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ISSUE-SPECIFIC OR ACTOR-SPECIFIC?
THE AMERICAN CASE, 1978-1994

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Chin-Lung Chang

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SELECTION OF STATECRAFT: ISSUE-SPECIFIC OR ACTOR-SPECIFIC? THE AMERICAN CASE, 1978-1994

VOLUME I

By

Chin-Lung Chang

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ABSTRACT

SELECTION OF STATECRAFT: ISSUE-SPECIFIC OR ACTOR-SPECIFIC?
THE AMERICAN CASE, 1978-1994

By

Chin-Lung Chang

The backbone of this study is a simplified, three-variable model, which encompasses both the actor and issue dimensions in a single framework of foreign policy analysis. Foreign policy behavior is represented by the costliness of statecraft (Baldwin 1985), while the actor and issue dimensions are measured by relative capability and the degree of negotiability, respectively. For empirical testing, a one-country study concerning U.S. foreign policy behavior toward other nation-states is carried out. An event study, extracting event records from *Foreign Affairs Chronology*, 1978-94, yields data for the variables of the costliness of statecraft and degree of negotiability. Aggregate statistics at the nation-state level are used to evaluate the three proposed power equations to obtain the final measure of relative capability. In the process of empirical testing, a new cooperation-conflict scale was derived and examined; it proves to be as good as the COPDAB scale (Azar 1980, 1993). There are several major findings. First, the more negotiable the issue (in an event), the more likely the United States is to select costly policy instruments. Second, the more powerful the target nation, the less likely the United States is to take strong measures. Third, the more powerful the target nation, the more likely the United States is to express negative affect. All these findings and many others have direct implications for how Americans manage bilateral relations with other

nations, how the United States advances world agendas, and how it survived the long Cold War period and emerged as the most powerful nation in the world. Finally, the answer to the central research question is that the American selection of statecraft is both issue-specific and actor-specific. Some evidence indicates that the causal mechanism between three key variables displays a moderated (or specified) relationship—i.e., the original relationship sustains or becomes stronger when the controlling variable is set at a certain level. Accordingly, there is some truth in saying that "power is issue-specific," or that "issues are power-specific."

To my parents

for their love and support

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extracurricular activities, nurturing a multicultural community, and holding up a competitive academic standard.

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CHAPTER ONE

INTRODUCTION

1.1 RESEARCH QUESTION

In descriptions of foreign policy behavior, a popular formula is "Who did what to whom?" This question encapsulates the subject matter that students of foreign policy all set out to address. The problem with all formulas, however, is that when they have been used over and over again, they become mere clichés, and their genuine meanings are lost. Those who use formulas without thinking twice invite criticism because they seem to be relying on commonplaces. It is the contention of this study that a great deal of substance can be found in the who-did-what-to-whom formula if we inquire further.

In our everyday life, when we visit an office or organization, the question we most frequently hear is "What can I do for you?" As a matter of fact, from the perspective of decision making or problem solving, two questions to be considered are "Who is the visitor?" and "What is the problem?" When the whole process is routine, regulated by law or determined by job descriptions, there is not much left to the discretion of the helper. The "who" question disappears, and there are fixed responses to the "what" question. But when the helper has some or full discretion in granting limited access or sharing scanty resources, the "who" and "what" questions come into play. Some helpers may show clear patterns of behavior in responding to certain types of problems regardless of the person with whom they are dealing. Other helpers may reveal a pattern of behavior specific to the person no matter what the problem is. Indeed, decision making may be

selective and perhaps discriminative. Yet the helper may take both factors into account, thereby engaging in a more complex process of decision making. The "who" and "what" questions are the essential elements that the helper consistently considers.

Similarly, when there is an incident or a problem in the international arena, foreign policymakers respond by asking two simple but important questions, namely, "Who is involved?" and "What issue is at stake?" While the "who" question is related to the actor (target) dimension, the "what" question corresponds to the issue dimension. The actor and the issue dimensions constitute the central components of foreign policy decision making. The actor dimension, most significantly, can be represented by power relations and the issue dimension by issue types. Existing studies, however, do not clarify the dynamics of these two dimensions of foreign policy behavior. This lack of clarity results from emphasizing the actor dimension at the expense of the issue dimension. Correcting this imbalance requires including both dimensions in a single framework of foreign policy analysis, dealing with knotty problems of measuring power, and searching for appropriate ways to quantify issue types.

Is the selection of statecraft issue-specific or actor-specific? This is the central question that this study is intended to explore and answer. The term "statecraft," borrowed from Baldwin (1985), simply means "foreign policy instruments/tools/options." On one hand, the selection of statecraft may be "issue-specific," which means that there is a pattern of applying various foreign policy instruments for different types of issues, regardless of who the targets are. On the other hand, the application of statecraft may be "actor-specific"; that is, there is a relationship between who the target is and the choice of foreign policy tools, no matter what issues are involved. Should the evidence suggest

that the selection of statecraft is both issue-specific and actor-specific, the working mechanisms among issues, actors and foreign-policy behavior will be identified and explored. This study is not intended to enter into the much larger debates between the proponents of the power-politics and issue-politics perspectives or between power analysis and issue analysis, even though the results may have some implications for these controversies.

To approach the research interest stated above, this study presents a simplified foreign policy model including both the actor and issue dimensions by black-boxing the domestic factors. It constructs typologies of statecraft and issue-type, develops power measures for actors, utilizes valuable events data compiled in *Foreign Affairs Chronology* from 1978 to 1994, and adopts the American case as an example to reveal underlying questions and problems. Because so little is offered in existing literature in answer to our central question, this study is necessarily exploratory as well as explanatory. An attempt is made to compare the empirical results with past findings whenever suitable, and to generate new hypotheses that may deserve future investigations. Finally, to narrow the gap between practice and academics, policy implications are articulated in the interpretation of empirical findings.

1.2 IMPORTANCE

The subject of this study is foreign policy, or more broadly, international politics. The increasing interdependence among nations makes the world seem smaller and countries seem closer to each other. The impact of foreign policy on nations, and on individuals as well, is certainly not less—and perhaps is much greater—than it was in

earlier periods. On one hand, foreign policy affects a nation's wealth, prosperity, and security. And on the other hand, foreign policy has direct or indirect (although perhaps not immediately discernible) consequences for the individual's everyday life. The ultimate importance of the subject of this study is that mismanagement of foreign policy could lead to undesirable consequences—severe damage to socioeconomic infrastructure, the loss of human lives, and in the extreme case, the destruction of civilization.

This study falls within the realm of the Comparative Foreign Policy (CFP) approach. The seminal work of Rosenau (1966) in his "Pre-theories" article was intended to establish a general theory of foreign policy that could explain all foreign policy behavior for all nations. This engendered the comparative foreign policy approach that stressed a *scientific* desideratum in the study of foreign policy. After a decade or so of flourishing, notably in producing several major events studies, the CFP approach experienced a decline in the late 1970s and early 1980s because it did not fulfill its promises as anticipated. During the rise of the CFP approach, a number of middle-range theories established themselves as competing explanations of foreign-policy behavior. Scholars of middle-range theories tend to concentrate on certain aspects of foreign policy decision making and investigate a much narrower set of determinants than do scholars using the CFP approach. It is apparent that the CFP approach to foreign policy approximates a "hard science," while the approach of middle-range theories is closer to a "soft science." This study considers foreign policy analysis to be a soft science and focuses on exploring the local mechanisms of foreign policy behavior. The discipline of foreign policy analysis itself needs more time to develop and grow. Moreover, because

the subject is so complex, starting off with fewer variables and local dynamics of foreign policy behavior is a much more reasonable and feasible strategy.

There are many ways to conceptualize foreign policy behavior. The most prominent is perhaps the cooperation-conflict scheme developed by the Conflict and Peace Data Bank (COPDAB; see Azar 1980, 1993). By contrast, statecraft (Baldwin 1985) is a largely overlooked and understudied concept. Few would disagree that all nations, even those as powerful as the United States or the Soviet Union, have a need to allocate their limited resources in response to ongoing problems or disruptive events, where issues and actors may vary greatly. This is why "selective attention" is a distinctive characteristic of foreign policy behavior. Nations, if acting rationally and wisely, simply cannot pursue a course without making allowances for costs and benefits. Statecraft, consisting of the use of propaganda, diplomacy, economics, and force, encompasses a spectrum of foreign policy options in terms of costs, from the least to the most costly. The statecraft concept is suitable for analyzing foreign policy decision making in a cost-benefit context.

The usefulness of the statecraft concept is also reflected in two other aspects of foreign policy. First, as will be shown later, a new FACINDEX scale, neither dissimilar nor inferior to the COPDAB scale, can serve as a single index to represent the cooperation/conflict phenomenon between any two nations.[1] The FACINDEX scale is derived from the concept of statecraft and takes into account the affect (i.e., overall orientation) that the sender nation expresses toward the target nation in an event. Second,

[1] Here FACINDEX is shorthand for "a cooperation/conflict index resulting from an application of *Foreign Affairs Chronology*."

unidimensional studies of war or economic sanctions are often criticized for selection biases, i.e., their failure to clarify why wars or sanctions do not occur in some instances when the existing conditions seem to warrant the use of force or economic sanctions. The application of the statecraft concept in this study, though not addressing the sample selection problem, at least provides a multidimensional assessment of foreign policy behavior.

Issue analysis is also a neglected area in foreign policy studies. If one views most foreign policy behaviors as responses to events occurring beyond nation's borders, issue-type, which signifies the nature of events, is crucially important to the examination of foreign policy behavior. Issue analysis is perhaps a sensible approach to establishing linkages between domestic and external determinants of foreign policy decision making. Nevertheless, past studies fall short of providing a complete range of issue types and do not seek ways to quantify issue types. This study constructs a typology of issues, as exhaustive and exclusive as possible, according to the nature of events. It also develops a strategy to transform various issue-types into an ordinal variable representing negotiability in terms of the degree of value instillation. Not only is this essential to investigating the dynamics between issue, actor, and foreign policy behavior, but it is also conducive to further improvements in this line of inquiry and future applications to other subfields of foreign policy analysis.

The actor dimension is best represented by the concept of power. Researchers in foreign policy as well as in other disciplines of social science have a long history of quibbling over the conceptualization and measurement of power. Since it is such a central concept, much would be lost if foreign policy analysts shied away from the

challenges of theorizing and measuring power. This study adopted a hands-on approach to comparing the results of three power equations and examining the problems associated with these measures. Based upon theoretical import and empirical performance, only one of the equations was selected for later analysis. Although such an endeavor is likely to draw harsh criticism, little progress will be made in our understanding of the concept of power if we do not make use of empirical testing.

Power relationships among nations are delicate and intricate. It should be noted that "small" does not mean "powerless." Some studies have shown that small nations can exercise influence over big nations. Moreover, having power can be either beneficial or harmful. An actor (i.e., a sending nation), strong or weak, may step up to challenge a powerful opponent or back off and handle that powerful nation with kid gloves. We still have little knowledge about nation's behavior toward opponents of different size. Some researchers have pointed out the danger of relying solely on power to explain causation without taking other contextual factors into account. When the power-centered theory fails to explain the phenomena in question, the assertion that "power is issue-specific" is used to justify this failure. This explanation is frequently used, but what, exactly, it means is rarely clarified. Generally accepted conceptions are that the Soviet Union and China have military power, that Japan and Germany have economic power, or that members of the Organization of Petroleum Exporting Countries (OPEC) have power over the oil supply. Not much light, however, is shed on the effect of specific types of power on their corresponding issue types or on other issue types. Would it be true to say that issues are power-specific? Our understanding of the relationship between power and issues is limited, and to some extent, barren. The inclusion of both the actor and issue

dimensions in a single framework of foreign policy analysis allows for an investigation into the way that power is issue-specific or vice versa. First, at this juncture we do not know whether an actor tends to take up more severe measures against a more powerful nation or against a lesser one, despite the issues involved. Second, we do not know whether or not the relationship between power and the selection of statecraft exists only when certain issues are involved. A one-country study certainly has no generalizable implications for other countries' behavior, but it at least shows how the relationships between power relations, issue-types, and foreign policy behavior can be explored.

Aside from practical considerations such as data availability, the choice of the American case as an empirical subject can be ascribed to the pivotal role that the United States plays in managing global issues and maintaining international order. It is hoped that in some way this study can make contributions to explaining the American foreign policy behavior that is crucial for ensuring a much safer world. A final potential contribution of this study is related to normative assessment of foreign policy. Does morality have anything to do with foreign policy? Assume for the moment that the question concerns us a great deal and that the answer is affirmative. Before making any attempt to answer, we must have some knowledge of whether or not a nation's behavior is consistent. Consistency is a necessary but not sufficient condition of morality. The moral, as well as immoral, foreign policy behavior of a nation shows a consistent pattern across issues and over time, regardless of power relations with the target (receiving) nation. The consistent foreign policy behavior of a nation may be moral or immoral. A vigorous treatment of the concept of morality would no doubt consider the interrelated

factors of issue-type, power, and time. It is my hope that the empirical results of this study can and will shed light on a normative evaluation of U.S. foreign policy behavior.

1.3 PLANS OF CHAPTERS

For topic as general as my research question, there is a great deal of literature to review. Power, issue-types, or each of the four types of statecraft alone could easily require a book-length exposition of earlier studies. Instead, I will forgo an attempt to write an independent chapter for the review of the literature. The ensuing discussion goes directly to the theoretical framework, model-building, hypothesis construction, and so forth. The most relevant works will be cited in these contexts.[2]

Chapter 2 first provides a brief account of the general principles of foreign policy, the development of the CFP approach, and the level-of-analysis problem. I will next describe the background and rationale that prompted my embarking on this project. Then I will lay out a simplified model of foreign policy behavior that encompasses both the issue and actor dimensions as key determinants for the selection of statecraft. Chapter 3 deals with the measurement of key variables and develops testable hypotheses for the subsequent empirical testing. Chapter 4 proposes a research design for the event study. To obtain the measures of statecraft, issue types, and other contextual variables, I adopted *Foreign Affairs Chronology* as the news source. An overview of the problems of event analysis is provided at the end of Chapter 4.

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[2] Here I concur with J. David Singer's (1975, 20) advice on reportage: "In writing up a nice and tight empirical study, don't waste time putting it into a larger text; get right down to the matter at hand." Whether or not this study will meet that "nice and tight" standard remains to be seen.

Chapter 5 presents the results of measuring national power and the implications of these results. Evidence is provided for the superiority of one of the three power equations as a representation of the real world. Chapter 6 presents the raw frequencies and percentages of the coding outcome. Definitions and descriptions of the contextual variables, apart from the key variables operationalized in Chapter 3, are presented in this chapter.

Chapter 7 explores contingency table analysis of the relationships between two variables. Later in this chapter, the scope is extended to three- or four-variable situations, using multiway contingency table analysis and loglinear modeling techniques. At the end of Chapter 7, a subsample analysis is conducted based upon different target nations or specific issue items. Chapter 8 focuses on multivariate analyses of the full model (i.e., with all the viable independent variables in the equation), consisting of the dummy Probit, ordered Probit, truncated-at-zero Poisson, and classical regression methods.

Chapter 9 examines source bias, intercoder reliability, and validity issues in general and proposes some plausible extensions for future studies. I also attempt to establish the FACINDEX scale as a valid measure of the cooperation/conflict phenomenon between nations. In doing so, I make a comparison between the COPDAB and FACINDEX scales in measuring the triangular relationships between the United States, China, and Taiwan, from 1978 to 1994. Finally, Chapter 10 offers a short conclusion. Looking back and looking forward, I recap the major findings on American foreign policy behavior and elaborate on possible contributions of this project to the study of international relations.

CHAPTER TWO

THEORETICAL FRAMEWORK

2.1 FOREIGN POLICY ANALYSIS

2.1.1 What Is Foreign Policy?

The subject of this study is foreign policy. The view that "Foreign policy is 'more important' than other policy areas because it concerns national interests, rather than special interests, and more fundamental values" (Cohen 1968, 530) seems esoteric. Yet foreign policy is, without a doubt, crucially important, because it not only has bearing on a nation's wealth, prosperity, and welfare, but also is related to a nation's survival—a life or death matter. Jones highlights this point: "[Foreign policy] seems to penetrate all that is fundamental to continued human existence and to future human welfare" (1970, 11). Given our hindsight after two world wars, it is clear that the consequences of foreign policy in extreme cases could be deadly and irrevocable.

To understand the domain and scope of foreign policy, the discussion of two basic terms, "foreign" and "policy," is necessary. First, foreign policy is concerned with things *foreign*. The distinction between foreign policy and domestic policy (other areas of governmental activity) can be made by viewing "state frontiers as conceptual as well as territorial boundaries" (White 1989, 5). Foreign policymaking is often a response to some condition or happening in the external environment beyond a nation's territory. Foreign policy also denotes a special policy area concerned with a state's security interests, which can be boiled down to its basic existence and survival.

Second, the "policy" term in foreign policy can be defined in various ways. As White (1989, 6-7) puts it, policy can be regarded as "an explicit plan of action tailored to serve specific purposes" or "a series of habitual responses to events occurring in the international environment." Further, he labels the first conception as "activist" and the second as "essentially a structured reaction to external stimuli." Either viewpoint, in its extreme version, is inadequate and troublesome. By seeing foreign policy as genuinely purposive, analysts run into the problem of specifying goals for nation-states. Moreover, by regarding foreign policy as purely reactive to the external environment, or as the internalization of systemic rules, analysts risk denying any leeway for decision makers to make choices.

David Easton's (1957, 384) notion of basic political systems may be helpful in understanding foreign policy. The making and implementation of foreign policy may be represented by this simple formula: inputs → process → outputs. As Lentner points out, a complete picture of foreign policy action should include selection of objectives, mobilization of means, and implementation (1974, 3). Foreign policy literature, however, stresses the decision-making perspective. Questions regarding how a state mobilizes resources and implements foreign policy are largely neglected. The scanty attention to evaluating the effectiveness of foreign policy results in a deep cleavage between academics and practice.

In general, the study of foreign policy suffers a weakness in conceptualizing well-defined foreign policy variables. Both Hermann (1972) and Morgan (1981, chapter 7) review a variety of ways of classifying foreign policy behavior. As can be seen, most of

the previous studies do not go beyond the nominal-level categorization in characterizing foreign policy behavior. The resultant foreign policy variables are subject to information loss and crude statistical methods.[3] This weakness impedes theoretical development and empirical testing in foreign policy analysis.

This project falls within the realm of the Comparative Foreign Policy (CFP) approach. While CFP can be regarded as a subculture of Foreign Policy Analysis (FPA), FPA can be viewed as a subfield of International Relations (IR). Holsti (1983, 19-20) attempts to make a distinction between *international politics*, *foreign policy*, and *international relations*. All these subject areas just mentioned, however, overlap to some extent with the field of comparative politics (Hanrieder 1968; Alger 1963). It is fair to say that distinctions between different disciplines concerning nations' behavior and interactions are more heuristic than real. Because this project follows the *scientific* spirit of the CFP approach, I will provide a brief account of its development in the next section.[4]

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[3] For event studies containing a great number of independent variables (e.g., 75 or more) but only a few dependent variables, Hudson warns that "[T]here reaches a point at which the independent variables overdetermine the dependent variables" (1994, 297). She stresses the need for "a more detailed conceptualization of the dependent variable."

[4] Comprehensive surveys of the study of foreign policy can be found in the works of Cohen and Harris (1975), Gerner (1992), Hermann (1983), Hudson (1994), and Smith (1986). A more detailed exposition of foreign policy analysis can be found in excellent textbooks such as those of Clarke and White (1989), Jensen (1982), and Lentner (1974).

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2.1.2 The Study of Foreign Policy

The realist school, most extensively associated with Morgenthau, has been predominant in the study of international relations since the post-war period.[5] The realist approach makes three basic assumptions:

> 1. Unitary Actor: Nation-states or their decision makers are the most important actors for understanding international politics.
>
> 2. Bifurcation between Domestic and International Politics: There is a sharp distinction between domestic and international politics where either domain is subject to its own constraints and has its own patterns of behavior.
>
> 3. A Single "Struggle for Power" Issue: International politics is preoccupied with the struggle for power among nation-states in an anarchic environment which is war- or conflict-prone (Mansbach and Vasquez 1981, 5).

