seems as naturally and firmly deductive as it was inductively derived from the study of history.

The power cycle was seen as an evolution of what Klaus Knorr (1956) called war potential. Relative war potential, or relative national capability, was shown to index the "curve" of the power cycle, as developed conceptually in chapter 4, historically for the three hegemonies in chapters 9, 12, and 19, and graphically as a generalized power cycle in chapter 21. Chapter 5 emphasized the thesis that "intra-actor organic [relative capability] changes are vital to the potential rise of hegemonies, to their eventual emergence as a major systemic threat, and to the success or failure of their reintegration into the system" (p. 60). The last chapter summarized the thesis in a series of generalizations about the state cycle of political development, its implications for hegemony and major war, and the associated implications for order maintenance.

First, it presented the *theory of the state power cycle*, namely, the generalized dynamic of relative power. Curves of the absolute growth rate for the hegemon and for the system were drawn together with a curve which "roughly depicts the war potential of a hegemon relative to the average war-potential change of the major powers in the system" (p. 194), the state power cycle: "The war potential of a state *relative* to that of other major individual states or to the average war-potential variation of all major states appears to follow largely a cyclical development" (p. 192). Chapter 3 reproduces that figure, disaggregating the absolute and relative dynamics to enhance explanation (Figure 3.1).

Remember that Figure 3.1 depicts the *rates of growth* in absolute capability. As explained above, the absolute growth rates for the state and for the system will determine whether the state's relative power trajectory is rising or declining. The particular rates of growth depicted were chosen to emphasize the very important fact that even when each state in the system is undergoing increasing rates of absolute growth, a state can rise, peak, and then enter decline in relative power. Although the power cycle appears simple, even intuitive, its

 INTRODUCTION

dynamics are actually quite complex and sometimes are counterintuitive.

Second, the three historical cases suggested a relation between *specific points* on the power cycle and the *likelihood for hegemony*, “although the respective curves have never been drawn. Such analyses deny that the relationship is the simple one normally asserted by the balance-of-power theorists who automatically equate hegemonic activity with excessive maximized power” (p. 192). Louis XIV’s paramountcy seemed to have occurred “perhaps considerably in advance of France’s peak potential” where the state “is stimulated to grasp quickly the supremacy it has so long anticipated and been denied.” Napoleon’s “drive for supremacy must have occurred early on the downward slope of France’s relative latent war-potential curve” where the government tries “to achieve a role which the state assuredly will not again be in a position to contemplate seriously.” In each case, the state feels frustrated about its systemic role, and “the dynamics of war-potential change may aggravate the psychology (‘irrational’ as this may be from the analyst’s perspective) of the errant actor” at two particular points (p. 193). Labeled on the figure, these two points – the first inflection point (F) and the zenith (Z) – were identified as the points of highest expansionist motivation for a potential hegemon because, at those points, the state suddenly must confront a switch from ever increasing to ever declining rate (F) or level (Z) of relative power.

The two points of highest expansionist motivation may be singularly frustrating for the state, for, while its latent war potential may be increasing at very high absolute rates, the *acceleration of its relative war potential* will be falling off and may continue to fall off at ever-increasing rates . . . Given a sufficient time lag for the realization to strike policy makers, the first expansionist outburst probably occurs after the state perceives a shift from *acceleration to deceleration* in its relative war potential. Both of these types of change ought to hold immense shock value for a government highly intent upon a major world, or systemic, role. (p. 193).

Third, a very surprising fact was added in a footnote (p. 192, n. 3): on key economic indicators, Germany’s relative power appeared to peak early in the century. This empirical observation was especially striking because Germany’s absolute gains were ever increasing on those indicators, and because its continued rising trajectory in relative as well as absolute terms was the prevalent historical interpretation. Germany’s second expansionist attempt appeared to fall after the second inflection point (L) of sudden *improved* rate of relative power

INTRODUCTION

change. This fact was discussed as further evidence for *instability at that critical point as well*. And it was proposed that the Franco-Prussian War and Bismarck's wars of unification may have been a response to Germany's first inflection point. Thus, although the purpose of the book was to examine the conditions underlying massive systemic wars, the trauma of critical change in future power and role projection was proposed as *a potential cause of other major wars* as well. Suggestions for how to operationalize the theory were made at various points (pp. 47–51, 59–61, 192, 210), but that was a task for the future.