In the early post-war years, idealism was considered to be the antithesis of realism. Some scholars have noticed, however, that despite arriving at conclusions opposite to realism, idealism is in fact in agreement with realism in some of its basic assumptions. For instance, both adopt monolithic assumptions in characterizing nations' behavior, and both concentrate on explanations at the systemic level. Goldmann identifies the similarities

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[5] Hans Morgenthau is the most prominent figure of the realist school, and his seminal book, *Politics Among Nations* (1985), is probably the most cited work in international relations. Waltz (1978) is the forerunner who extends realism to neorealism or structural realism. Keohane's (1986) work contains a collection of papers on the pros and cons of the realist/neorealist approach. Haggard (1991) provides a fair and balanced assessment of neorealism and its critics. The core meaning of "realism" is not as clear as it may seem, and thus it has attracted a number of vigorous critics, such as Ashley (1981), Goldmann (1988), Herz (1981), James (1989), Krauthammer (1986), and Rosenberg (1990). For a more extensive list of references containing reflections about the end of the Cold War era, see Kegley (1995). For an appraisal of the explanatory power of the realist theory, see Moul (1982) and Vasquez (1979, 1982, 1983a). Finally, Cusack and Stoll (1990) use computer simulation to evaluate basic concepts and models of the realist theory.

between these schools of thought by stating that "[t]he watershed between so-called realists and so-called idealists is not in their analysis of the present but in their view of the future" (1988, 9).

The separation of the study of foreign policy from the study of international relations dates back to the early postwar period. Notably, it began with the pioneering work of Snyder et al. (1954) who were discontent with monolithic assumptions. Snyder and his colleagues focus on domestic sources of foreign policy and stress the effects of the decision making process on foreign policy behavior. Rosenau (1966) in his seminal "Pre-theories" article attempts to establish a general theory of foreign policy that can explain all foreign policy behavior for all nations. This article triggered the formation of the CFP approach, which is dedicated to a *scientific* study of foreign policy. Rosenau's theoretical framework was adopted by, and applied to, several major events studies, such as the Inter-University Comparative Foreign Policy Project (ICFP) of Rosenau et al. (1973), the Interstate Behavior Analysis Model (IBA) of Wilkenfeld et al. (1980), and the Comparative Research on the Events of Nations Project (CREON) of Hermann et al. (1973). In addition, McGowan and Shapiro (1973) produced a compilation of the empirical findings in the CFP field, and Sage published a yearbook of CFP studies in various years, starting in 1973.[6]

At one time, the CFP approach seemed to be a rising star, i.e., a promising field. After a decade or so of academic endeavor, however, it did not fulfill its promises as

[6] For general assessments of the CFP approach and criticisms of Rosenau's works, see Hudson (1994), Kegley (1980), Smith (1979, 1981, 1983, 1986, 1987), and Starr (1988). Notably, Kegley (1980) provides a detailed chronology of the CFP movement, and evaluates the CFP approach from Kuhn's (1962) notion of "a paradigm."

anticipated because of its failures in dealing with theoretical, methodological, and empirical problems during its development. In the late 1970s and early 1980s, the CFP approach began to decline, owing to the lack of progress in either theoretical refinements or empirical findings. The CFP approach did not die out however; in recent years, continuous scholarly efforts have been made to revive academic interest in its potentialities.[7]

During the rise of the CFP approach, there were also a number of less ambitious approaches labeled "middle-range theories" emerging in the study of foreign policy. Merritt quotes the explication provided by Robert Merton about "middle-range theories":

> "[T]heories intermediate to the minor working hypotheses evolved in abundance during the day-by-day routines of research and the all-inclusive speculations comprising a master conceptual scheme from which it is hoped to derive a very large number of empirically observed uniformities of social behavior" (1987, 50).

As Smith points out, the middle-range-theory approach is intended to "disaggregate the notion of the monolithic state, a notion that had dominated realist (and much behavioral) analysis" (1986, 19). Scholars of middle-range theories concentrate on certain aspects of foreign policymaking and investigate a much narrower set of determinants than do scholars using the realist or CFP approach. A number of middle-range theories have established themselves as competing explanations of foreign policy behavior.

Accordingly, many subfields of foreign policy analysis have been developed. These include variations such as "rational actor approaches; collective action and

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[7] For efforts in reviving the CFP approach, see Ashley (1987), Caporaso et al. (1987), East (1987), Hermann et al. (1987), Merritt (1987), and Smith (1987).

bureaucratic analyses; examination of interest groups and public opinion as influences on decision-making; studies of cognition, perception and personality; and decision-making under conditions of crisis" (Gerner 1992, 134). Smith (1986, 19) elaborates on these subfields: "Jervis concentrated on the nature of perceptions; Janis looked at the role of psychological processes within decision-making groups; Steinbruner stressed the analogy of decision-making as a cybernetic process; and Allison analyzed bureaucratic and implementational views of decision-making" (Allison 1969, 1971; Janis 1972; Jervis 1968, 1970, 1976; Steinbruner 1974).

In choosing between the one-grand-theory and middle-range-theory approaches, I concur with Elster's position:

> [T]he social sciences are light years away from the stage at which it will be possible to formulate general-law-like regularities about human behavior. Instead, we should concentrate on specifying small and medium-sized mechanisms for human action and interaction—plausible, frequently observed ways in which things happen (1989, viii).

In my view, to make progress in explaining foreign policy behavior, the focus should be on exploring local mechanisms of foreign policymaking as in the middle-range-theory approach, rather than on searching for a grand unified theory as in the CFP approach.[8]

Although the quest for a grand theory to unify foreign policy studies appears to be overambitious, Rosenau's contribution in setting forth a theoretical framework of foreign policy analysis is undeniable. Therefore, it is worth paying some attention to his work.

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[8] An example in favor of the grand-theory approach is Gilpin's assertion that "[T]he more recent emphasis on so-called middle-range theory, though valuable in itself, has had the unfortunate consequence of diverting attention away from more general theoretical problems" (1981, 5).

Rosenau's (1966) pretheory employs the notion of adaptation, which concerns the relationships between independent, intervening (source), and dependent variables. Within this framework, the dependent variable is foreign policy behavior, and the independent variables are size, development, openness, the condition of penetration, and the issue area involved. Both the dependent and independent variables are connected by source-variables such as *systemic*, *societal*, *governmental*, *role*, and *idiosyncratic* factors (43).

Despite numerous criticisms of Rosenau's classification scheme and of his ranking and ordering logic, the foundation he laid can be seen in many succeeding foreign policy studies. The use of source-variables is an example of his influence. The IBA project (Wilkenfeld et al. 1980, 34) adopts a similar typology, consisting of *psychological*, *political*, *societal*, *inter-state*, and *global* components. Kegley and Wittkopf's (1983, 3) analysis of American foreign policy makes a distinction between *individual*, *role*, *governmental*, *societal*, and *external* sources. Moreover, Russett and Starr's (1989, 15) popular textbook of world politics is organized at six levels: *individual*, *role*, *government*, *society*, *relations*, and *world system*. All of these works, and many others, were influenced by Rosenau's conceptualization of foreign policy.

A group of leading scholars illustrate the extensive scope of inquiry, and thus the enormous challenges, of foreign policy study as follows:

> Those who study foreign policy are venturesome scholars. They dare to seek comprehension across an extraordinary array of human phenomena. From the calculations of officials to the demands of publics, from the norms of culture to the limits of geography, from the conflicts of bureaucratic agencies to the pressures of recalcitrant allies, from the careful mobilization of resources to the selective application of force, from the behavior of small groups to the dynamics

> of large collectivities, students of foreign policy seek to fit together the pieces of endlessly challenging puzzles. The whole gamut of human experience falls within their purview (Caporaso et al. 1987, 33).

This description fits the study of international relations as well. Unless there are discoveries of extraterrestrial civilizations, and a demand for *interplanetary politics* arises, any discipline associated with the term "international" will cover the most widespread sphere of human experience. International subjects are complex, entangled, and intertwined at various levels. As a result, the level-of-analysis problem is an overarching issue for inquiries concerning these subjects. I will address this problem in the following section.

2.1.3 The Level-of-Analysis Problem

Singer (1961) first drew attention to the level-of-analysis problem in the study of international relations. His comparison between the systemic and nation-state levels is parallel to the contrast between the analytic emphases on the parts and on the whole. The level-of-analysis problem is, in principle, a debate over "the utilities of various models of state behavior," and it is concerned with "the choice and limitations of particular units of analysis" (Moul 1973, 494-5). In attempts at "defining primitive units," the level-of-analysis problem arises because each level has its own merits and shortcomings in explaining state behavior.[9] Russett and Starr put it this way: "[A]lthough the

[9] "Primitive units" can be defined as the basic, irreducible units that drive the phenomena one wants to explain (Berkowitz 1986, p. 206). Besides "defining primitive units," there are two other meanings of the level-of-analysis problem, such as "ecological correlations" and "systems versus units." For detailed discussions, see Berkowitz.

international system level provides a more comprehensive picture of patterns and generalizations, the nation-state level provides a picture of greater depth, detail, and intensity" (1989, 13). Students of international relations or foreign policy analysis have diverse views as to whether the international system or the nation-state is the primitive unit for understanding world affairs. The level-of-analysis problem, even though it is crucial for understanding international politics, is still unresolved. At some point, one tends to accept the notion that the problem itself is so paradoxical as to be insolvable. Accordingly, I assert that researchers should be explicit about the level they choose and the assumptions they make, thereby increasing awareness of the limitations of their approaches.

The level-of-analysis problem, also identified by some scholars as equivalent to the agent-structure problem, is germane to inquiries about foreign policy.[10] One perspective suggests that structure is the only social force that molds human behavior, acts, or events. In contrast, the other proposes that structure has a never-finished effect that owes its significance to human agency (Ashley 1990, 272-3; Dessler 1989, 443). In the context of foreign policy analysis, the debate is over identifying the appropriate unit—the international system or nation-state—for understanding foreign policy. Both perspectives, although apparently contradictory, are valid, at least partially, for understanding the real world. The confrontation between the proponents of both

[10] Similar debates can be found in other disciplines such as psychology, anthropology, or economics, to name just a few. The agent-structure problem along with other dichotomous debates such as "individual and society," "actor and system," "individualism and holism," "voluntarism and determinism," "subjectivism and objectivism," and so forth, together constitute "the central problem in social and political theory" (Carlsnaes 1992, 245).

perspectives is often characterized as "paradoxical" because thus far scholars have failed to find "a self-evident way" to integrate these two perspectives (Wendt 1987, 338).

The level-of-analysis problem is important because it concerns the foundation for a possible understanding of world politics. Hollis and Smith specify three basic questions underlying the debate: "The basic *ontological* question is whether there is a real-world difference in kind in what systems-terms and unit-terms refer to. ...The basic *epistemological* question is how statements about international relations can be known, or at least rationally believed, to be true or false. ...The basic *methodological* question is what forms of explanation or understanding are to be attempted and how they are to be achieved" (1991, 394 [Italics in original]).

Carlsnaes (1992, 249) links the level-of-analysis problem to various approaches of foreign policy analysis by asking two questions: (1) Is the analytic focus *individualism* or *collectivism*? and (2) Are the actors treated as *objective maximizers of utility*, or *subjective, interpretative agents*? I summarize Carlsnaes's categorization of several varieties of foreign policy analysis in a 2 × 2 table, as shown in Table 2.1. It is apparent that researchers' differing positions are connected to different modes of inquiry.

TABLE 2.1 A Classification of Various Approaches to Foreign Policy Analysis

	Rational Actors	Interpretative Actors
Individualism	Rational Choice (Game Theorists)	Political Psychology (George 1979a; Holsti 1976; Jervis 1976; Vertzberger 1990)
Collectivism	Neomarxism (Wallerstein 1987)	Bureaucratic and Organizational Models (Allison 1971)

Note: Within parentheses are representative authors or works. This is a summarized table of Carlsnaes's (1992, 250-3) classification.

Not only do different approaches have dissimilar worldviews regarding the international system, but they also tend to have different presuppositions about the important or legitimate questions to be answered in the study of foreign policy. Each level of analysis has its own advantages and limitations in explaining foreign policy behavior. It is my contention that researchers should be aware of the ramifications of the analytical level they select and the assumptions they make.[11]

2.2 THEORY

Just as Lasswell (1950) portrayed politics as "who gets what, when, and how," foreign policy can be described as "who did what to whom, how, when, where, and why." The "how" question involves the implementation of foreign policy and is of lesser concern to foreign policy analysts. As I mentioned earlier, foreign policy literature stresses the decision-making perspective and rarely touches on the issues of implementation. The "when" question is less important if one holds the view that events (or more specifically, some of their basic characteristics) are recurrent to some extent. The "where" question, as associated with the identity of actors, can be readily related to the "whom" question. The "why" question, though the most important, cannot be answered directly; the answer must be inferred by examining the "what" and "whom" questions. Foreign policy can be reduced to a single question: "Who did what to whom?"

[11] For more on the continuous debates of the agent-structure problem, see Hollis and Smith (1992, 1994, 1996), Jabri and Chan (1996), and Wendt (1992).

Explicitly, the "what" question refers to foreign policy behavior: "What is done to another actor?" Action is based on certain purposes, and purposes are related to interests or values. The substance of interests or values is reflected in issues, agendas, or problems that are intrinsic to a setting or an event. Nations do not act out of boredom, but with certain purposes, either to respond to external events or to deal with some constant problems. Therefore, based upon the truism that a nation's actions arise from an issue, an agenda, or a problem, the "what" question is implicitly related to the issue dimension: "What issue is at stake?" The "whom" question is related to the actor dimension: "Who (which target nation) is involved?"[12]

Recall the analogy I used earlier in interpreting the common questions, "What can I do for you?" and "How can I help you?" The situations in which these questions are asked imply others: "Who is the visitor?" and "What is the problem?" Likewise, I assert that foreign policy decision makers, in responding to international events or dealing with constant problems, ask two simple but important questions: "Who is involved?" and "What issue is at stake?" These two questions correspond to the issue and actor dimensions that constitute the central component of foreign policy decision making.

In fact, both dimensions lie at the heart of the much larger debates between proponents of *issue analysis* and proponents of *power analysis*, and between the *issue-politics* and *power-politics* perspectives. I will soon introduce issue analysis and power

[12] The "who" question—"who is the sender?"—is also related to the actor dimension. The "who" question only matters, however, when the scope of inquiry falls within comparative or cross-national studies. Here I lay out the arguments from a single-sender perspective.

analysis and consider the most common problems in their applications. Here I will touch briefly on the debate between the issue-politics and power-politics perspectives.

Coplin (1980) makes a conceptual and descriptive comparison between issue politics and power politics. Table 2.2 sums up the major differences between these two perspectives. Most studies based upon the power-politics perspective (notably, the realist approach) stress the dominance of national security over other issues, or emphasize a single struggle-for-power issue. This view is challenged by Keohane and Nye (1977), among others, in light of the diverse, interdependent nature of the contemporary world. Advocates of the issue-politics perspective, in turn, suggest a focus on interactions underlying various problem areas. Throughout his book, Coplin illustrates the necessity for both viewpoints, and in the concluding chapter, he makes an attempt to integrate them and reconcile their differences.

TABLE 2.2 Power Politics versus Issue Politics

Contrast #	Power Politics	Issue Politics
1	International politics is the inevitable power struggle among nations to dominate each other.	International politics is a series of problem areas that create competition and cooperation among states.
2	National security overrides all other issues.	National security is merely one of the problem areas.
3	Peace is maintained because of balance of power.	Peace is maintained because of progress in problem solving.

Note: This table is based upon Coplin (1980, 3-4). For a more detailed contrast, see Coplin (chapter 12).

Indeed, both views are valid to some extent—national security or survival is an overarching concern for most nations, but it is not necessarily the first and foremost concern in all international activities. Based upon the sharp differences displayed in Table 2.2, it is apparent that major disagreements due to the predispositions of both sides are likely to remain.

Given my limited research resources and capabilities, I have no intention to attempt to resolve these broad debates. Instead, this study develops a robot-type, three-variable model that incorporates the issue and actor dimensions into a single framework of foreign policy behavior.[13] In particular, unlike most studies assuming the importance of one dimension over the other, this study is evenhanded in its treatment of the issue and actor dimensions. In the following section, I will first address the need to incorporate both the issue and actor dimensions in a single framework of foreign policy analysis. I will then move on to discuss the theoretical concepts and correspondent empirical referents that can be used to represent the issue dimension, the actor dimension, and foreign policy behavior.

2.2.1 The Need to Incorporate the Issue and Actor Dimensions

There are two reasons for incorporating the issue and actor dimensions into a single framework and for giving an evenhanded treatment to both. On one hand, existing studies in foreign policy or international relations do not pay much attention to the issue dimension. On the other hand, even when both dimensions are taken into account, the

[13] As will be seen later, some contextual (or controlling) variables are added in the multivariate analysis of various full models.

issue dimension is given a minor or peripheral status as compared to the actor dimension. This emphasis reflects the profound impact of the realist school on the contemporary inquiry into world affairs.

The dominance of the actor dimension and the relative neglect of the issue dimension are better described in past empirical studies. Coplin et al. (1973, 74) assert that not many studies of foreign policy have looked beyond the *struggle-for-power*, *war-peace*, or *cooperation-conflict* dimensions suggested by Morgenthau's framework. They observe that in McGowan and Shapiro's (1973) inventory of scientific (i.e., empirical) findings regarding foreign policy behavior, 94 of 118 propositions contain dependent or independent variables directly or indirectly related to power-struggle or war-peace questions. Potter (1980, 406) further points out that there is no single proposition concerning issue area in McGowan and Shapiro's survey. This is not to say that issue analysis is an uncharted territory in international relations or in other fields of the social sciences. Here I simply make the point that the issue dimension is a much neglected area in foreign policy analysis.

In the introductory chapter of his book, Coplin (1980) describes a personal journey of transformation from embracing the power-politics perspective to accepting the issue-politics perspective as an equally valid approach to international politics. In the following passage, quoted in Sullivan (1990, 60), one can see that during his transformation, Coplin began to regard the issue-politics perspective as a middle-range-theory approach to international politics, and the power-politics perspective as a grand-theory approach:

> The power politics framework provides a grand theory perspective; the issue politics view, a middle-range theoretical orientation. The former attempts to organize international relations events into a relatively small number of power struggles—East-West, North-South, Arab-Israeli, while the latter organizes information around innumerable discreet sets of issues. ...Therefore, both levels of analysis are required in the study of international politics. The power politics framework brings a grand order to the analysis of international politics, but it ignores those international issues that cannot be directly related to major power struggles. The issue politics framework gives us the tools to analyze specific events and conditions, but it does not highlight the interrelationships that may tie issues and actors together (Coplin 1979, 6-9).

The emphasis on, or preference for, the power-politics viewpoint (or the actor dimension) over the issue-politics viewpoint (or the issue dimension) can also be seen in the issue/actor framework proposed by Mansbach and Vasquez (1981), as will be shown below. One should notice that the issue dimension is ubiquitous in any social setting or interaction at any level. The issue dimension exists across different levels of international politics, namely, the subnational, national, and systemic levels. The issue dimension is perhaps the missing link to establishing a common ground for comparing findings from different levels of analysis. The presupposition that the issue dimension has less analytic power or is less important than the actor dimension appears to be the result of the influence of realist thinking. This gives rise to the need to include both dimensions in a single framework, without prejudging which dimension is more important or has more explanatory power.

This study draws heavily upon Mansbach and Vasquez's (1981) book. Their work is an ambitious and systematic effort to establish an issue/actor framework to challenge the realist assumption of a single struggle-for-power issue. One of their major contributions is to extend Rosenau's (1966) distinction between *tangible* and *intangible*

issue areas to further classify types of stakes—*concrete*, *symbolic*, and *transcendent*—in policy content by the level of value instillation (pp. 60-3). Following this lead, Li (1993) divides issues into *substantive*, *symbolic*, and *transcendent* types in examining the effectiveness of economic sanctions. I will rely on Mansbach and Vasquez's conceptualization in representing and measuring the issue dimension.

Figure 2.1 depicts Mansbach and Vasquez's (1981) model representing the relationships between three issue variables and the cooperation/conflict phenomenon. In stipulating the causal paths of *issue dimension, types of stakes, nature of stake proposal,* and *cooperation/conflict*, they argue as follows:

> Issue dimension affects the types of stakes under contention, with an actor dimension producing more symbolic and transcendent stakes, and a stake dimension producing mostly concrete stakes. ...An actor dimension then tends to produce conflict, because it gives rise to stakes which engender proposals that make for disagreement. Disagreement leads actors to behave toward each other in a negative fashion, which in turn produces or intensifies hostility. Such hostility reinforces an actor dimension approach to issues, thereby producing a vicious circle. (1981, 66-7)

Their framework has several shortcomings. First, their classification of three issue variables—issue dimension, type of stakes, and nature of stake proposal, as shown in Figure 2.1—does not add much but confusion to a vivid description of the properties of issues. In my view, a single summarized measure, such as their distinction between concrete, symbolic, and transcendent issue types, would suffice.

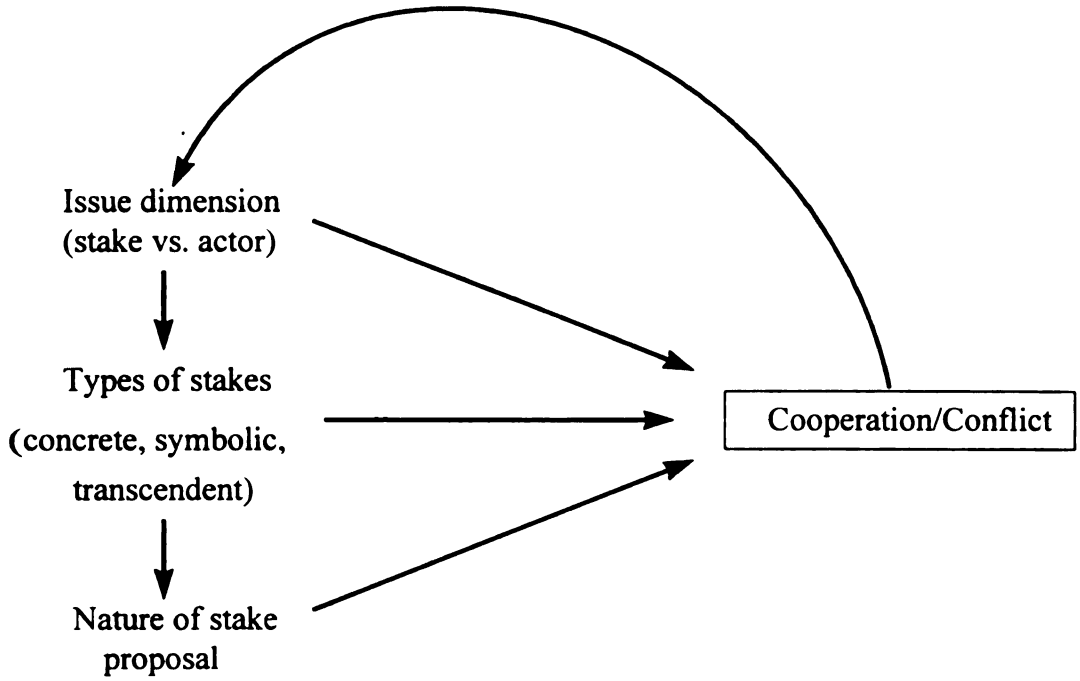

FIGURE 2.1 A Causal Model of Issue Variables and Cooperation/Conflict
Source: Mansbach and Vasquez (1981, 66).

Second, the hypothesized relationship between issues, actors, and stakes is unwarranted. The reasons that types of stakes must be related to the actor or stake dimension is neither clear nor convincing. Instead, it is very likely that types of stakes can be generated directly from the issue dimension.

Third, to achieve modeling parsimony, it is reasonable to assume an independent relationship between the actor and issue dimensions in the first place. Whether an actor's behavior is issue-specific, or issues are selected, manipulated or manufactured to satisfy an actor's ulterior motives is a much more complicated question that can only be pursued after investigating the individual effect of the actor or issue dimension on foreign policy behavior.

Finally, their adoption of the cooperation-conflict dimension as foreign policy output leads to a tendency to overstate the conflict behavior. According to their arguments, conflict becomes a necessary result once symbolic and transcendent stakes are involved. Their conceptualization is biased, as is frequently the case in realist studies, in favor of the conflict or war dimension of states' behavior.

The importance of the actor dimension is vigorously argued in the following passage by Edward H. Carr, a prominent historian and realist:

> In order to understand a political issue, it is not enough (as it would be in the case of a technical or a legal issue) to know what the point at issue is. It is necessary also to know between whom it has arisen (1939, 102).

The point is well taken. My insistence on including both dimensions in a framework and treating them in an evenhanded manner does not deny the weight of the actor dimension. In turn, such an analytic orientation makes it possible to explore the role that the actor

dimension plays in foreign policy decision making and to broaden one's views of that role in relation to the issue dimension. Without examining both dimensions at the same time, however, the utility of the issue dimension would still be undetermined.

Foreign policy behavior and both the issue and actor dimensions are broad theoretical constructs. For empirically testing a simple framework, I chose to use a representative concept and its empirical referent for each construct. The concept of statecraft (Baldwin 1985) is employed as an indicator of foreign policy behavior, the concept of relative capability for the actor dimension, and the concept of issue types (Mansbach and Vasquez 1981) for the issue dimension. Next, I will discuss these concepts and their relevance to foreign policy analysis.

2.2.2 Statecraft—A Neglected Concept

As mentioned earlier, there are a variety of ways of characterizing foreign policy behavior (Hermann 1972; Morgan 1981, chapter 7), although a majority of them do not go beyond the nominal level of measurement. In conceptualizing foreign policy behavior, this project utilizes Baldwin's four-fold classification of statecraft as follows:

1. **Propaganda** refers to influence attempts relying primarily on the deliberate manipulation of verbal symbols.
2. **Diplomacy** refers to influence attempts relying primarily on negotiation.
3. **Economic Statecraft** refers to influence attempts relying primarily on resources which have a reasonable semblance of a market price in terms of money.
4. **Military Statecraft** refers to influence attempts relying primarily on violence, weapons, or force (1985, 13-4).

The term "statecraft" basically has two meanings. In this project, "statecraft" is synonymous with "foreign policy" or "foreign policy instruments/tools/options". I avoid using "statecraft" to connote "skill," "art," or "statesmanship." Moreover, I have some disagreements with Baldwin's definitions above. For instance, the words "influence attempts" or "deliberate manipulation" are, in my view, too strong. Since many resources are required for the use of economic or military policies, and this indicates an actor's strong commitment or resolve to deal with the pertinent problem, describing these high-cost instruments as "influence attempts" seems to make sense. By contrast, the amount of resources needed for the use of propaganda or diplomacy is relatively small, and these low-cost instruments can be used at an actor's discretion. Making inference about an actor's intentions or motives from the application of low-cost instruments seems to present inherent difficulties. Therefore, I adopted a neutral stand by viewing these four categories simply as policy tools or instruments from which the sender can choose.

Baldwin's concept of statecraft originates from Lasswell's (1945) notions. In characterizing foreign policy behavior, Lasswell (p. 9) initiates a classifying scheme consisting of "information, diplomacy, economics, force (words, deals, goods, weapons)." At times I will use these terms interchangeably to denote propaganda, diplomatic, economic, and military instruments. The statecraft concept is also widely employed as an organizing outline in many works, including those of Holsti (1983), Lentner (1974), Ransome (1965), Russett and Starr (1989), Wendzel (1981), and Westerfield (1963), to name only a few.

There are two main advantages to applying the concept of statecraft to the study of foreign policy behavior. First, Baldwin's classification—propaganda, diplomatic,

economic, and military instruments—denotes a spectrum of policy options at the disposal of policymakers, from the least to the most costly. The ordinal nature of the statecraft concept will hold under most circumstances. Rare cases, if any, would indicate that executing economic sanctions is less costly than launching propaganda or diplomacy, or more costly than engaging in military actions.[14] An application of the statecraft concept moves the inquiry one step closer to a cost-benefit analysis of foreign policy decision making.

Second, Baldwin's four-fold classification covers a comprehensive range of foreign policy behavior. An empirical study based upon such classification is less vulnerable to selection bias than those concentrating on one or two types of statecraft.[15] Moreover, the range of choices underlying the statecraft concept is close to the choices

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[14] Some might suggest that the U.S. military action against Grenada in 1983 was much cheaper than any U.S. economic sanctions against Japan or China, or that the long-lasting economic sanctions initiated by the United States toward Cuba in 1960 were far less expensive than the American participation in the Bay-of-Pigs incident in 1961. Both arguments are faulty. In regard to the former, in responding to a certain event, the target toward which the sender's action is directed is fixed or specific. And in regard to the latter, the comparison should be made based upon the costs within a fixed period of time. Yet, unlike economic sanctions, military action often involves the likelihood of casualties; thus, it is generally conceived as more costly than economic sanctions.

[15] Criticism of selection bias, as frequently directed toward the studies of war, deterrence, or economic sanctions, has somehow become fashionable. In deterrence studies, for example, the main criticism is that the analysis of incidents where deterrence occurred does not tell the full story about why deterrence did not occur in other incidents *in similar* situations. The data set of this study, covering four types of statecraft, is not suitable for solving the selection-bias problem, because it contains a great number of irrelevant cases. A proper remedy for the selection-bias problem in deterrence studies is to broaden the data base of deterrence incidents to include cases of crisis situations or qualified salient events, as suggested by Collier and Mahoney (1996, 91).

foreign policymakers would have on the table in responding to external events or in dealing with constant problems in their daily practices.

2.2.3 Issue Analysis

As I have shown, power analysis of international politics has placed an unparalleled emphasis on the actor dimension and paid scanty attention to the issue dimension.[16] Baldwin responds to this practice by suggesting that "in discussing power as a type of causation, it is essential to specify or at least imply who is influencing whom with respect to what; in short, both scope and domain must be specified or implied" (1979, 163). In summing up Sprouts' early works, Knorr (1972, 175) asserts that one frequently seen drawback of power analysis is its inability to create some framework including "*objectives* (what is to be accomplished), *strategies* (by what course of action), and *contingencies* (against what adversaries, where, under what operating conditions, etc.)." As a result, issue analysis has reacted to the overemphasis on the actor dimension in power analysis, and has called for a shift of focus to the issue dimension.

Why do issues matter? Wildavsky's (1962) article provides an excellent justification of issue analysis. If decision makers treated every event as something brand new, they would then have to invest enormous energy, capacities, and many other

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[16] In a broad sense, power consists of several dimensions such as *power potential* (resources), *weight, domain, range,* and *scope* (Deutsch 1968, chapter 3). The scope of power, equivalent to the issue dimension, concerns the exercise of power over *something*, while the domain of power, equivalent to the actor dimension, considers the exercise of power over *someone*. The problem is that power analysts often concentrate on the domain of power, but ignore the scope of power. Therefore, a distinction between power analysis and issue analysis would be appropriate for highlighting the imbalance of current practices.

resources to react by following the standard textbook procedure for decision making. Decision makers are able to take short cuts, however, by developing "set patterns of responses to frequently encountered stimuli" (p. 718).

Since most international events recur in some form, they can be fitted into distinctive frames of reference in the foreign-policymaker's mind. This suggests that certain linkages or correspondences might exist between types of issues and the choice of foreign policy instruments. Policymakers seem to know, because they have learned from the past, are constrained by unspoken international norms, or come to their own conclusions, that not every type of issues deserves economic sanctions or the use of force.[17] For instance, it is a fortunate fact that the United States and the Soviet Union did not go beyond the level of diplomacy to resolve their differences over the issue of weapons of massive destruction. Moreover, it might very well be true that nations have not fought each other over economic issues alone in the postwar period because they conceive the use of force under such circumstances as excessive.

In short, policymakers might have a full range of options, i.e., from propaganda to military instruments, in dealing with some types of issues, but not in dealing with other types of issues. In cases of limited options, the constraints may be self-imposed or imposed by the external environment.

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[17] A case in point involves environmental issues. But consider the following event: "April 11, 1994 US imposes limited trade sanctions against Taiwan, accusing the country of failing to stem illegal trading of tiger bones and rhinoceros horns; first time US has ever imposed sanctions against any country in effort to save endangered wildlife" (Council on Foreign Relations 1995) There is, however, a first time for everything. We do not yet know if there will be an occurrence of *environmental war*—two nations fighting each other because of environmental issues.

Issue analysis has attracted great attention in public policies studies, notably, in studies of community power and legislation; but it is relatively underdeveloped in the study of foreign policy.[18] Issue typology developed in foreign policy can be divided into two broad categories: "process-oriented and "content-based" typologies (Potter 1980, 405). The process-oriented typologies, following Dahl's (1963) notion, can be found in the works of such scholars as Huntington (1961), Lowi (1964,1967), Rosenau (1966, 1967), and Zimmerman (1973). All these works assert that issues can be classified by the participants and by the decision-making process. For example, Rosenau (1966), using the tangibility of means and ends as evaluative criteria, divides foreign policies into four issue types: *status, territorial, human resources,* and *nonhuman resources.*

Content-based typologies are included in studies such as those by Brecher et al. (1969), and in PRINCE (Coplin et al. 1973), CREON (Hermann et al. 1973), and COPDAB (Azar 1980, 1993). These works categorize issues based upon the substantive problem areas implicitly or explicitly underlying policy context. For example, Brecher et al. (1969) provide a four-fold classification system: *military-security, political-diplomatic, economic-development,* and *cultural-status.*

Froman (1968) develops a set of evaluative criteria for constructing policy categories, including exhaustiveness, exclusiveness, validity, reliability, level of

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[18] For issue analysis in the field of international relations or foreign policy, see Froman (1968), Potter (1980), and Diehl (1992), whose well written articles summarize basic notions and past studies. Mansbach and Vasquez (1981) make endeavors to develop an issue/actor paradigm. Coate (1982) considers the relationship between issues and international institutions. Randle (1987) examines the connection between issues and the evolution of the state system in the modern era. For issue linkages in game-theoretical analysis, see Lohmann (1997) and the references therein.

measurement, ease of measurement, and differentiation. Potter (1980), adding the criteria of theory building and hypothesis testing to Froman's criteria, provides a comprehensive survey of previous foreign policy studies employing issue area as the core concept.

The construction of a process-oriented issue typology is often associated with practical difficulties. Greenberg et al. (1977, 1542) identify several factors, including *temporality*, *multiplicity of aspects and participants*, and *interaction*, that reveal the complexity of analyzing the policymaking process. Potter (1980, 422) recommends black-boxing process variables, as researchers in the CREON or PRINCE project do, or equivalently, categorizing policy contexts by substantive problem areas. This method appears to be preferable in developing an issue typology.

For the purpose of empirical testing, I followed Potter's advice and constructed a content-based, rather than a process-oriented, issue typology that is described in the ensuing section. In search of a representative measure for the issue dimension, I found issue-type to be a natural candidate. In particular, Mansbach and Vasquez's (1981) classification based upon the level of value instillation exhibits an ordinal nature, which gives more leeway to statistical analysis than most other nominal categorization of issues. Li's work (1993) is an example of an empirical study applying Mansbach and Vasquez's notions. I will follow suit in this regard.

What is an issue? Among various definitions, I adopted the following:

> An issue is a disputed point or question, the subject of a conflict or controversy. It is a problem for interested parties. The subject matter of an issue might be abstract (a philosophical or theological question, for example) or concrete, involving or implicating particular peoples or things (Randle 1987, 1).

As can be seen, the level of value instillation (abstract, concrete, or somewhere in between) is a significant characteristic of issues. Abstract issues, such as democratization and human rights, reflect fundamental—philosophical or cultural—differences between nations, which are less tangible and thus cannot be resolved easily or in a short period of time. Concrete issues such as trade and tariffs involve the exchange or distribution of things (goods or money) that can be defined in terms of numbers and thus are amenable to observation and evaluation. Between these extremes are symbolic issues such as arms control, which can be quantified to some extent but not fully. For example, the amount of arms is quantifiable, but the underlying implication for the security concern is not calculable; therefore arms control lies somewhere between the abstract and concrete issue-types.

In brief, issue-type is a natural candidate for representing the issue dimension. Following Mansbach and Vasquez's (1981) conceptualization and adopting Li's (1993) terminology, I classified issues into three types—*substantive*, *symbolic*, and *transcendent*, from the lowest to the highest level of value instillation.

2.2.4 Power Analysis

In their study of politics, researchers usually feel ambivalent about the analysis of power. On one hand, it is arresting for its utility as a primary conceptual vehicle that can explain almost all spheres of human behavior. On the other, it is controversial for the ambiguities associated with its conceptualization and the succeeding difficulties accompanying its quantification (Jensen 1982, 199; March 1955; Riker 1964). The most popular definition of power is Dahl's assertion that "*A* has power over *B* to the

extent that he can get *B* to do something that *B* would not otherwise do" (1957, 202-3). According to de Rueck's summary of Bachrach and Baratz's (1963) semantic classification of various power terms, *power* can be characterized as "threat of sanctions," ***influence*** as "persuasion or expectation of reward," *force* as "violent coercion," ***manipulation*** as "covert misdirection or misinformation," and *authority* as "consent in the joint pursuit of common aims" (1985, 114). The distinction between various power terms is not readily apparent; in particular, *power* and *influence* are often used interchangeably. Viewing power as influence, however, renders the power concept less measurable, because "[w]e seldom know what a second actor would have done in the absence of the first actor's power" (Goldstein 1994, 50-1).

For those concerned with international politics, from Thucydides to Machiavelli to Morgenthau and other theorists at present, power has been the most basic concept or variable.[19] In contemplating the concept of power, McClelland sums up three fundamental perspectives:

> At least three somewhat different images are evoked in the common use of the term power. The first image makes out power to be something akin to a possession or a piece of property. The second causes it to be conceived as a moving force resembling, in social affairs, the functions of an electric current or

[19] There is a long list of references for the subject of power analysis. I will mention only a few here. Wrong (1979) provides succinct discussions of various aspects of power in the social sciences. The book edited by Bell et al. (1969) consists of a collection of classic articles by early pioneers. Claude (1962) provides an explication and appraisal of key systemic concepts such as "balance of power" and "collective security." Nye (1990) analyzes key power concepts from the American perspective, particularly focusing on the "transitions of power" in the postwar period. Both Baldwin (1979) and Carroll (1971) present a brief yet comprehensive introduction to the concept of power, and some criticisms of its applications to international politics. For a more general and extensive treatment of the subject in the study of international relations, see Rothgeb (1993), Sullivan (1990), and Stoll and Ward (1989).

> the flow of a fluid in physical or biological structures. The third image causes power to be viewed as a trait or an attribute appearing in the relations of men (1966, 61).

The first image is equivalent to seeing power as a means to an end, while the third image presents power as a function of relations. These two perspectives are most frequently discussed in the study of power.

On one hand, power can be regarded as a means to an end. Some have made a distinction between *having* (potential) and *exercising* (actual) power (Lasswell and Kaplan 1950, 71; Oppenheim 1981, 10-21). This implies that power cannot be exercised automatically, but only through some means, i.e., the utilization of a power base (resources). The selection of foreign policy instruments therefore represents a transformation from potential power to actual power. Accordingly, the foremost task of foreign policy decision makers is "to manage this transformation by selecting among the various options available, so that goals are realized and costs are kept to minimum" (Hastedt and Knickrehm 1991, 44). This perspective is in fact germane to foreign policy behavior but has little to do with the actor dimension.

On the other hand, power can be seen as a function of relations. Some observers have made it clear that power is a relational, rather than a property, concept (Bachrach and Baratz 1963, 633). The existence of political or social power emanates from the "relationships of interaction between persons and groups" (Oppenheim 1981, 6). According to this logic, a nation can have power only when compared to other nations. Power relations between nations are an important characteristics of the actor dimension.

More specifically, the concept of relative capability is widely used in the study of international politics to represent the power relations between nations. Goldstein defines *capability* as "the *ability* or potential to influence others" (1994, 51). Waltz suggests that, "To use power is to apply one's capabilities in an attempt to change someone else's behavior in certain ways" (1979, 191). The concept of relative capability, referring to resources or potential power, can serve as an empirical referent of "power relations" between nations. Through the construction of a single summary index of national power, one can assess the relative capabilities among nations.

As can be seen, the perspective of regarding power as present in relations, not the perspective of viewing power as a means to an end, is most relevant to the actor dimension under consideration. I employ "power relations" to represent the theoretical construct of the actor dimension. Specifically, I concentrate on the concept of relative capability, which is amenable to operationalization and empirical testing.

In short, the issue and actor dimensions are regarded as the central component of foreign policy decision making. The costliness of statecraft is taken as an indicator of the variations of foreign policy behavior. In issue analysis, the concept of "issue-type" is my candidate for best describing the issue dimension. More, in terms of power analysis, the concept "power relations" is adopted to represent the actor dimension. In the following section, I will seek to formulate a model of foreign-policymaking that fits the purpose of exploring and examining the relationships between issue-type, power relations, and statecraft.