The purpose there was rather to emphasize the implications of the study for how to reintegrate the defeated hegemon harmoniously into the system in a way which would *prevent further hegemonic attempts* by that or other states:

In the absolute theoretical sense, assimilation [order-maintenance, its third phase] is never complete, for in this sense it cannot stop in less than a motionless system in which interests and power have been equilibrated among all the major states in an unchanging international political universe. The universe of international political discourse is dynamic, however, and assimilation is a historical process, not an absolute one. In this sense assimilation ends when an entirely new systemic context supersedes the former context. (p. 194)

This fourth generalization was emphasized throughout: order-maintenance is an on-going process which must be "based on observations of long-term changes in relative [capability]" (p. 1). Therein lie the *clues to peaceful change*.

The long-term changes which the designers of the peace treaties must "deal with" in order to preserve the peace must not be limited to "the long-range factors . . . as they present themselves for extrapolation at the time of the peace negotiations." The designers of assimilation "must ever consider the possibility that *new forces* [new states, and/or an inversion of the prior extrapolation which abruptly occurs at a critical point on the relative power curve] may emerge in the future to *transform systemic conditions*. With respect to the latter responsibility, [they] must take care not to create an *artificial inequality of systemic roles* which could encourage unstable developments" (p. 31, emphasis added). The key to successful peaceful change requires awareness that future change in the system will involve new conditions that *could not be predicted at the time of the peace treaties by linear projections*, and that those new conditions will create uncertainties and anxieties when they do suddenly occur. Peaceful change also requires that *a sense of justice be consciously applied*: to sustain the territorial integrity of states and to

INTRODUCTION

assure that a disequilibrium between power and systemic roles is not allowed to disrupt the peace during those critical intervals.

Finally, peaceful change requires recognition that the “dynamics of international politics” is not restricted to either cyclical conceptions of history or the Marxian negation of opposites, each of which supports the notion that peaceful change is not possible. The book postulated general “mechanisms of change in the international system” that could “effect evolutionary developments” and others that could “lead to cyclical repetition.” Principles of complementarity (productive reinforcement by supplying a lack, exploiting reciprocal strengths, minimizing corresponding weaknesses, or specialization) and of competitiveness (elimination of contradictions, inefficiencies, and superfluities) explain the emergent cycles of relative power and facilitate the evolution of a world order that is both secure and more just (pp. 2–11).

The present book takes up where the earlier book left off. It has the same purpose, to argue a more viable basis for systemic equilibrium and order maintenance than the balance of power. But it has been enriched by the work of many scholars in the intervening two decades of theoretical and empirical analysis devoted to a host of related questions.

EXTENSIONS AND OPERATIONALIZATION

Many theoretical and empirical questions had to be answered before the generalized power cycle and its implications for systemic stability could be tested. Can power be effectively indexed, and can the notion of power be interpreted consistently by respondents? Background questions had to be resolved regarding causation, indexation, the dynamic interaction between interests and power, and modeling of a nonlinear dynamical process. J. David Singer's path-breaking Correlates of War Project guided development of our “yardstick” for a state's political evolution as a major power.

The rank disequilibrium literature influenced how the notion of general equilibrium has been schematically represented and further articulated. The mechanics of disequilibrium (how the *causes* of war yield the *decision* for war) required study of decision making in normal circumstances versus critical periods of abrupt massive structural uncertainty and perceived threat, a question explored in a widely diverse literature encompassing economic forecasting, arms race modeling, and social psychology as well.