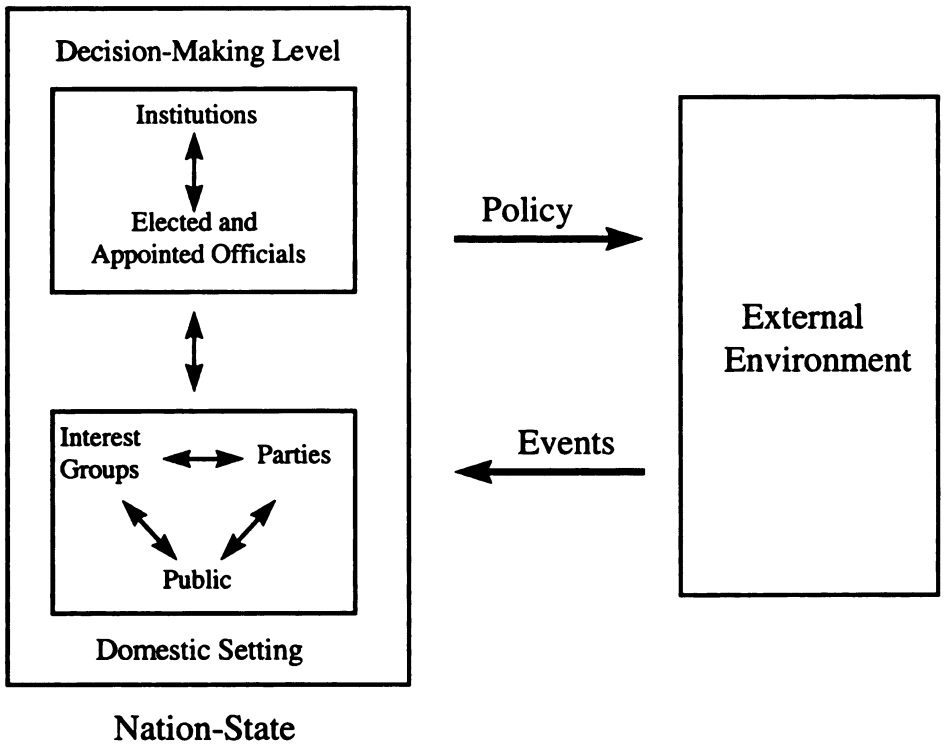

FIGURE 2.2 A General Foreign Policy Model
Source: Hughes (1978, 3).

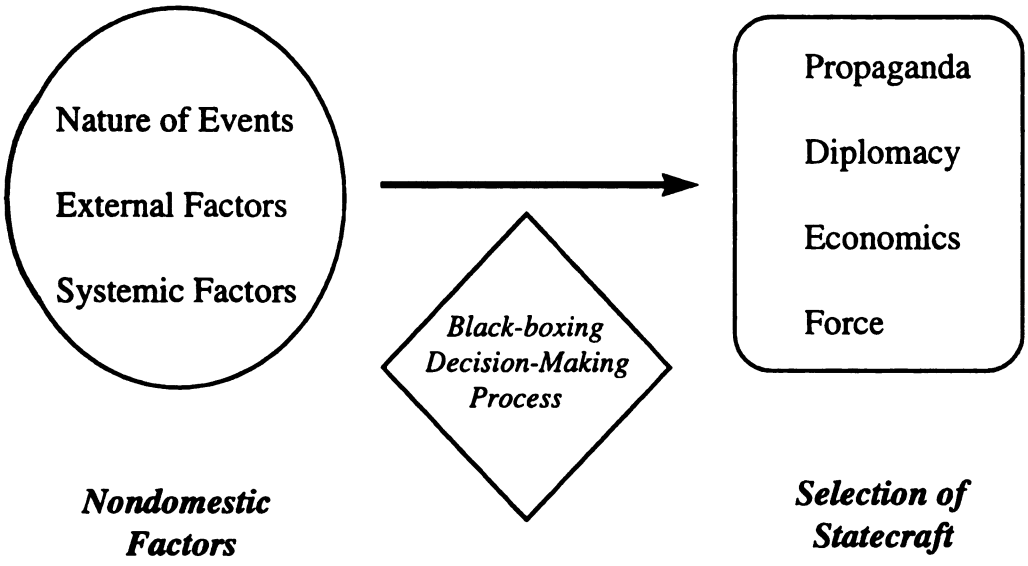

FIGURE 2.3 A Foreign Policy Model Black-boxing Domestic Factors

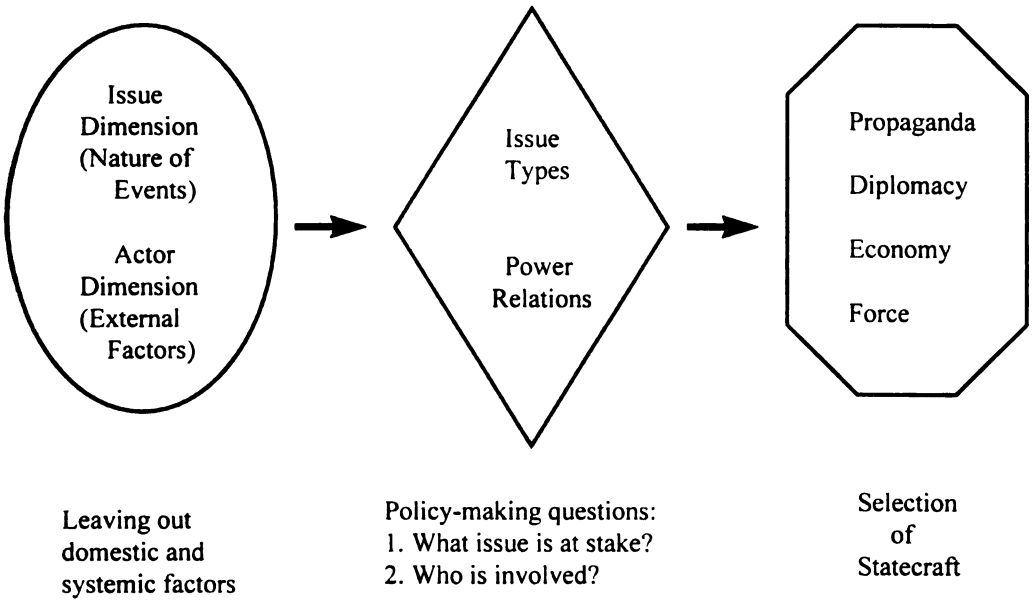

FIGURE 2.4 A Simplified Foreign Policy Model Consisting of the Issue and Actor Dimensions

2.3 MODEL

In Hughes's conceptualization of a general foreign policy model, as shown in Figure 2.2, events are stimuli from the external environment, while policies are responses to the external environment (1978, 3). Likewise, after the domestic factors have been black-boxed, the resultant model, as displayed in Figure 2.3, presents the nature of events, external factors, and systemic factors as the principal determinants of foreign policy decision making in response to events.[20] As opposed to the structuralist view that external environment dictates policy behavior, the model presented in Figure 2.3 identifies either external or systemic factors as "constraining conditions" for foreign policy decision making (Carlsnaes 1992, 255).

Because the effect of systemic factors on foreign policy behavior is a lesser concern of this project, I could take systemic factors out of the model for the time being. Figure 2.4 portrays a simplified foreign policy model that leaves out both domestic and systemic factors. On the left-hand side of Figure 2.4 are the remaining components of foreign policy input—the nature of events and external factors—which in turn can be represented by the issue and actor dimensions, respectively. Then the issue and actor

[20] Systemic factors refer to "the entire [international] system as a single unit and not to sub-systems within it," while external factors refer to "those attributes of a nation that require reference to some external entity in order to give the variable meaning" (East 1978b, 145-6). In addition, systemic factors can only be "analyzed over time in order to discern changes in the system," while external factors are "variables on which nations can be compared at the same point in time." Based upon this distinction, variables of the actor dimension such as regime types (democracy vs. autocracy) and power relations (relative capability) are examples of external factors, while the dummy variable denoting the end of the Cold War era, which will be employed later on in this study, is a simple example of systemic factors.

dimensions can be replaced by issue types and power relations accordingly, as shown in the diamond in the middle of Figure 2.4.

On the right-hand side of Figure 2.4 is foreign policy behavior or output—four types of statecraft. The simplified foreign policy model in Figure 2.4 provides a graphical representation of the framework I proposed earlier. Depending upon research interests and availability, factors other than issue types and power relations may be included as contextual (or controlling) variables. Moreover, variables of interest concerning foreign policy behavior may be substituted for the four types of statecraft.

Among various definitions of foreign policy, I adopted the definition suggested by Hermann (1972, 72): "[F]oreign policy consists of those discrete official actions of the authoritative decision makers of a nation's government, or their agents, which are intended by the decision makers to influence the behavior of international actors external to their own polity." This definition emphasizes the decision-making and problem-solving perspectives of foreign policy. Foreign policy here is conceptualized as comprising discrete actions that concern the intended influence, not the actual effect, of a nation on its foreign targets. Moreover, foreign policy decisions are made in reaction to the emergence of external events or to deal with constant global problems or problems between two nations.

In addition, this project adopts the assumptions of the "Rational Actor" models—which assume a unitary actor and rationality—as formulated by Bueno de Mesquita (1981). The unitary-actor assumption holds that the state or the government acting on behalf of the state is the only decision unit necessary for analysis. Furthermore, it implies the existence of a strong leader who dictates the selection of foreign policy options. The

rationality assumption is that foreign policy behavior is purposive (goal-oriented) and intentionally rational (expected-utility maximizing).

Hermann (1978, 32) finds the characterization of policy as goal-seeking behavior attractive but troublesome to most analysts of foreign policy. The major obstacle is that the specification of policy goals from the researcher's standpoint is somewhat arbitrary and subjective and thus often leads to dubious and unreliable results. Hermann argues that a shift from goal-seeking policy to *behavior* (or *discrete actions*), the approach used by the CREON investigators, would be beneficial to the study of foreign policy (p. 33). The focus on "behavior" or "discrete actions" resembles the revealed-preference approach. To circumvent the difficulties of specifying a goal structure and conducting a precise cost-benefit calculation, this study adopts the revealed-preference approach rather than the posited-preference approach.

As Lavar (1986, 32) points out, the revealed-preference approach assumes that people make decisions rationally through some general form of cost-benefit analysis, and then concentrates on investigating the nature of people's preferences. In contrast, the posited-preference approach begins with postulating people's order of preferences in terms of utility, and then examines the rationality, or lack thereof, of people's decision making according to the principle of maximum utility. In the context of foreign policy analysis, an application of the revealed-preference approach would focus on investigating the way a state reaches its decisions, assuming that the state is rational.

Both the unitary-actor and rationality assumption are more likely to hold up in war-like or crisis situations (Bueno de Mesquita 1981, 27-9). Jensen underscores the merits of including both assumptions as a starting point in studying foreign policy:

> There are certain advantages to utilizing such a research strategy, largely derived from the simplicity of the model itself. It becomes an inexpensive approximation of reality in which analysts can attempt to think about what they would do if they were the other state. ...To the extent that it can actually explain foreign-policy behavior, it has the very real virtue of parsimony, that is allowing one to understand phenomena with a minimum of complexity (1982, 6).

Whether or not either assumption is realistic is an empirical question. It is my contention that a complex model does not necessarily reveal more than a simple one. The proof of the pudding is in the eating. In view of the uncertainties about whether the framework proposed in this study is of any use, the core assumptions of the "Rational Actor" model—both *unitary-actor* and *rationality*—serve as a good starting point for carrying out empirical testing.

In short, the preceding discussion depicts a foreign policy model in which a nation has to look into issue-type and power relations in response to an event and select among various policy options after considering their costs. The challenge of decision making is how to solve the problem and keep the costs to a minimum. Few would disagree that the most important stage of decision making is *defining the problem*. In this model, the issue-type of the event and power relations between actors are two key determinants that come to foreign policymakers' minds. The research questions are the following: (1) Which determinant matters—issue-type or power relations? (2) If both matter, which matters more, and what causal pattern underlies the three-variable relationship? In the next section dealing with hypothesis formation, I will postulate the relationships between issue-type, power relations, and the selection of statecraft.

2.4 THEORETICAL HYPOTHESES

A meaningful formation of hypotheses requires some allusion to previous theories. The challenge here is that with regard to the relationship between *issue types*, *power relationships*, and *the selection of statecraft*, little has been offered in the literature of international relations or foreign policy. Recall that the concept of statecraft, i.e., the dependent variable, roughly represents a continuum of the range of foreign policy choices in terms of costs. Existing studies rarely go beyond the simple prescription, "Keep the costs to a minimum." Although the concept of cooperation vs. conflict has been a major concern in a great number of studies, it is different from the concept of statecraft.[21] Moreover, in most of these studies, the focus is on explanations at the systemic level; that is, they place emphasis on behavior among major powers or assume a similarity among all the target nations.

In relating power relations to the selection of statecraft, this question is of interest: Is there a difference in a sending nation's choice of foreign policy tools in terms of costs for target nations of different sizes? Note that the independent variable considered here is the receiving nation's size. Some empirical studies of the comparative foreign policy approach, including those of East (1973, 1978a), and Salmore and Hermann (1970), make comparisons of foreign policy behavior between nations of different sizes. The

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[21] As will become clear later, if the concept of cooperation vs. conflict is seen as a continuous spectrum of foreign policy behavior or bilateral relations, the concept of statecraft (from the least to the most costly policies) signifies the magnitude of action, while the concept of affect (mainly, positive vs. negative) represents the overall orientation. Without knowing the overall orientation, the concept of statecraft alone cannot give a complete picture of the underlying continuous phenomenon or behavior. If the concept of cooperation vs. conflict is treated as a dummy, its meaning is close to that of affect, but not that of statecraft.

independent variable in these studies is the sending nation's size. Obviously, these studies are not of any help to my conjectures about a nation's behavior toward other nations of different sizes.

Another approach that may aid in hypothesis formation concerning power relations and statecraft is the use of analogies. In any professional sport, a team can choose between playing hard or less hard consistently throughout the season regardless of the opponents. Choosing to playing hard consistently distinguishes a very good team from a very bad team, if the teams are equally talented. In that case, there is no correlation between how a team plays and the strength of its opponents. But if the strength of the opponents matters, one will find two types of playing styles: (1) A team plays hard against a tough opponent but plays less aggressively against an easy opponent; and (2) A team plays less aggressively against a strong opponent but plays hard against a weak opponent. This analogy outlines the propositions one could formulate for the relationship between power relations and statecraft. Because of the competitive nature of professional sports, however, this analogy seemed inappropriate for my hypothesis formation.

Similarly, some well-known analogies in international relations do not offer much help in this regard, because of the different contexts contained in their respective studies. Examples are Spanier's (1993, 11) description of various games played by nations, the classification of "hawks," "doves," and "owls" in Carnesale, Nye, and Allison (1985), the hard-liners vs. soft-liners in Snyder and Diesing (1977, chapter 4), and the deterrence or spiral model in Jervis (1976, chapter 3). It is surprising to see that the relationship

between power relations and statecraft has not drawn any significant attention in the study of international relations or foreign policy.

Linking issue types to the selection of statecraft is concerned with the following question: Is there a difference in a nation's selection of policy instruments in terms of costs when it confronts events with different levels of value instillation? Empirical extensions of Mansbach and Vasquez's (1981) work include those of Li (1993), Vasquez (1983b), and Vasquez and Mansbach (1984). Notably, Li (1993, 361) provides some evidence in support of the proposition that the lower the level of value instillation in a linkage (issue) type, the more likely economic sanctions are to succeed (*Phi* = .26, N = 118). Vasquez (1983b) presents some findings highly relevant to this study. The data set contains "American and West German interactions collected by a content analysis of the *New York Times* for 780 randomly selected dates between 1949 and 1975" (p. 181). The major finding in his study is that the more tangible an issue involved in an event, the more likely it is to generate conflict, given certain conditions (p. 189).[22] Among several propositions suggested by Vasquez, this one is most useful to this study:

> Proposition 2 maintains that the more tangible the issue, the more costly the resources employed. In addition, since the expenditure of costly resources increases the probability that an issue will be resolved, the expenditure of costly

[22] Vasquez's study adopts Rosenau's (1966) typology in which issue areas are classified into four types: (1) intangible ends and intangible means, (2) intangible ends and tangible means, (3) tangible ends and intangible means, and (4) tangible ends and tangible means (1983b, 181). The typology as a whole is a nominal-level measurement. As a matter of fact, the concept of tangible/intangible means is equivalent to a distinction between verbal and physical actions (roughly, propaganda/diplomacy vs. economics/force). It does not make sense, however, to mix ends and means in constructing an issue typology. By ignoring the categories of means, issues then can be dichotomized as tangible or intangible. A dummy variable can be viewed as nominal or ordinal.

> resources on tangible issues should be associated with cooperative interactions (p. 184).

The proposition in the first sentence of the passages above is meaningful. Nevertheless, the logic of the subsequent statement is faulty, because the use of costly instruments does not necessarily lead to cooperation—it may lead to conflict as well.

Since existing literature does not say much about the relationships under consideration, this study is intended to be exploratory as well as explanatory. Even with the dearth of clues in previous studies, I can formulate two sets of theoretical hypotheses as follows:

Hypothesis P1. A sending nation tends to apply less costly statecraft when the target nation is more powerful.

Hypothesis P1'. A sending nation tends to apply more costly statecraft when the target nation is more powerful.

Hypothesis P2. A sending nation tends to apply more costly statecraft when the issue involved has a lower level of value instillation.

Hypothesis P2'. A sending nation tends to apply less costly statecraft when the issue involved has a lower level of value instillation.

Hypotheses P1 and P1' are contradictory, as are Hypotheses P2 and P2'. Both hypotheses in a pair cannot be true. There is a possibility, however, that neither will be supported, if the statistical pattern is not significant.

How do these hypotheses fit the various schools of thought in international relations? Sending nations with different attributes, such as size, may hold different world views and thus follow different patterns in their behaviors toward other nations. Therefore, in linking various world views to the theoretical hypotheses above, it makes

sense to have a point of reference, e.g., a particular nation, or a certain group of nations with similar characteristics. Here the point of reference is the United States as a sender, since U.S. foreign policy behavior will be put to the test later.

For a clarification of the ensuing comparisons, see Table 2.3, which lists the liberal/idealist and realist world views summed up in Kegley (1995), and Table 2.4, which contains the pragmatist world view from the American perspective described by Crabb (1985). It can be easily seen from Table 2.3 that the basic difference between idealism and realism is in their assumptions about human nature—the former is optimistic, while the latter is pessimistic. In my view, idealism may be too naïve, while realism may be too cynical. Both idealism and realism focus on the workings of the international system, and say nothing specific about how a nation should go about its business. Pragmatism is so fluid, however, that some might even refuse to consider it as a serious enterprise, and reject it as a mere theory. From Table 2.4, one can see that the pragmatist world view stresses "a pluralistic universe," "ideological syncretism," "adaptation," "gradual change," and so forth (Crabb 1985, 38-55). Accordingly, foreign-policymakers with the pragmatist philosophy constantly define, revise and adjust their purposes, positions, or behaviors. It is difficult, if not impossible, to predict what a pragmatist will do next or at a certain point of time in the future. As long as a pragmatist keeps taking action, however, some overall behavioral pattern may eventually emerge.

TABLE 2.3 Worldviews of Liberalism/Idealism, and Realism

(a) The Liberal/Idealist World View

1. Human nature is essentially "good" or altruistic and people are therefore capable of mutual aid and collaboration.
2. The fundamental human concern for the welfare of others makes progress possible (that is, the Enlightenment's faith in the possibility of improving civilization was reaffirmed).
3. Bad human behavior is the product not of evil people but of evil institutions and structural arrangements that motivate people to act selfishly and to harm others—including making war.
4. War is not inevitable and its frequency can be reduced by eradicating the anarchical conditions that encourage it.
5. War and justice are international problems that require collective or multilateral rather than national efforts to eliminate them.
6. International society must reorganize itself institutionally to eliminate the anarchy that make problems such as war likely.
7. This goal is realistic because history suggests that global change and cooperation are not only possible but empirically pervasive.