Long before the index was conceptualized, attempts were made to

INTRODUCTION

find an efficient way to determine the times of critical change, when the trend of relative power undergoes inversion. The approach suggested in Doran (1971) was used: analyzing *rates of growth* in absolute capability for a state versus the system readily identifies its period of rise, peak, and decline relative to that system. Accordingly, graphs of relative scores depict that pattern, including the occurrence of inflection points. Analysis of the *rates of change* of the relative power data easily identifies the times of inflection.

This exercise, applied to a number of indicators and test systems, demonstrated that the underlying factors of growth are broad-based and strongly reinforce the trend of the power cycle. It also verified that the nonlinear dynamic of the power cycle, its inflection and turning points, is inherent in relative change in a limited system, that the concepts "relative," "system," and the "cycle of relative power" are inextricably united. Search of the literature on nonlinear dynamics indicated that understanding of such processes was still quite nascent. Meanwhile, the system dynamics modeling approach of Jay Forrester (1968, 1971) despite its shortcomings *vis-à-vis* global equilibrium, was used successfully to model the dynamics of Germany's rise and decline and its associated instability (Doran 1974b). But it was not a general test.

This modeling exercise led to the literature on predator-prey models in ecology, and to analyses of growth processes of animal and human populations. The belief that the correct mathematical model for the dynamic of the power cycle was logistic growth emerged from that study. Logistic growth involves nonlinear growth in the context of limited resources, and relative power involves the distribution of the 100 percentage shares of systemic power among the states in the major power subsystem. The critical points in the relative power dynamic can also be calculated by means of the logistic, substantiating those identified via analysis of successive rates of growth in absolute power and rates of change in relative power. Further search led to the so-called Verhulst or Pearl curve for modeling asymmetric logistic growth (Pearl 1925). Hence, it was not until 1978 that research had been completed on the nature of the yardstick, the required data collected, the mathematical model operationalized, and the test of power cycle theory finally undertaken.

Carried out with the important assistance of a student, the empirical test (Doran and Parsons 1980) established the reality of the power cycle for nine major states in the system. It also confirmed a causal relation between abrupt nonlinear change in power and role projection at critical points on the cycle, and the initiation of major war (not just the weaker claims of incidence and association).

INTRODUCTION

Concerns raised about the statistical procedure for calculating critical points via the generalized asymmetric logistic prompted reliability tests of the critical points via a variety of approaches. This exercise demonstrated once again that the critical points are present in the data and are not an artifact of the analytic imagination or method. While undertaking this effort, a mathematician examined that broader statistical issue, involving estimation of the asymptotes, in the context of dynamical systems analysis. The very uniqueness of the inflection point of logistic growth suggested an efficient algorithm to resolve that problem. In addition, this technique enabled us to verify a number of assumptions of the theory regarding the “abruptness” of change at a critical point, and regarding perception and direction of causation (chapter 4).

The question regarding the mechanics of disequilibrium during critical intervals received new understanding from an unexpected source, the nation–state response during the two “oil crises” of the 1970s. Normal market behavior was inverted, and prices escalated. The phenomenon of inverted expectations and its effect on price, likewise witnessed during crises such as a depression, provided a clear analogy to the nation-state response to threatened future power and role during critical periods of the power cycle, already conceptualized via the supply/demand paradigm (see chapters 1 and 7). This explanation for why and how the decision for war is likely to occur in critical intervals was first presented in the context of the transformation of systems (Doran 1980a)

CONCEPTUAL CONFUSIONS SURROUNDING ALTERNATIVE EXPLANATORY MODELS

Some confusions arise because of the label “power cycle theory.” The label refers to the *two-part* theory regarding (1) the dynamic of state rise and decline itself (the power cycle), and (2) the implications of that dynamic for major war. I had not given a name to this theory, referring variously (depending upon the aspect of the cycle being emphasized) to the “*generalized* cycle of relative power” or the “cycle of relative power *and* role” or the “cycle of *political development of the state*” and, as a separate issue, to the implications of that cycle for major war. At a conference shortly after the empirical demonstration of the generalized cycle, the term “power cycle theory” was coined by colleagues comparing this concept of the state relative power dynamic with the “power transition” and “long cycle” notions. When I adopted this usage, I always emphasized that power cycle