(b) The Realist World View

1. A reading of history teaches that people are by nature sinful and wicked.
2. Of all the people's evil ways, no sins are more prevalent, inexorable, or dangerous than are their instinctive lust for power and their desire to dominate others.
3. The possibility of eradicating the instinct for power is a utopian aspiration.
4. Under such conditions international politics is, as the English sixteenth century philosopher Thomas Hobbes put it, a struggle for power, "a war of all against all."
5. The primary obligation of every state in this environment—the goal to which all other national objectives should be subordinated—is to promote the "national interest," defined as the acquisition of power.
6. The anarchical nature of the international system necessitates the acquisition of military capabilities sufficient to deter attack by potential enemies.
7. Economics is less relevant to national security than military might and is important primarily as a means to acquiring national power and prestige.
8. Allies might increase the ability of a state to defend itself, but their loyalty and reliability should not be assumed.
9. Never entrust the task of self-protection to international organizations or to international law.
10. If all states seek to maximize power, stability will result from maintaining a balance of power, lubricated by fluid alliance systems.

Source: Kegley (1995, 4-5).

TABLE 2.4 The Pragmatist Worldview in the Postwar American Foreign Policy

1. *A "Pluralistic Universe."* [A] pivotal tenet of pragmatic thought is the idea that the universe is "pluralistic"; as such, it cannot be comprehend or adequately explained by a single all-embracing or unicausal theory of knowledge, since these invariably deny the infinite variety, indeterminacy, and random nature of reality.
2. *Ideological "syncretism" and adaptation.* Pragmatism is a philosophically omnivorous movement, deriving its ideas and principles from a wide diversity of philosophical systems, from American experience, and from other sources. As a mode of thought, Pragmatism is loose, untidy, characterized by anomalies and inconsistencies, and (as pragmatists conceive of the universe itself), "unfinished."
3. *Innovative and creative diplomacy.* In the thought of leading pragmatic thinkers like William James and John Dewey, creative intelligence plays the key role in determining whether the human organism will adapt successfully to its environment and whether human society will evolve or retrogress.
4. *The choice of policy alternatives.* [H]umans are continually required to choose a course of action among the alternatives available, nearly always in full knowledge that all of them have shortcomings and defects. As postwar experience has repeatedly demonstrated, as often as not policy makers must choose among "the least of evils"—or that course of action abroad which is least unattractive or less damaging to the nation's interests at home and abroad, than other possible responses.
5. *Diplomacy and the "thundering present."* This is what former Secretary of State Dean Acheson and other officials have identified as the preoccupation of policy makers with the "thundering present" in the administration of foreign relations. The *ad hoc* quality of American diplomacy—its consistent concern with immediate and urgent external problems—is a characteristic which has been noted (and not infrequently deplored) by informed observers at home and abroad.
6. *Evolutionary change and gradualism.* Better understanding of the principles of pragmatic thought enables us to comprehend another characteristic of postwar American diplomacy: its consistent preference for *gradual and evolutionary change* vis-á-vis either revolutionary change or attachment to the *status quo*. In one of his essays, William James said that, "The fundamental fact about our experience is that it is a process of change." ... Pragmatism, therefore, provides strong philosophical reinforcement for middle-of-the road or moderate solutions for political problems—the kind of solutions historically preferred by the American society.
7. *The quest for community.* In the nuclear age, the risks inherent in a global war have grown exponentially—to the point of endangering the future of civilization itself. Never in human history in fact has the need for "a moral equivalent of war" been so compelling. William James, John Dewey and other pragmatists advocated a growing sense of community among individuals and groups, and the elimination of war in human society would perhaps be the culmination of that tendency.
8. *The "lessons of experience."* [A] key tenet of pragmatic thought is the belief that experience provides the best and only really reliable criterion for determining the validity of contending beliefs. Charles Peirce's classic question—What real difference does it make whether or not a particular idea is believed? —has served as a cornerstone of pragmatic philosophy. Peirce's inquiry was of course merely a philosophically elevated version of the popular maxim that, "experience is the best teacher."

Source: Crabb (1985, 38-55).

Hypotheses P1 and P2 might be classified as pragmatist views. From the U.S. perspective, the choice of high-cost options directed toward another powerful nation, whether positive or negative, will not serve its long-term interests. Positive actions such as helping other major powers with economic aid or arms sales may threaten the superpower status of the United States after a period of time. Negative actions such as bilateral trade wars or military conflicts between the United States and another major power may have a contagious or spillover effect and undermine the stability of the entire international system. Therefore, an avoidance of high-level cooperation or intense conflict with powerful nations, as implied in Hypothesis P1, seems to be in agreement with fundamental U.S. interests.

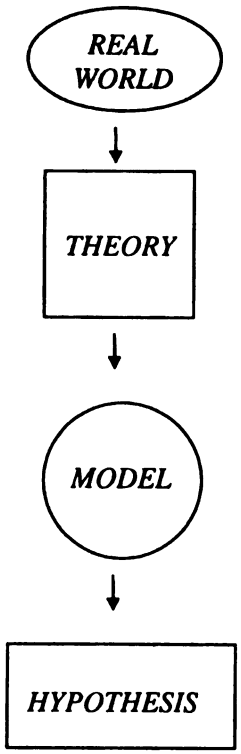
Moreover, a pragmatist sees the universe as pluralistic and thus advocates an approach of adaptation and gradual change, which may be characterized as nonmoralistic—not insisting on turning the world upside down overnight. Issues with a high level of value instillation, such as democratization or human rights, are often associated with fundamental convictions in ideological, cultural, or religious spheres. The issue of human rights is a good example. A report prepared for Congress recommends that "The United States should also factor human rights concerns into trade policy" (U.S. House of Representatives, Committee on Foreign Affairs 1993, 24). A moralist would insist on taking strong measures to force a rapid improvement in the human rights conditions in other nations, while a pragmatist would take moderate actions to allow for gradual progress. If U.S. foreign-policymakers hold a pragmatist view, they would choose less costly statecraft in dealing with transcendent issues, as indicated in Hypothesis P2.

I am reluctant, however, to label Hypotheses P1 and P2 formally as the representative of the pragmatist perspective, because realism can make similar claims. The realist notion of "national interests" is elusive. A realist can simply accept Hypothesis P1 or P1', or Hypothesis P2 or P2', by defining national interests accordingly.

Because previous studies in international relations or foreign policy offer little to guide the hypothesis formation of this project, I will list all the probable candidates for hypotheses and then test them empirically. Perhaps after this empirical testing, the utility of the framework proposed in this study can be more adequately evaluated in substantive terms and its connections to the existent theories will be clarified.

CONCLUSION

In this chapter, I have described a three-variable model, which includes both the issue and actor dimensions as key determinants of foreign policy behavior. This model is a reaction to the overemphasis on the actor dimension and the neglect of the issue dimension frequently seen in the study of international relations or foreign policy. Figure 2.5 presents a flowchart summing up my thought process, beginning with the central research question and moving on to theory, model, and hypothesis formation. In the next chapter, I will seek to operationalize three key variables—issue-type, power relations, and the costliness of statecraft.



Thought Process	Content	Dependent Variable	Independent Variables: *Issue*	Independent Variables: *Actor*
REAL WORLD	Central research question: Is the selection of statecraft issue-specific or actor-specific?	Foreign policy behavior	What issue is at stake?	Who (Which target nation) is involved?
THEORY	• Issue politics vs. power politics • Issue analysis vs. power analysis • An issue/actor paradigm (Mansbach and Vasquez 1981)	Various ways of classifying foreign policy behavior: • Hermann 1972 • Morgan 1981	Nature of events /the issue dimension	External factors /the actor dimension
MODEL	A simplified foreign policy model leaving out domestic and systemic factors	Selection of statecraft: • propaganda • diplomacy • economic tools • military tools (Baldwin 1985)	Issue types: • transcendent • symbolic • substantive (Mansbach and Vasquez 1981; Li 1993)	Power relations
HYPOTHESIS	Quantification of key variables and formulation of hypotheses	Costliness of statecraft	The level of value instillation /issue negotiability	Relative capability

FIGURE 2.5 A Flowchart of Theory, Model, and Hypothesis

CHAPTER THREE

MEASUREMENT

According to proverbial wisdom, "You can't make bricks without straw," and "You can't make a silk purse out of a sow's ear." Quality data are essential to empirical research. The present state of data in the study of international relations, in terms of both quantity and quality, is unsatisfactory, to say the least.

In particular, not much effort is invested in collecting information at the microlevel or obtaining variables at the higher measurement level. Information at the microlevel is amenable to data manipulation techniques (aggregation, data reduction, etc.), but this is not true of information at the macrolevel. Given many nominal-level variables, there is little a researcher can do to go beyond contingency tables in the process of statistical analysis.

In this study, I sought to operationalize three key variables, at least at the ordinal level of measurement. Data acquisition of the variables regarding the costliness of statecraft and issue types demanded implementing a research design of event studies, while for data collection of various power measures, I relied on the sources of aggregate statistics at the level of nation-state. Under such circumstances, I had to use a dual track.

In measuring the costliness of statecraft and issue types, I had to develop a typology for each variable. The strategy adopted here was to establish a two-layer structure of categories by deriving subcategories from the main categories. The two-layer structure was built on the sequential action scheme (Hermann et al. 1973, 44-5). Later, it

will become clear that the sequential action scheme was not only beneficial to the coding process, but also helpful in detecting coding or punching errors.

There are two reasons for deriving subcategories. First, the subcategories provide valuable additional information. A detailed classification of issues and policy instruments is conducive to exploring, as previously mentioned, the "set patterns of responses to frequently encountered stimuli" (Wildavsky 1962, 718). For instance, some issues warrant the use of economic instruments. Among these issues, some attract positive economic policies, while others attract negative economic policies. Taking the classification one step further, economic policies can be divided into trade policies and financial policies. If there is a web of connections between issues, actors (target nations), and policy instruments, only a detailed typology can help untangle the web.

Second, subcategories facilitate cross-comparison with other event data sets if a considerable degree of commonality exists. The construction of typology in this project relies on typologies of previous studies. For instance, a majority of the action categories in the World Events/Interactions Survey project (WEIS; see McClelland 1976) are included as the subcategories of propaganda or diplomacy. Through conversion, it was possible to make at least some comparisons between the frequency distribution of categories in the WEIS project and this study. One problem is that the utility of cross-comparison may be greatly reduced if the time frames of two studies do not overlap.

As can be seen below, the measurement of the costliness of statecraft can be achieved without the subcategories of foreign policy behavior. The derivation of subcategories is a prerequisite, however, for operationalizing issue types based upon the level of value instillation.

In light of the importance of the concept of power and the controversies surrounding, I proposed three equations for empirical testing and comparison. The measurement of national power, despite the difficulties involved, is too important to pass on to others. All the three power measures attained numerical precision at the ratio level. One of them was chosen to join other variables in the statistical analysis, based upon an appraisal of empirical performance.

In addition to the three key variables, there were other variables of interest. Some of them were included originally in the coding scheme, and others were obtained by data transformation of the original variables. The discussions of how those additional variables were defined and operationalized appears in Chapter 6. In the following sections, I will start with a brief discussion of the utility and construction of typology, then move on to the construction of the statecraft and issue typologies, and finally formulate of three equations for measuring national power.

3.1 THE UTILITY AND CONSTRUCTION OF TYPOLOGY

The purposes of establishing typology or classification are (1) to achieve parsimony of description and (2) to advance the development of theory.[23] A typology satisfying the first goal is said to be parsimonious, while a typology meeting the second

[23] Bailey (1994) provides a comprehensive introduction to classification techniques: typology and taxonomy. Classification, the most common term, can be defined as "the general process of grouping entities by similarity" (p. 4). Furthermore, Bailey makes a distinction between these two often interchangeable terms: "The basic difference, then, is that a typology is conceptual while a taxonomy is empirical. ...The term *taxonomy* is more generally used in the biological sciences, while *typology* is used in the social sciences" (p. 6; [Italics in original]).

goal is said to be scientific. Social scientists are interested not only in describing the real world, but also in exploring and explaining the relationships between objects or phenomena.

A classifying scheme that can cover the largest number of observations and relationships with the fewest manageable categories is said to be parsimonious. A parsimonious typology or classification permits us to have a more organized and efficient description of the real world. More importantly, a scientific classification demands "the identification of relationships and the establishment of measures" which are critical to the development of theory (Hermann 1972, 64). The development of a scientific classification not only facilitates the formulation of hypotheses, but it also leads to the search for testable categories which can be measured directly or indirectly by observable phenomena.

Bailey points out the difficulties a researcher might confront in developing a typology:

> One basic secret to successful classification, then, is the ability to ascertain the key or fundamental characteristics on which the classification is to be based.... It is crucial that the fundamental or defining characteristics of the phenomenon be identified. Unfortunately, there is no specific formula for identifying key characteristics, whether the task is theory construction, classification, or statistical analysis. In all of these diverse cases, prior knowledge and theoretical guidance are required to make the right decisions (1994, 2).

Two of the most fundamental criteria for constructing any typology are *exhaustivity* and *mutual exclusivity*. Exhaustivity means that if there are N objects to be classified, there must be a class of categories sufficient to cover each of the N objects. For example, a typology of nation-state actors should consist of at least the 180 or so UN

members. It is usually helpful to include the category "Others" in the classifying scheme. One reason for including this category is that it makes the classifying scheme more inclusive, and another is that cases under the "Others" category can be reexamined and reorganized to revise the classifying scheme.

Mutual exclusivity means that one object cannot be assigned to two categories of the same variable, i.e., any two categories must be distinct from each other. The primary function of this rule is to reduce ambiguities. When analyzing a complex event, in measuring a highly abstract concept, or when lacking sufficient information, however, researchers often face predicaments in conforming to this criterion. For example, a three-fold classification of issues in international events as economic, military, or political issue types, would create a considerable degree of ambiguity in the coding process. Foreign events, or interactions with other nations, are rarely non-political. A complex event such as the Persian Gulf War can be interpreted as related to either of the three issue types. The boundaries of a social event are not always clear.

Two additional criteria, which were useful for developing a more detailed typology and thus were beneficial to my construction of typology here, are *recurrence* and *distinctiveness*. To meet the criterion of recurrence, researchers should avoid attaching specific historical or geographical references to categories. For example, the WEIS project consists of unique, but not recurrent, issue categories such as Rhodesian independence, the Berlin conflict, the USSR-China conflict, and others (McClelland 1976). The design of the issue-coding scheme in the WEIS project is appropriate for a longitudinal case study, but not for a general analysis of foreign policy behavior.

The criterion of distinctiveness is related to the salience and scope of a category. This criterion, apparently closely associated with the principle of parsimony, prevents one from deriving a potpourri of small categories, which in fact can be regrouped into a single, distinctive category. Small categories are not necessarily trivial. Whether or not the scope of a category is appropriate depends upon the nature of the inquiry. For example, O'Leary and Coplin (1975, 271) include "Hijacking" in their issue-coding scheme for analyzing intelligence reports issued by the U.S. Department of State. In my view, the category of "Hijacking" is not as distinctive as the category of "Terrorism," which covers not only hijacking, but also bombing, kidnapping, and the like. A detailed categorizing system consisting of various terrorist activities would be suitable for a focused study of terrorism, but does not fit my purpose of analyzing a broad range of foreign policy behavior. Having clarified the criteria above, I will turn to the development of typologies of statecraft and issue-type.

3.2 TYPOLOGY OF STATECRAFT

Following Baldwin's (1985) notion, I classified foreign policy behavior into four main categories: propaganda, diplomatic, economic, and military statecraft. Adhering to the principle of parsimony, this classification scheme is confined to a manageable number of categories. Those four categories basically exclude each other, and thus the criterion of exclusivity is met. *Propaganda* and *diplomacy* are two terms that are subject to many definitions, however, and there might be some degree of overlapping between propaganda and diplomatic instruments, depending upon how they are defined. I will attempt to draw a line between these two types of statecraft.

In regard to the criterion of exhaustiveness, the four-fold classification covers the majority of foreign policy behaviors; that is, it accounts for the most significant or most widely reported behaviors. This classification does not include (1) less significant dimensions, e.g., cultural, educational, and scientific instruments (Coombs 1964, 6-22; Frankel 1965; Hermann 1982, 155-6); and (2) less observable dimensions, e.g., secret diplomacy, intelligence activities, or other covert operations (Bozeman 1992; Codevilla 1992). In deriving the subcategories of foreign policy behavior, I made an effort to incorporate individual instruments of these often overlooked dimensions into the four-fold classifying system.

In the remainder of this section, I will provide a brief overview of the four types of statecraft and identify the sources (i.e., various typologies in previous studies) for the construction of subcategories. Then I will define the concept of the costliness of statecraft, illustrate the process of measuring it, and discuss relevant issues of its ordinal nature. At times I call these subcategories "policy items" to distinguish them from four types of statecraft or other broad categories of foreign policy behavior.

Propaganda

Propaganda is a form of communication consisting of symbols and signs.[24] As Lasswell puts it, "The moods and images are the symbols; the use of words and word-

[24] For general discussions of the subject of propaganda, see Brown (1963), Franck and Weisband (1972), Jackall (1995), Jowett and O'Donnell (1986), Lasswell et al. (1980), Martin (1971), Qualter (1962), and Whitaker (1962). For an updated, more complete list of references, including those in multimedia forms (e.g., audiotapes, documentary films, and movies), see Cole (1996).

substitutes are the signs" (1980, 526). *Propaganda*, often used interchangeably with the terms *psychological warfare* and *international communication*, refers to "government-sponsored programs for foreign persuasion" (Perusse 1965, 248). More often than not, the connotations of persuasion are neutral, while those of propaganda are negative. White points out that both have almost the same core meaning, "an effort to influence the thinking of others in order to influence their behavior" (1971, 27). Qualter defines propaganda as "the deliberate attempt by some individual or group to form, control, or alter the attitudes of other groups by the use of the instruments of communication..." (1962, 27).

Jowett and O'Donnell (1986) make a distinction between communication, propaganda, and persuasion. Communication is defined as "that which happens when A communicates to B about X" (p. 14). The basic components of communication are a sender, a message, a channel, and a receiver. Communication is a process of sharing meaning and information.[25] Moreover, Jowett and O'Donnell's definition of propagandizing is "to disseminate or promote particular ideas" (1986, 15). When placing emphasis on intention, one often sees propaganda as closely associated with control or manipulation. In addition, persuasion is defined as "a communicative process the purpose of which is to influence" (p. 24).

In this study, the definition of propaganda instruments is not as broad as that of communication, and not as narrow as that of propaganda. I define propaganda

[25] It should be noted that communication, in a broad sense, is not limited to words or verbal expressions. Emerson highlights this point of view in *The Poet*: "Words are also actions, and actions are a kind of words" (quoted in Franck and Weisband 1972, 119).

instruments as the words or verbal expressions of a sender nation directed toward a target nation, outside a formal, diplomatic context, either to communicate its positions on various issues or problems, or to influence the thinking or attitudes of the people of the target nation. On one hand, I stress both the influence that is intended in persuasion and the understanding commonly resulting from communication. On the other hand, I classify some verbal actions with an official, diplomatic format such as formal protests and ultimatums as diplomatic instruments.

Indeed, words are cheap. The effect of verbal communication or persuasion directed toward people of other states, especially the heads of governments, however, cannot be overlooked. If properly and wisely used, words can be an efficient tool in changing people's mind and therefore their behavior. In analyzing the symbolic dimension of foreign policies, Hoffmann makes the keen observation:

> [T]he ratio of purely verbal policies is extraordinarily high today in everyone's foreign policy. ...The universal competition for prestige (which can be lost through excess use of force) and the prevalence of wielding influence and using mild forms of coercion put a premium on verbalism. The importance of signals, messages, communications in bargaining situations like today's (marked by mixed interest and limited force) implies that verbal policies are indeed policies and tantamount to acts insofar as they affect an opponent's understanding of a nation's attitude and reactions (1968, 64).

In brief, words or verbal expressions play an essential role in a nation's external behavior. Despite their low costs, propaganda instruments may have the same effects or achieve the same goals that other more costly instruments are intended to achieve.

There are several ways to categorize the instruments of propaganda. Given its actual forms, propaganda can be presented through any conceivable means of

interpersonal or mass communication, ranging from the most common (speeches, rumors, rallies, marches, etc.), to the less common (postage stamps, films and plays, paintings and cartoons, and the like) (Qualter 1962, 74). The channels or means of communications for propaganda include printed matter, radio, television, movie theater, and others. Holsti provides a list of propagandists' techniques: *Name-calling*, *Glittering Generality*, *Transfer*, *Plain Folks*, *Testimonial*, *Selection*, *Bandwagon*, and *Frustration Scapegoat* (1983, 203-4). None of the categorizing systems just mentioned are suitable for this project. The classification by means of communication is trivial, and the classification using the jargon of propagandists is awkward in everyday parlance.

In search of an appropriate list of subcategories, I found that the WEIS project (McClelland 1976) exhibits strength in classifying the verbal behavior of nations. The WEIS project contains twenty-two single-word categories which are further divided into sixty-three small items or subcategories. McClelland and Hoggard (1969, 714-5) regroup the categories into six types of behavior: "Verbal Cooperation, Cooperative Action, Participation, Verbal Conflict—Defensive, Verbal Conflict—Offensive, and Conflict Action." Most items under the headings *Verbal Cooperation*, *Participation*, *Verbal Conflict—Defensive*, and *Verbal Conflict—Offensive* are adopted as individual propaganda instruments in this study.

Diplomacy

The term "diplomacy" has a wide range of meanings, varying from formal negotiations to all kinds of foreign policy behavior.[26] A British diplomat once said, "Foreign policy is what you do; diplomacy is how you do it" (Russett and Starr 1989, 156). This observation, however, does not clarify the usual confusion about the difference between foreign policy and diplomacy. Russett and Starr further suggest that "The central feature of diplomacy is communication" (p. 157). As mentioned earlier, the meaning of communication is so broad as to include both verbal and nonverbal behavior. Likewise, it is vague and inadequate to regard diplomacy as "the formation and execution of foreign policy on all levels, the highest as well as the subordinate" (Morgenthau 1985, 158, n9). The definition of diplomacy as "nonmilitary aspects of foreign policy" is also unsatisfactory, because it fails, at the very least, to distinguish economic statecraft from verbal behavior.

In his classic, *Diplomacy*, Nicholson adopts Sir Ernest Satow's definition of diplomacy as "the application of intelligence and tact to the conduct of official relations between the governments of independent States" (1950, 50). This definition is somewhat outdated because of its total neglect of diplomatic functions other than tactics and strategies. Watson defines diplomacy as "negotiation between political entities which acknowledge each other's independence" (1984, 33). The problem with this definition is that diplomacy often involves tasks other than negotiation.

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[26] For a general introduction to the subject of diplomacy, see Bailey (1968), Berridge (1995), Ikle (1964), Nicolson (1950), and Watson (1984). Feltham (1993) elucidates basic knowledge about conducting official business as a diplomat.

Hermann specifies the primary functions of diplomacy as "(a) the presentation of the government's position on external affairs, (b) the protection of its citizens and their property abroad and the regulation of their dealings with those from outside the country, and (c) the negotiation on behalf of the government with other international actors" (1982, 159). This is close to what we have in mind about the purview of diplomatic instruments. To distinguish diplomacy from propaganda, I impose one constraint on Hermann's definition; that is, those functions are carried out within a formal, diplomatic context. For example, a warning, complaint, or criticism is viewed as part of propaganda, while a formal protest or recall of an ambassador is regarded as part of diplomacy. In this study, diplomacy is defined as official communications or transactions between governments that follow common usage or international law. Some categories of the WEIS project such as "Consult," "Visit," and "Host Meeting" (McClelland 1976), are borrowed as subcategories of diplomatic statecraft.

Economic Statecraft

Sanctions signify situations short of war.[27] The increasing use of economic statecraft has attracted more and more attention from scholars interested in assessing its

[27] General discussions of the subject of economic sanctions can be found in Baldwin (1985), Daoudi and Dajani (1983), Doxey (1996), Hufbauer et al. (1990a), Knorr (1975), Martin (1992), Miyagawa (1992), Renwick (1981), and Wu (1952). Hufbauer et al. (1990b) make a great contribution to sanctions studies by compiling case histories of economic sanctions since World World I. A collection of essays can be found in Cortright and Lopez (1995), Knorr and Trager (1977), Leyton-Brown (1987), Nincic and Wallensteen (1983), and Weintraub (1982). The studies just mentioned primarily focus on *negative* economic sanctions. For the *positive* side of economic sanctions, such as foreign aid or development assistance, see Browne (1990), Friedman (1995), Patterson (1997), and Tisch and Wallace (1994). In addition, for the making of foreign economic

utility and effectiveness. Some have attributed this phenomenon to the declining utility of military statecraft (Baldwin 1985, 67-8). Among many scholarly works, worth mentioning are, Baldwin (1985), and Hufbauer et al. (1990a).[28] Both respond to the question of "Why do statesmen continue to practice economic statecraft when 'everybody' knows that it does not work?" (Baldwin 1985, 3). Nonetheless, they look at the question very differently. Hufbauer and his colleagues conducted an empirical study which shows a poor (34%) success rate of sanctions since World War I (1990a, 93). Consequently, they draw generalizations from the successful cases for policy prescription (p. 114). Instead, Baldwin discusses sanctions within a framework of power analysis. This leads to his position that scholarly inquiry has underestimated the symbolic utility of sanctions (1985, 96-9). The assessment of the efficacy of sanctions is still inconclusive.

The applications of economic statecraft need not be directed toward merely economic objectives. Barber (1979) suggests that the imposing of economic sanctions often reveals a mixture of objectives. In Knorr's words, economic statecraft can be used as "leverage" to coerce other nations to comply with certain specified behavior (1977a, 99). Knorr's notion implies coercive issue linkage, i.e., using economic advantage to achieve noneconomic ends. Moreover, forms of economic statecraft can be divided into "positive sanctions (actual or promised rewards) and negative sanctions (actual or threatened punishments)" (Baldwin 1971, 72). Baldwin makes the interesting

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policy, see Cohen (1994), and Destler (1980). For a general introduction to international political economy, a somewhat related subject, see Frey (1984), Gilpin (1987), and Spero (1990).

[28] For a review of both books, see Lenway (1988).

observation that "[t]hreats costs more when they fail; while promises cost more when they succeed" (p. 75). Negative sanctions are costly because they end business interests that otherwise would be sustained.

In addition to the distinction that can be made between positive and negative sanctions, economic statecraft can be broadly bifurcated into the use of trade and financial resources. Since Baldwin (1985) supplies a comprehensive list of both positive and negative sanctions, I adopted his categorizing system to construct subcategories of economic statecraft.

Military Statecraft

Military statecraft is referred to as "the last resort" in international politics.[29] Despite the declining utility of military statecraft relative to other foreign policy instruments, it should not assumed that the use of military force will become extinct.[30] As suggested by Goldstein, in the effort to repel aggression and ensure security, "there is often no substitute for military means" (1994, 180). Vasquez makes a similar observation:

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[29] War is probably the most widely studied subject in inquiries about international politics. For general discussions on this subject, see Blainey (1973), Brodie (1973), Gilpin (1981), Northedge (1974), Schelling (1966), Seabury and Codevilla (1989), Vasquez (1993), Waltz (1959), and Young (1968). A collection of articles can be found in Art and Waltz (1993), and Vasquez and Henehan (1992). Weisburd (1997) compiles summaries of historical cases regarding the use of force since World War II. For more practical matters, Dunnigan (1993) elucidates how to make war, while Tobias et al. (1982) supply a comprehensive guide to modern weaponry.

[30] For more on the declining utility of military force, see Knorr (1975, 107-16; 1977b).

> War is an institution within the modern global political system that serves an important political function—the resolution of intractable issues. Until there is a functional equivalent to this institution, war will remain a way of handling certain situations (1993, 197).

Evidence shows that most nations still devote vast resources to the maintenance and improvement of military capability.

One way to categorize military force is by its types of forces, technology, and weapons (Goldstein 1994, 186-213). Another way, more meaningful to theoretical development, is to classify it by the level or magnitude of military force used. For example, Pearson and Rochester (1984, 257) distinguish between war and force without war.[31] The former involves "sustained armed combat" between nation-states, and the latter includes "border skirmishes, raids, interventions and other armed clashes." The COPDAB project makes a distinction between *military hostile actions, small scale military acts, limited war acts,* and *extensive war acts* (Azar 1993). I extracted individual items of military actions from the COPDAB project to form a categorizing system for military statecraft.

Often neglected dimensions of statecraft, such as cultural, educational, and scientific exchanges, are incorporated into the subcategories of diplomacy. For covert operations or subversive activities that frequently involve rebels or dissidents, I assigned two subcategoreis—one for positive instruments, and the other for negative instruments—to each type of statecraft.

[31] For more on force without war, see Blechman and Kaplan (1978).

The resultant typology of statecraft is shown in the codebook in Appendix I. The dummy variables—PROPAGAN, DIPLOMAC, ECONOMIC, and MILITARY—signify the presence or absence of individual types of statecraft. The nominal variables—PROPITEM, DIPLITEM, ECONITEM, and MILIITEM—represent individual policy items used within these statecraft types.

The Costliness of Statecraft

The costliness of statecraft (STACRAFT) is defined as the most costly statecraft or instrument used in an event. If a military instrument was used, regardless of the presence or absence of other types of instruments, STACRAFT was coded as 4. If economic, but not military, instruments were used, regardless of the use of propaganda or diplomatic instruments, STACRAFT was coded as 3. By the same token, STACRAFT was coded as 2 if any diplomatic instrument was the most costly policy in an event, and STACRAFT was coded as 1 if only a propaganda instrument was used without other types of instruments.

Two points should be made here about this method of aggregating the costs of the policies delivered in an event. First, this method is a rough estimate. It is possible to further compare the costs of individual policy items under the same type of statecraft. For example, the COPDAB classification into *military hostile actions, small scale military acts, limited war acts,* and *extensive war acts* presents an order from the least to the most costly use of force (Azar 1993). Here, however, I bypass a comparison of the costs among individual policy items.

Second, when multiple types of statecraft were used in an event, this method does not take into account the costs of secondary instruments. For example, a combined use of military and economic instruments is not differentiated from a combined use of military and diplomatic instruments. In both cases, STACRAFT is coded as 4. Some would argue that the former is more costly than the latter. This argument seems to hold water here. One might consider the use of the additive method to aggregate the costs, but with the use of the additive method, new problems arise. If one assumes that the distance (i.e., the differences in costs) between adjacent types of statecraft are the same, a combined use of diplomatic and propaganda instruments would score 3 (= 1 + 2), which is not different from the score for a use of economic instruments only (3). Another option would be to change the scales of four types of statecraft to, say, 1, 10, 100, and 1,000, assuming that the distance between adjacent types increases exponentially with the level of costs. As a matter of fact, this scaling option makes the proposed method of measuring STACRAFT more appealing because the impact of secondary instruments would become less appreciable. I have great reservations, however, about artificially manipulating the scales.

Although my method does not involve a more detailed comparison, it should suffice to yield an overall estimate of the costs in the action taken by the sender. The ordinal nature of STACRAFT generally holds, and this opens up the possibility of cost-benefit analysis of foreign policy behavior in the future.

3.3 TYPOLOGY OF ISSUES

In the process of developing an issue typology, I first adopted the nominal categories of the COPDAB project (Azar 1993) as an outline. The COPDAB classification of issues comprises seven main categories and one residual category. Next I derived subcategories under each main category, based upon the criteria of exhaustivity, exclusivity, recurrence, and distinctiveness, as discussed earlier. In the process of devising subcategories, I consulted various typologies in previous studies, from public opinion surveys to large-scale event projects. The final version of the issue typology is presented in the codebook in Appendix I. For notational purposes, I distinguish subcategories from other broad categories by calling them "issue items." In the resultant typology of issues, two variables—ISUTYPE1 and ISUTYPE2—are employed to denote the primary and secondary issue types of the COPDAB category system. Additionally, ISUITEM1 and ISUITEM2 are used to denote the primary and secondary issue items in an event. The distinction between the primary and secondary issues is designed to account for the presence of multiple issues in an event. I will delay a more detailed treatment of these variables until Chapter 6. Here I focus on the transformation of issue items into three issue-types based upon the level of value instillation.

As suggested by Mansbach and Vasquez (1981), the level of value instillation in issues mimics a spectrum that stretches between the substantive and transcendent issue-types. The symbolic issue-type lies somewhere in the middle of the spectrum. This three-fold classification contains an ordinal characteristic that can be utilized in analyzing foreign policy behavior. Moreover, I found that the classification of "substantive, symbolic, and transcendent" issue types corresponds to Hower and Taber's (1993, 5)

categorization of "negotiable, less negotiable, and virtually non-negotiable" issue-types in military disputes between nations. Transcendent issues, often concerning deep-rooted values in ideology, culture or religion, are the least negotiable among these three issue-types. By contrast, substantive issues are the most negotiable because they are frequently associated with goods and money that can be described and evaluated in terms of quantity. It stands to reason that these two concepts, the degree of negotiability and the level of value instillation, are consistent with each other. For easier notation, I assigned "low, medium, and high negotiability" to replace Hower and Taber's (1993) terminology. Accordingly, transcendent issues have low negotiability, symbolic issues medium negotiability, and substantive issues high negotiability. These terms will be used interchangeably in interpreting empirical results.

I will now describe the process of classifying individual issue items into three issue-types based upon the level of value instillation. The distinction between substantive, symbolic and transcendent issue-types is based upon the properties of the objects and stakes involved in issues. Substantive issues have identifiable objects that usually can be measured in economic or monetary terms. Symbolic issues involve some abstract value contentions beyond economic measures, even though the objects pertaining to the issues can be identified. When issues are concerned solely with abstract values, and thus their objects cannot be either measured or identified, they are regarded as transcendent (Mansbach and Vasquez 1981, 61-2; Li 1993).

Implicit in the arguments above is that two characteristics of issues—whether or not the object is identifiable, and whether or not the stake (value contention) is measurable—constitute a formula for distinguishing between substantive, symbolic and

transcendent issue types. As a result, a 2 × 2 table can be constructed, as shown in Table 3.1. Note that no issues can be classified in the upper-right box, because it is impossible to evaluate the stake when the object is not identifiable.

Table 3.2 reproduces Li's (1993, 366) grouping of individual issues under three linkage types. The classification of substantive and transcendent linkage types is quite straightforward. Here I focus the discussion on the classification of the symbolic linkage type. An example of this is the issue of "Control, utilization, or change of a piece of territory." Although the area and resources of the land in dispute can be estimated in monetary terms, the involvement of sentiments such as "national dignity or prestige" (p. 352) complicates the assessment of gain or loss. Therefore, it is appropriate to classify territorial disputes as the symbolic linkage type.

Similarly, one can classify individual issue items by asking two questions: (1) whether or not the object is identifiable, and (2) whether or not the stake is measurable, as shown in Table 3.3. The final results are summarized in Table 3.4.

TABLE 3.1 A Classification of Issue Types Based on the Object and Stake Involved

Stake	*Object*	
	Identifiable	Unidentifiable
Measurable	Substantive /High Negotiability	Null
Unmeasurable	Symbolic /Medium Negotiability	Transcendent /Low Negotiability

TABLE 3.2 A Coding Sheet of Linkage Types for Studying Economic Sanctions

1. Substantive Linkage
    a. expropriation claims
    b. the price of specific goods or materials
    c. the level of taxes
    d. the allocation of resources

2. Symbolic Linkage
    a. control, utilization, or change of a piece of territory (independence movement, passage rights)
    b. change of a particular member in the government (chief executive, prime minister or cabinet members)
    c. change of the buyer and/or seller of the weapon
    d. utilization of nuclear facilities, or intervening in testing of nuclear weapons
    e. delivery or relief of individuals (prisoners, hostages, or asylum seekers)
    f. withdrawal of troops
    g. cease-fire
    h. change or conclusion of a treaty
    i. investigation of affairs of mutual concern

3. Transcendent Linkage
    a. improvement of human rights
    b. prevention of communism
    c. realization of democracy or majority rule
    d. withdrawal of the support of terrorism
    e. end to unfriendly rhetoric and/or behavior

Source: Li (1993, 366).

TABLE 3.3 Classifying Individual Issue Items into Three Issue Types

Code	Description of Issue Items	Is the Object Identifiable?	Is the Stake Measurable?
101	Positive symbolic expression	Yes	No
102	Neutral symbolic expression	Yes	No
103	Negative symbolic expression	Yes	No
104	Mixed symbolic expression	Yes	No
201	Trade and tariffs	Yes	Yes
202	International commodities	Yes	Yes
203	Macroeconomic policy coordination	Yes	Yes
204	Financial transaction	Yes	Yes
205	Oil and energy	Yes	Yes
206	International debt crisis	Yes	Yes
207	Multinational firms	Yes	Yes
208	High-tech nonmilitary products/transfers	Yes	Yes
209	Industrial/technological cooperation	Yes	Yes
210	Intellectual property rights	Yes	Yes
211	Positive economic sanctions	Yes	Yes
212	Negative economic sanctions	Yes	Yes
213	Economic development	Yes	Yes
220	Overall economic relations	Yes	Yes
301	Arms control of nuclear weapons	Yes	No
302	Nonproliferation of nuclear weapons	Yes	No
303	Nuclear test ban	Yes	No
304	R & D and production of new weapons	Yes	No
305	Chemical/biological weapons	Yes	No
306	Nuclear cooperation	Yes	No
307	Conventional arms flows	Yes	No
311	Arms control in general	Yes	No
312	Arms race and buildup	Yes	No
313	Strategic tactics	Yes	No
314	Balance-of-power in Europe	Yes	No
315	Intelligence activities	Yes	No
316	Troop movements	Yes	No
321	Access to military facilities	Yes	No
322	Military aid	Yes	No
323	Military cooperation	Yes	No

TABLE 3.3 (cont'd)

Code	Description of Issue Items	Is the Object Identifiable?	Is the Stake Measurable?
324	Military alliance/Mutual defense treaty	Yes	No
325	Burden sharing of military alliance	Yes	No
326	Overall military relations	Yes	No
331	International war	Yes	No
332	Isolated military incidents	Yes	No
333	Invasion	Yes	No
334	Military involvement	Yes	No
336	Civil war	Yes	No
337	Military activities within a nation	Yes	No
339	Security alert	Yes	No
341	Conflict resolution	Yes	No
342	Peacekeeping	Yes	No
350	Regional stability	Yes	No
401	Communication agreements	Yes	No
402	Tourism pacts	Yes	No
403	Cultural exchange	Yes	No
404	Educational exchange	Yes	No
405	Scientific interactions	Yes	No
406	Joint surveys/explorations	Yes	No
410	Exchange in general	Yes	No
501	Natural resources	Yes	Yes
502	Climate change	Yes	Yes
503	Pollution control	Yes	Yes
504	Water management	Yes	Yes
505	Reforestation	Yes	Yes
506	Oceanic resources	Yes	Yes
601	Refugees	No	No
602	Population and immigration	Yes	Yes
603	Food problems	Yes	Yes
604	Human rights	No	No
605	Emergency relief for natural disasters	Yes	No
606	Delivery of individual relief	No	No
607	Human development	Yes	No
608	Existence of disease or epidemics	Yes	Yes

TABLE 3.3 (cont'd)

Code	Description of Issue Items	Is the Object Identifiable?	Is the Stake Measurable?
609	Disaster/accident caused by human errors	No	No
610	Labor protection	No	No
701	Diplomatic relations	Yes	No
705	War on drugs and crimes	Yes	No
706	Extradition	Yes	No
707	Illegal influence buying	No	No
708	Espionage or spying	No	No
711	Life/welfare of the sender's nationals	No	No
712	Antiforeigner bias	No	No
713	Terrorism	No	No
714	Deteriorating political order	No	No
715	Improving political order	No	No
718	Legitimacy of regime	Yes	No
719	Status in international organizations	Yes	No
721	Democratization	No	No
722	Censorship	No	No
723	Containment of communism	No	No
724	Free market economy	No	No
725	Sovereignty/nonintervention	No	No
726	Independence/self-determination	No	No
727	Occupied territories	Yes	No
728	Territorial disputes	Yes	No
729	Annexation	Yes	No
730	Disputes in open space	Yes	No
731	Unification	Yes	No
732	Economic integration	Yes	No
733	Free association	Yes	No
734	Disintegration	Yes	No
735	Establishment of peace	Yes	No
736	International law	Yes	No
737	International organization	Yes	No
740	Superpower summit	Yes	No
750	Fundamental changes in the system	Yes	No

TABLE 3.4 Classifying Individual Issue Items by Degree of Negotiability

Level of Value-Instillation /Negotiability	Issue Items
Substantive/High Negotiability	201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 220, 501, 502, 503, 504, 505, 506, 602, 603, 608
Symbolic/Medium Negotiability	101, 102, 103, 104, 301, 302, 303, 304, 305, 306, 307, 311, 312, 313, 314, 315, 316, 321, 322, 323, 324, 325, 326, 331, 332, 333, 334, 336, 337, 339, 341, 342, 350, 401, 402, 403, 404, 405, 406, 410, 605, 607, 701, 705, 706, 718, 719, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 740, 750
Transcendent/Low Negotiability	601, 604, 606, 609, 610, 707, 708, 711, 712, 713, 714, 715, 721, 722, 723, 724, 725, 726

Among a total of 101 issue items, the numbers of issue-types are as follows: 23 substantive, 60 symbolic, and 18 transcendent. All the issue items under the COPDAB categories of "Economic relations" and "Relations regarding physical environment or natural resources," as well as a few issue items concerning population, food, and disease control, are grouped under the substantive issue-type. The objects of these issue items are identifiable, and their stakes are measurable.

Furthermore, all the issue items under the COPDAB categories of "Symbolic/political relations," "Military/strategic relations," "Cultural/scientific relations," as well as a majority of issue items under "Political order/law/organization," are classified as symbolic. Here I concentrate on the transformation of issue items under the COPDAB category of "Military/strategic relations." Basically, this broad issue category can be divided into two subcategories: arms-related and conflict-related issues. Arms-related issues involves weapons of massive destruction, conventional arms flow, military cooperation, and so forth. The issue of arms sales is an example. Although one can identify the object, i.e., to increase a target's defense capability with a certain amount of arms, the implications of arms sales for the sender's basic security concern make this issue difficult to be evaluated purely on the basis of numbers. Conflict-related issues include international war, military incidents, civil war, military activities within a nation, cease-fires, and others. For instance, in the issue of civil war within a target nation, the object is identifiable in terms of the magnitude of fighting, but the loss of human life and the accompanying humanitarian concerns make the calculation of stakes much more difficult. According to this reasoning, I contend that all the issue items under the

COPDAB category "Military/strategic relations" should be classified under the symbolic issue-type.

Furthermore, as can be seen in the third level in Table 3.4, issue items such as human rights, terrorism, democratization, and the containment of communism, are classified as transcendent. These issue items often lead to a clash of highly abstract values ingrained in different ideologies, cultures, and religions. Neither the objects nor the stakes involved in these issues can be easily identified or measured. Therefore, they are of the transcendent issue-type, the least negotiable among the three issue types.

3.4 QUANTIFICATION OF POWER

The measurement of national power is a critical issue. One practical reason for this is that such measurement is an integral part of cross-national analysis. Another is that successful measurement can assure a more precise account of systemic concepts such as "polarity," "balance of power," and "power transition." The concept of national power is difficult to measure, however, for several reasons. First, there is a gap between potential and actual power. This gap results from intangible factors such as will, capacity, mastery, or skill, which are difficult to quantify. Second, as argued by Baldwin (1979), "power as money" is a misconception because power, especially in various political forms, is relatively low in fungibility. Third, it is not necessarily true that "more means better." For developing or poor nations, a large population is likely to be a burden rather than an advantage. Fourth, the proposition that "the bigger is equal to the more powerful" is questionable. The "paradox of unrealized power" highlights the

phenomenon that the weak powers can sometimes defeat or influence the strong (Baldwin 1979, 163).

Hart (1976) identifies three main approaches to the measurement of power in international relations: (1) control over resources, (2) control over actors, and (3) control over events and outcomes. He further argues that the third approach is superior to the other two approaches because of its advantages in explaining interdependence and collective action. Nevertheless, the third approach has its own predicaments in identifying and ranking decision makers' preferences.

This study follows the control-over-resources approach. The task of constructing an aggregate index for national power is concerned with two major issues: (1) the question of fungibility of power, and (2) whether the relationship between tangible and intangible components of power is additive or interactive. Some previous efforts to formulate power equations are listed in Table 3.5.

Power equations need not be complicated. Some studies present gross national product (GNP) as a good measure of national power, while others argue that energy consumption is a better overall measure (Organski and Kugler 1980, 247). Organski and Kugler suggest that the selection of power measures, whether or not they include intangible factors, should be evaluated primarily by their performance (p. 37). If two measures perform equally well, then criteria such as theoretical usefulness and the limitation of research resources should be considered.

TABLE 3.5 Power Equations of Previous Studies

Source	Power Equation

Singer and Small (1972)	$Power = \frac{(tpop + upop + sp + fc + mb + saf)}{6}$
	*tpop = total population; upop = urban population;
	sp = steel production; fc = fuel/coal production;
	mb = military budget; saf = military personnel

Cline (1994)	$Power = (C + E + M) \times (S + W)$ *C = critical mass (territory + population); E = economic strength; M = military strength S = strategic purpose; W = national will
Beckman (1984)	$Power = \frac{[steel + (pop \times pol_stab)]}{2}$ *steel = percentage of world steel production; pop = percentage of world population; pol_stab = score for political stability
Organski and Kugler (1980); Kugler and Domke (1986)	$Power = (GNP \times Tax\ Effort) + (Foreign\ Aid\ of\ \text{Re}ceipient)$ $*\ Tax\ Effort = \frac{\text{Re}al\ tax\ ratio}{Tax\ capacity}$
Alcock and Newcombe (1970)	$Power = Population \times (\frac{GNP}{Population}) = GNP$
German (1960)	$Power = N(L + P + I + M)$ *L = f_1 (territory, use of territory); P = f_2 (workforce, use of workforce); I = f_3 (resources, use of resources); M = 10(military personnel) in millions; N = 2 if nuclear armed, 1 if not
Fucks (1965)	$Power = \frac{(EP^{1/3}) + (SP^{1/3})}{2}$ *E = energy production; P = population; S = steel production

Note: This table does not include the details of the formulas. See Merritt and Zinnes (1989), and Taber (1989), for a full specification of some of the power equations listed above.

This study utilizes the concepts of size and modernization to represent the tangible and intangible factors of power. Size represents the resources in possession—the tangible components of power—while modernization reflects the capacity to effectively mobilize and utilize those resources—the intangible components of power. The advantage of focusing on these two attributes is that they are not volatile, but relatively stable characteristics of nations (Kean and McGowan 1973, 223). In measuring the size of a nation, this study adopts Cline's (1994) framework, which includes critical mass (territory and population), economic strength, and military strength. More specifically, a nation's GNP and military expenditures are used to represent its economic and military strength. In addition, in measuring the degree of modernization, this study employs energy consumption per capita.[32]

The results of Cline's (1994) power assessment are problematic, in part because his evaluation of intangible factors such as *strategic purpose* and *national will* relies heavily on subjective perception, and in part because his method of assigning weights to variables is too arbitrary to duplicate the outcome or obtain consistent results. Singer and Small's (1972) method, which is consistent and duplicable, is used here instead to aggregate individual components into a power index. The composite method is as follows:

[32] Besides energy consumption per capita, other proposed measures for modernization are telephones per capita, passenger cars per capita, newspaper circulation per thousand, and physicians per capita (Kean and McGowan 1973, 227).

(1) Use yearly aggregate statistics. Calculate the percentage share of the world sum for each variable item (except energy consumption per capita) for every country.

(2) For the additive components, assign a total score of 200 to critical mass (evenly divided for territory and population, i.e., a score of 100 for each), economic strength, and military strength. The assigning of 200 as a total score is for calculation convenience.

(3) In the interactive model, construct an index of capacity, which serves as a power multiplier, by subtracting individual nation's energy consumption per capita over the world average energy consumption per capita.

(4) Subtract the power score of the target nation over the power score of the sender (here, the United States) to generate a ratio index for relative capabilities.

More specifically, three measures for national power are formulated as:

Model 1: $Power = (\frac{Nation\ i's\ GNP}{World\ Total}) \times 200,$

Model 2: $Power = \frac{(Critical\ Mass + Economic\ Strength + Military\ Strength)}{3},$

$$Critical\ Mass = (\frac{i's\ POPU}{World\ Total}) \times 100 + (\frac{i's\ AREA}{World\ Total}) \times 100,$$

$$Economic\ Strength = (\frac{i's\ GNP}{World\ Total}) \times 200,$$

$$Military\ Strength = (\frac{i's\ ME}{World\ Total}) \times 200,$$

Model 3: $Power = Model\ 2 \times (\frac{i's\ ENGY}{World\ Average})$,

where GNP = Gross National Product, POPU = total population, AREA = total area, ME = military expenditures, and ENGY = energy consumption per capita.

The three power equations proposed above represent different ideas about measuring national power or relative capabilities. In Model 1, the GNP is considered to be a good measure of overall national power, while Model 2 takes into account the widely used tangible factors of national power. In Model 2, critical mass, economic strength, and military strength are equally weighted. Model 3 represents an interactive model of power measurement, where capacity is a multiplier to account for the realization of power. A comparison between three power equations will be conducted in Chapter 5, based upon their strategic implications and empirical performance. One of them is selected for hypothesis testing in the subsequent analyses.

CONCLUSION

In summary, I converted the theoretical hypotheses listed previously to testable hypotheses as follows:

Hypothesis T1. The sending nation tends to apply less costly policy instruments when the target nation has a higher power-ratio score.

Hypothesis T1'. The sending nation tends to apply more costly policy instruments when the target nation has a higher power-ratio score.

Hypothesis T2. The sending nation tends to apply more costly policy instruments when the issue involved in an event is more negotiable.

Hypothesis T2'. The sending nation tends to apply less costly policy instruments when the issue involved in an event is more negotiable.

In the social sciences, the distinction between theoretical and testable hypotheses is not always discernible. In fact, the description of "a target nation with a higher power-ratio score" in the testable hypotheses sounds awkward as compared to the description of "a more powerful target nation" in the theoretical hypotheses. For ease of later interpretation, I will use these descriptions interchangeably.

In the next chapter, I will set up a research design to undertake an event study. The event study is essential for data acquisition regarding the variables of foreign policy behavior and issue types. Chapter 5 will deal separately with the collection of aggregate governmental statistics to measure the three power equations.

CHAPTER FOUR

RESEARCH DESIGN

Empirical testing of the framework proposed earlier is limited to a one-country study focusing on U.S. foreign policy behavior.[33] Before proceeding with the research design, I will provide some justifications for confining this project to a single-nation study and for choosing the American case as a primary focus.

First, the search for a grand theory generalizable to all nations is unrealistic and unavailing. As Gerner points out, foreign policy practices resist the idea of generalizable knowledge (1992, 133). A proposition such as "all nations are likely to do something given certain situations," does not appear to be useful to foreign policy practitioners. For example, commentaries on current world affairs on TV or in newspapers are usually made within a rigorous historical context concerning bilateral or regional interactions. Focusing on local mechanisms, such as the policy orientations of a nation, or interactions between a few nations, is a more sensible approach to bridging the gap between research and practice.

Second, the case of the United States presents a relatively complete menu of foreign policy choices as compared to that of most other nations. For instance, the United

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[33] Raymond (1975, 41) makes a methodological distinction: "By comparing either several nations at one point in time (synchronic analysis), or one nation with itself at specific intervals over time (diachronic analysis), he [Professor Rosenau] contends that it is possible to test empirically the maxims and rules of thumb frequently voiced by observers of international affairs." Accordingly, in technical terms, this study constitutes a *diachronic analysis*.

States can, and in fact did, mobilize two carrier battle groups as a strong signal of its policy commitment to the status quo in the Taiwan Straits, amidst the large-scale military exercise instigated by China in March, 1996.[34] Not many nations are capable of doing that. According to a widely known survey conducted by Hufbauer et al. (1990a, 108), the United States was involved in two thirds of the cases where economic sanctions occurred. Therefore, in my investigation of the selection of statecraft, the American case will provide a relatively thorough picture. The importance of the American case is also self-evident from U.S. leadership in managing and advancing global agendas. The American case might have significant implications about how global problems are solved or how the world order is maintained.

Any attempt to obtain new empirical knowledge, however, may turn out to be either fruitful or futile. There are uncertainties about what exists that may be discovered through searching. Moreover, any research is limited to available resources. Taking both of these factors into account, I believe that an empirical testing of the American case will suffice, for the time being, to evaluate the utility of the framework proposed previously, and therefore to determine whether or not the same framework can be used to analyze any other nation's foreign policy behavior.

The final data set is made up of two segments: the relative capability scores and the coding results. Two subsets of data are then merged into one, using the *nonparallel matches* procedure in the *Statistical Package for the Social Sciences* (SPSS). The results of measuring national power and their interpretations will be discussed extensively in

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[34] For more details about this event, see Prager (1996, 36-40).

Chapter 5. In this chapter, I deal with the research design involving converting event records into the variables of interest. This project falls within the domain of event analysis. Because of its peculiar nature, I will provide an overview on event analysis in the end of this chapter.

4.1 DATA SOURCE

While searching for proper news sources for data acquisition, I found *Foreign Affairs Chronology* a valuable asset in summarizing major events. *Foreign Affairs Chronology*, as a distinctive feature in the journal *Foreign Affairs*, was started in 1978 and discontinued after 1994. The event records from 1978 to 1991 were not only published yearly in one of the volumes of *Foreign Affairs*, but were also published as a book, *Foreign Affairs Chronology. 1978-91* (Council on Foreign Relations 1992). The publications of the next few years are scattered. The event records of 1992 appear in a single volume of *Foreign Affairs* (1993, vol. 71, no. 5). The event records of 1993 are contained in *Agenda 1994: Critical Issues in Foreign Policy* (Council on Foreign Relations 1994); and the event records of 1994 are in *Agenda 1995: Critical Issues in Foreign Policy* (Council on Foreign Relations 1995).

Questions may be raised about my not using other news sources: daily newspapers in print (e.g., the *New York Times*, the *Wall Street Journal*), summary news collections (e.g., *Facts on File*, *Keesing's Contemporary Archives*, *Current History*), electronic news services (e.g., Nexis, Reuters), or the existing text files of major event data sets (e.g., COPDAB, WEIS, CREON). The use of daily newspapers, however, involves a tremendous amount of labor in collecting relevant news clips and converting

them into a text file, while the electronic news services demand substantial fees for individual users. The time and labor required and financial costs make these two news sources less appealing.

Moreover, summary news sources, despite their potential selection bias, are easy to use and available in the public libraries. In addition, students of international relations have the desire and need for new data sources. I therefore chose *Foreign Affairs Chronology* instead of other summary news sources that have already been employed elsewhere.

Existing text files of prominent event data sets appear to be highly attractive in terms of cost, they present potential problems as well. First, these major data sets are somewhat outdated, and do not meet the criterion of *recency* as well as *Foreign Affairs Chronology* does. Second, even if these prominent event projects are continuously updated, they are not always available.

A comparison between three major event data sets (CREON, WEIS, and COPDAB) and this project is presented in Table 4.1. Direct application of the data contained in those event studies would be ideal, but the frameworks of those event studies, intended for specific research questions by different investigators, are incapable of answering my central research questions, and thus do not fit the purpose of this study.

TABLE 4.1 A Comparison between Three Major Event Data Sets and This Project

Content	CREON	WEIS	COPDAB	FAC
Structure				
Time Frame	1959-68	1966-77	1948-78	1978-94
Number of countries	35	170	135	164
Number of sources	1	1	71	4
Variable				
Time/Date	Yes	Yes	Yes	Yes
Actor/Sender	Yes	Yes	Yes	Yes (U.S. only)
Target	Yes	Yes	Yes	Yes
Identification of news sources	Yes (indirectly)	No	Yes	No
Outcome	Yes (resources, affect, etc.)	Yes (22 classes or 63 items)	Yes (a group of single-word items)	Yes (statecraft, affect, etc.)
Single aggregate index	No	No	Yes (cooperation/ conflict, 1-15)	Yes (cooperation/ conflict, -4 to 4)
Issues/Problems	Yes (66 items of specific problems)	Yes (25 items in geographical/ issue area)	Yes (8 broad issue types, and various issue areas)	Yes (3 types of negotiability, and 8 issue types as in COPDAB)
Internal process	Yes	No	No	No

Note: CREON relies on *Deadline Data on World Affairs*, which covers 46 sources; WEIS uses only the daily *New York Times*; COPDAB uses as many as 71 news sources; and *Foreign Affairs Chronology* (abbreviated as FAC) uses *New York Times*, *Facts on File* , *Wall Street Journal*, and *Current History*.

4.2 SAMPLING CRITERIA

The selection of events from *Foreign Affairs Chronology* was a two-stage process. In the first stage, all the U.S.-related events with foreign references and events concerning regional groups or international organizations (e.g., the European Community (EC), the North Atlantic Treaty Organization (NATO), the United Nations (UN), or the affiliates of the UN), were singled out from the records. At this point, I was not certain about the exact scope of this project; I did not know whether or not to include actors beyond the level of nation-state as the targets of U.S. foreign policy behavior, or to further investigate events in which the United States was the target. Moreover, I was not certain about some classifications such as whether or not all NATO's acts toward the Soviet Union should be treated as part of U.S. foreign policy toward the Soviet Union, and whether or not the U.S. votes in the UN Security Council (UNSC) should be viewed as part of the American foreign policy behavior toward other UNSC members. In this preliminary selection process, I was inclined to include as many potentially valid cases as possible. For instance, to eliminate the chance of leaving out any U.S.-related events, I read through the text records and searched for key words such as "U.S.," "American," "Washington," or any names, agencies, or places associated with the United States.

It became clear later that a focus on U.S. foreign policy behavior toward other nation-states would better serve this project. In the second stage, I included the variable NONCASE in the classifying scheme to establish criteria for the qualifications of a valid case. The sampling criteria applied were the following: (1) the sender was the United States, with or without collaborative efforts from other nations; (2) the target was a nation-state, not a group of nations, or nonstate actors such as international

governmental/non-governmental organizations, multinational firms, or individuals; and (3) there were no more than seven targets in events involving multiple targets. Note that in the second criterion, the EC is an exception because its increasing importance as an entity in the international arena.

Additionally, for certain events to qualify as valid cases, the agencies or individuals involved had to be representative of authoritative actions of a nation-state. To qualify as a case, an event had to reveal foreign reference, i.e., the action involved, verbal or physical, had to be directed toward external targets beyond territorial boundaries. I will explain more about the variable NONCASE later. I will now address some practical problems that are germane to the fundamental question: "What is an event?"

Once the event records were selected from *Foreign Affairs Chronology*, they were typed, sorted in an ascending order by dates, and stored in a text-file format. At the end of each event entry, I included page numbers to facilitate tracing of the original sources. I sometimes also added essential information within brackets at the end of event entries. These critical pieces of information are contained in *Foreign Affairs Chronology* or have become common knowledge among those who study contemporary history. I did not seek extra references to validate every event entry with insufficient or ambiguous information. In the following examples, without the extra information in the brackets, it would be difficult for the coder to identify the target or the issue of the event:

> 790607 New US Ambassador Lawrence A. Pezzullo sworn in (p. 61). [Pezzullo = US Ambassador to Nicaragua]
>
> 820406 US Secretary of State Alexander M. Haig, Jr. meets separately in Washington with Argentine and British ambassadors (p. 152). [The Falkland Islands War]

After sorting out the event entries, I found an obvious change of editing styles in *Foreign Affairs Chronology* over the 17-year period. Over time, the length of event entries increases considerably. Before January 1987, the majority of event entries are no more than three lines. After that, there were more and more entries consisting of more than five lines, and occasionally more than half a page. Table 4.2 presents a contrast between short and long event entries. The question concerning the long event entries is whether or not they should be separated into several smaller events with different dates. I do not have definite answers to this thorny question. I observed, for example, that the Letelier incident occurring in 1976 continued to effect U.S.-Chile relations until 1981. (Seven pertinent event records appearing in *Foreign Affairs Chronology* are listed in Table 4.3.) Moreover, one can raise the opposite question: Should several events be combined into a single event that continued over years? I do not have definite answers to this pressing question either. These two questions point to the fundamental problems in dealing with events collected from daily newspapers or summary news sources.

The difficulty of pinpointing the start or termination of an event cannot always be avoided. To deal with this problem, I accepted the definition of an event, implicit in the compiling process of *Foreign Affairs Chronology*, that every entry of a news record constitutes an event. Throughout this project, I maintained the integrity of every event entry in *Foreign Affairs Chronology*. That is, in principle, I left unchanged the original form of an event record. A major advantage of doing so is the consistency of event counts when different investigators go through the selection process.

TABLE 4.2 Contrast between Short and Long Entries in *Foreign Affairs Chronology*

(a) Examples of short event entries:

790315 US and Britain sign treaty on double taxation (p. 29).

790624 -0627 Carter visits Japan (p. 28).

(b) An example of long event entries:

891215 Panama's national Assembly votes unanimously to name Gen. Noriega "maximum leader," declaring Panama to be in "state of war" with US. Off-duty US soldier, Lieut. Robert Paz Fitcher, is killed in Panama City 12/16 after he and 3 other US soldiers are stopped by Panamanian soldiers. US soldier and his wife also stopped are interrogated and assaulted; US troops in Panama are mobilized. President Bush 12/18 expresses "enormous outrage" at killing of US soldier. US officer in Panama City 12/18 shoots and wounds uniformed Panamanian. Shortly after midnight 12/20, Panamanian judge at US base in Panama swears in opposition presidential candidate Endara, apparent winner of voided 5/7 elections, along with vice presidential candidates Calderon and Ford; 11,000 troops from US, joining 13,000 already based in Panama, strike Panama City and other targets shortly afterward. US forces seize power stations, airfields and headquarters of PDF. President Bush makes speech saying US acted to protect Americans in Panama and Washington's rights under Panama Canal Treaties; announces Gen. Noriega has eluded capture. 5 Americans are abducted by Panamanian forces from marine research station and released 12/21; another group of Americans is held captive in Panama City's Marriott Hotel until rescued 12/20 by US troops. US journalist, Jonathan Meyersohn, is held hostage until released 12/24. US troops attempt to establish control of Panama City 12/21 amid widespread looting and resistance by Noriega's "dignity battalions." 2,000 additional US troops are dispatched 12/22 to Panama City to restore order; Vice President Calderon narrowly escapes assassination attempt. OAS, meeting in Washington 12/22, votes 20-1 to deplore US strike against Panama. New government of Panama announces 12/23 that it has disbanded Panamanian Army and will replace it with modest public security force. US reports 24 American soldiers and 139 Panamanian soldiers killed as of 12/23. Noriega 12/24 takes refuge at residence of Monsignor Jose Sebastian Laboa, papal nuncio to Panama; requests political asylum; US forces quickly surround residence. US 12/25 demands Noriega be surrendered; Vatican spokesman announces 12/27 that Holy See is not inclined to surrender Noriega to US; Vatican announces 12/29 that Noriega is being asked to leave of own free will. US troops 12/29 search home of Nicaraguan ambassador to Panama for weapons. Managua government 12/30 orders 20 US diplomats to leave Nicaragua within 72 hours; US expresses regrets to Sandinista Government (p. 404).

Source: Council on Foreign Relations (1992).

TABLE 4.3 Lingering Effect of the Letelier Murder on U.S.-Chile Relations

780408 Chile deports Michael V. Townley, suspect in 1976 Letelier assassination, to US. He is formally charged with conspiracy Apr. 26, and pleads guilty on Aug. 11 (p. 24).

790511 Michael V. Townley sentenced up to ten years for Letelier murder; Chilean judge on May 14 rejects US request to extradite former intelligence director Gen. Juan Manuel Contreras Sepulveda and two aides; US recalls Ambassador George W. Landau May 15 (p. 59).

791001 Chilean Supreme Court unanimously rejects extradition of Sepulveda and two aides; on Oct. 2 State Department deplores refusal to extradite "terrorists," recalls Landau (p. 59).

791129 US cuts back diplomatic, military, and economic relations over Chilean Oct. 1 extradition refusal, calling it "an act of international terrorism" (p. 59).

800915 US Court of Appeals upsets conviction of three in Letelier slaying (p. 90).

810220 President Ronald Reagan lifts 11/79 ban on exports to Chile imposed after refusal to extradite 3 suspects in 9/21/76 murder of former Chile diplomat Orlando Letelier (p. 124).

810530 US District Court overturns previous findings, acquits 2 found guilty in Letelier murder (p. 124).

Source: Council on Foreign Relations (1992).

TABLE 4.4 Layout of Coding Sheet

(Insert an event entry here.)

CODING SHEET NONCASE: _ , ·: _____

1. DATE: _ _ / _ _ / _ _ as YY/MM/DD

2. ACTOR: _ _ _ 3. TARGET: _ _ _

4. PROPAGAN: _ 5. PROPITEM: _ _ _

6. DIPLOMAC: _ 7. DIPLITEM: _ _ _

8. ECONOMIC: _ 9. ECONITEM: _ _ _

10. MILITARY: _ 11. MILIITEM: _ _ _

12. ISUTYPE1: _ 13. ISUITEM1: _ _ _

If ISUTYPE1 = 9, then specify:_____

If ISUITEM1 = "Others",
then specify:_____

14. ISUTYPE2: _ 15. ISUITEM2: _ _ _

If ISUTYPE2 = 9, then specify:_____

If ISUITEM2 = "Others",
then specify:_____

If more than two issue types involved,
then specify:_____

16. MULTAR: _ 17. LOCATION: _ _ 18. GESTURE: _

There were, however, two exceptions that required breaking down an entry to several cases or combining several entries into one case. First, a certain number of events appeared more than once in different locations in *Foreign Affairs Chronology*. Below is an example:

> 780106 Carter, visiting Brussels, promises closer association of NATO with SALT negotiations (p. 7).
>
> 780106 President Carter visits Belgium (p. 2).

For redundant reporting as in these two entries, I simply combined the entries and considered them as one event.

Second, when multiple targets were in one event entry, I divided the event into the corresponding number of dyadic events. In the following example, there are three targets:

> 890525 In first use of "Super 301" provision of 1988 Omnibus Trade and Competitiveness Act, President Bush names Japan, Brazil and India as nations engaging in unfair trade practices... (p. 370).

This event entry was divided into three cases, including the U.S. → Japan, U.S. → Brazil, and U.S. → India.

4.3 CODING PROCEDURE

After having established rules for combining several entries into a case or dividing an event entry into several cases, I then moved on to the preparation of coding sheets. The layout of the intended variables (i.e., a variables template), as shown in Table 4.4, is attached to each event entry to produce, typically, one-page coding sheets for the

subsequent procedure. Then the coder began the coding tasks case-by-case, based upon the codebook in Appendix I and the coder's instruction manual in Appendix II. During the process, the repeated entries were combined as one entry, while the entries involving multiple targets were stapled with additional blank coding sheets. When the coding was complete, the numbers were entered into a computer to form a data file. Afterwards, a few runs of simple analyses, such as frequency distribution and crosstabulation, were required to correct coding or punching errors or to deal with missing values.

Some matters concerning the variables template and the codebook designed for this project should be clarified. First, there are twenty-one variables in the coding sheet. The variable NONCASE is used for distinguishing between valid and invalid cases. The basic components of an event are YEAR, MONTH, DAY (abbreviated as YY/MM/DD), ACTOR, and TARGET. In the middle of the coding sheet are the variables concerning foreign policy behavior and issues, which resulted from the measurement process in Chapter 3. At the bottom of the coding sheet are debuts of a few variables, such as MULTAR, LOCATION, and GESTURE. Definitions, descriptions, and categories of all these variables can be found in the codebook in Appendix I or in Chapter 6. Some of these variables can be transformed into new variables. Again, related issues about the transformed variables will be taken up in Chapter 6.

Second, the design of the basic variables related to foreign policy behavior or issues imitates the feature of the *sequential action scheme* adopted in the CREON project (Hermann et al. 1973, 44-5). This feature helps the coder to make a series of choices in a logical order to identify a single item among a great number of categories. For instance, the coder in this project was supposed to identify the presence of any four types of

statecraft, and then to zero in on the individual policy item applied. This feature is not only helpful in the coding process, but also useful in detecting coding or punching errors. For example, in Table 4.4, an absence of the propaganda type of statecraft, i.e., coded as "0" in PROPAGAN, should result in a missing value of individual propaganda items, i.e., coded as "199" in PROPITEM. Whenever an inconsistency is spotted, one knows that something went wrong in the coding or punching process.

Third, I have made an effort to establish a logical correspondence between the variables of individual foreign policy items (i.e., PROPITEM, DIPLITEM, ECONITEM, and MILIITEM) and the variable of overall expression toward the target (GESTURE). As shown in the codebook in Appendix I, individual foreign policy items are grouped under the subheadings *positive*, *neutral*, and *negative*. Specific rules regarding the coding of these variables are listed in the coder's instruction manual in Appendix II. Like the sequential coding scheme, the logical correspondence between variables is helpful for either the coding or data-managing process.

The acquisition of event data follows the basic notions of content analysis.[35] Researchers need to design coding schemes and implement coding tasks. Weber (1990, 21-4) classifies the procedure of creating and testing a coding scheme into several steps: (1) *define the recording units*, (2) *define the categories*, (3) *test coding on sample of text*, (4) *assess accuracy or reliability*, (5) *revise the coding rules*, (6) *return to step 3*, (7) *code all the text*, and (8) *assess achieved reliability or accuracy*.

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[35] For an introduction to content analysis, see Holsti (1969), Krippendorff (1980), North et al. (1963), and Weber (1990).

TABLE 4.5 The Criteria of Case Qualification

Variable Name = NONCASE

Value	Description	N (%)
1	The event is a case: conditions for a case are (1) the sender is the United States, (2) the target is another nation-state, with the exception of the EC, and (3) there are no more than 7 targets if multiple targets are present.	3,689 (73.6)
Example: 800715 US-British accord reached on $12-billion sale to Britain of Trident I missiles (p. 68).		
2	The sender is not the United States.	332 (6.6)
Example: 811210 Greek Prime Minister Andreas Papandreou announces curbs on NATO role (p. 103).		
3	The target is the United States and the sender is another nation-state.	539 (10.8)
Example: 811222 Brezhnev, responding to 12/4 NBC-TV questions, says summit meeting with Reagan is best way to revive contacts (p. 103).		
4	The target is not a nation-state but the UN, its affiliates (UNESCO, IMF, ICJ, etc.), the NATO, or other regional blocs or organizations.	62 (1.2)
Example: 851007 State Department announces end to US policy of automatic compliance with International Court of Justice decisions, saying court's decisions had been "abused for political ends" (p. 219).		
5	More than 7 targets are involved.	25 (.5)
Example: 900409 Representatives of 42 industrial nations including US, meeting in Paris, agree to create special bank to aid East European economies, to be called European Bank for Reconstruction and Development. Bank is formally established 5/29 in Paris (p. 430).		
6	The event is domestic. In principle it is concerned with policy debates or policymaking process, despite showing external reference to some extent.	97 (1.9)
Example: 840301 Secretary of State Shultz, in Senate testimony, blames Congress for undercutting US peacekeeping efforts in Beirut (p. 196).		
7	The event is an indirect case. It implies "U.S. action" but secondary in the context.	71 (1.4)
Example: 791215 ROK military sources report private US protest over Chon's use of troops under US-ROK joint military command (p. 50).		
8	The event is ambiguous; there is not enough information.	199 (4.0)
Example: 821111 Reagan contends at press conference that "foreign agents" have helped "instigate" the US nuclear freeze movement (p. 136).		
9	Missing	0
	Total =	5,014

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The codebook of this project in the earliest stage was smaller and less inclusive. It was revised several times and evolved into the codebook in Appendix I. Most noticeably, the category "Others" was utilized when I was unable to code certain events, including the following:

> 840811 Reagan, testing microphone before radio broadcast, jokes about bombing USSR; USSR, other nations sharply criticize action (p. 194).

This event was coded "Others" in the variable of PROPITEM earlier on. Owing to this single event, however, a propaganda policy item "Joke; mock; ridicule" was added to the categories of PROPITEM. This emphasizes the difficulty of creating a coding scheme, a task that often requires flexibility to account for the unexpected.

The variable NONCASE is used to winnow out unqualified cases. As shown in the coding sheet in Table 4.4, the coding procedure stops if the NONCASE variable receives a value other than 1. The other values range from 2 to 9. Table 4.5 shows the frequency distribution of NONCASE. Examples of events are provided under each category. The whole data set contains 5,014 observations, but only 3,689 among them (= 73.6%) qualify as valid cases. As revealed in Table 4.5, the largest group of unqualified observations belongs to the category "The target is the United States, and the sender is another nation-state" (N = 539; 10.8%). It should be noted that the frequency of this category is greatly underestimated because many of the valid cases also contain other nations' foreign policy behavior toward the United States, but they are not counted here. The total number of valid cases may be increased by adopting a less strict rule to include the category "Indirect case" (N = 71; 1.4%), or by adding extra information to the events

under the category "Ambiguous; not enough information" (N = 199; 4.0%). I doubt, however, that such a small percentage of additions would have a great impact on the statistical conclusions in the subsequent analysis. In the next section, I will briefly discuss event analysis.

4.4 AN OVERVIEW OF EVENT ANALYSIS

Broadly, foreign policy analysis can be divided into qualitative and quantitative approaches. The qualitative approach often involves single-case studies or those with a small number of cases and focuses on detailed, rigorous documentation of individual policy events in a historical or area-study context.[36]

In contrast, the quantitative approach involves studies using a large number of cases and employs the collection of historical cases or event data. The quantitative approach has advantages over the qualitative approach in data manipulation and statistical analysis. Since this project uses event data, the discussion here will be confined to *event analysis*.[37]

Why use events as a research focus in the quantitative approach? The logic is obvious. Given that foreign policy analysis is concerned with the fundamental question

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[36] For the overarching issues of defining *a case*, see Ragin and Becker (1992). The methods of small-number-case comparison are discussed in Achen and Snidal (1989), Eckstein (1975), George (1979b), George and McKeown (1985), and Yin (1994).

[37] A collection of early pioneering efforts in events research can be found in Azar and Ben-Dak (1975), Azar et al. (1972), Burgess and Lawton (1972), Kegley et al. (1975), and Munton (1978). Peterson (1975) surveys event studies in the 1960s and early 1970s. A recent list of references includes Andriole and Hopple (1984), *International Studies Quarterly* (1983), Laurance (1990), and Schrodt (1995). Gerner et al. (1994), and Merritt et al. (1993) place emphasis on the machine-coding approach to event data.

"Who did what to whom?", foreign policy behavior or action becomes "the tangible artifact" of foreign policy (Hudson 1994, 286). Foreign policy analysis is intended to infer foreign policy choices, the unobservable, from foreign policy behavior, the observable. According to this reasoning, foreign policy events which contain a variety of foreign policy actions become a natural source for research.[38]

Kegley and Skinner (1976) make a distinction between three basic formats in defining foreign policy behavior for analytical purposes: *monad*, *directed dyad*, and *summed dyad*. The monad format aggregates the output of a nation's behavior over a period of time, without identifying the recipients of those external behaviors. In the monad format, foreign policy behavior is characterized as what a nation does to all other actors in the international system.

In contrast, the dyad approach differentiates and identifies the targets of a nation's actions, and thus places emphasis on the bilateral relations between nations. The summed dyad format has a stricter set of assumptions than the directed dyad format. In the summed dyad fashion, the researchers ignore the ordering arrangement of sender-target, by assuming that the interactions between two nations are reciprocal and symmetrical. Kegley and Skinner elaborate on these two assumptions:

> The summed dyad fails to specify the direction of behavior transpiring between dyadic partners, and consequently carries with it the assumptions (1) that behavior initiated to a foreign target will be reciprocated (behavior sent will be responded

[38] As opposed to the event unit, alternative basic units for quantitative foreign policy analysis could be votes in UNSC or other international organizations, thematic coding of the verbal behavior of policymakers, transactional flows recording physical behavior between nations (e.g., trade volume, the number of tourists), and others (Hermann 1971, 298-300). These alternative units are not as comprehensive as the event unit in representing foreign policy behavior.

to), and (2) that such behavior will be returned in kind (i.e., symmetrical) (1976, 310).

These assumptions are much too unrealistic when one considers what is really happening in the interactions between nations. The summed dyad approach is less appealing in light of this drawback.

The directed (or directional) dyad format basically follows the who-did-what-to-whom structure. It is apparent that the directed dyad format focuses on the *microlevel* of foreign policy behavior. It is always the case that information about this level can be aggregated into information about the *macrolevel* of behavior, but not the converse. In this study, our research design follows the directed dyad format.

In principle, events research has several problems, which will be discussed below. The first problem concerns the temporal or spatial boundaries of an event. These boundaries can be defined strictly or loosely, in a temporal or spatial context. Consequently, an international incident, such as the Noriega episode on December 15, 1989 (see Table 4.2), may be coded as a single event or multiple events. Professor William H. Riker takes a serious look at the methodological issues concerning discrete events:

> [A]lthough reality is continuous, human perception is not. ... Faced with the complexity of continuous reality, humans understand it by breaking it up into pieces. Although a continuous reality cannot, by definition, consist of discrete motions and actions, we imagine starts and stops. What lies between the starts and stops we call events. Events are motion and action separated out of the continuous reality by the verbal imposition of boundaries. So accustomed are we to separating out events by verbal processes that we often lose sight of the subjective character of the separation (1957, 58-9).

This subjective nature of imposing boundaries on an event, especially a complicated or ambiguous one, lies at the heart of event analysis. At best, Azar (1975, 1) suggests that the coding structure of an event contains components such as *sender, target, time period, activity,* and *issue*. Hermann (1971) conducts a conceptual analysis of what *a foreign policy event* is all about, and provides some practical guidelines for coding events. Despite these efforts, the fundamental question "What is an event?" is still unanswered. As a result, the problems of dividing a long event entry in news summary sources or of combining several short event entries in daily newspapers are left unresolved.

Second, events research relies on various news sources, and source biases are always present to some extent. It is obvious that the more important an event, the more likely it is to be reported. Journalists, historians, and researchers of event data, however, may not have similar views on what constitutes a "newsworthy" event. Even among journalists or the same type of news media, we can observe some discernible differences in dealing with the salience of various types of events. It is widely acknowledged that events such as scientific, educational, and cultural exchanges are often underreported. Moreover, news sources franchised in different nations might have very different tones (friendly/hostile) in reporting certain events. Previous studies have indicated a low level of overlap between various news sources (Schrodt 1995, 161). A quite extensive list of early empirical efforts in comparing news sources can be found in Munton (1978, 340-5).

Third, various coding systems may reflect different theoretical questions. For example, WEIS shows strength in describing the verbal behavior of nations or diplomatic interactions, but weakness in providing a fuller menu of the economic or military policy instruments used by nations. Users of event data sets should be aware of the underlying

theoretical questions, the resultant structures of coding schemes, and thus the problems of commensurability between event studies. Discussions of the comparability between WEIS and COPDAB can be found in Goldstein (1992) and in *International Studies Quarterly* (1983).

Last, the statistical methods of the social sciences do not meet the needs of event data. Very few advanced techniques, such as event history analysis (Allison 1984), vector autoregression (Goldstein and Freeman 1990), and Poisson regression (King 1989b), have been linked to event studies in recent years. Achen (1987) and Schrodt (1994) place emphasis on statistical corrections for event analysis, based upon the peculiar nature of event data.

CONCLUSION

The American case can and will serve as a litmus test for the usefulness of the framework I proposed for this study. The codebook in Appendix I and the coder's instruction manual in Appendix II were devised to carry out this task. In particular, the structure of the coding sheet in Table 4.4 takes into account the fact that a foreign policy event may involve multiple targets, issues or instruments. It is my contention that the fundamental problems of event analysis reside in the disputes over the definition of an event. To clarify the legitimacy of event analysis, students of international relations should engage in a healthy debate over the basic concept of "an event."

CHAPTER FIVE

RESULTS I: A SKETCH OF NATIONAL POWER

Power is a fascinating, yet elusive, concept in the study of international relations as well as in other social sciences. For centuries, scholars have been wrestling with its conceptualization and measurement. Theory and data are often regarded as separate, but this is not necessarily true. Sometimes theoretical advances come to a halt for want of empirical inspiration. At other times, data construction is hampered for lack of theoretical guidance. In this chapter, I will adopt a hands-on approach to measuring national power. Three power equations proposed earlier will be put to the test to determine their theoretical import and real-world implications. In due course, various issues regarding data sources and missing values will be dealt with as well. It is my hope that such endeavors can and will contribute to future studies on national power, both theoretically and empirically.

5.1 THE PROBLEM OF MISSING VALUES

The entities for analysis are nation-states with the exceptions of the EC, semisovereign states such as Taiwan, the West Bank (the Palestine Liberation Organization or PLO) and Hong Kong, and territories under UN trusteeship such as Palau, the Marshall Islands, Northern Mariana and Micronesia. These entities have a

unique place and varying degrees of importance in the arena of international affairs.[39] The targeted data cover the period from 1977 to 1993. The three data sources are (1) *World Military Expenditures and Arms Transfers* (*WMEAT*) by the U.S. Arms Control and Disarmament Agency for the variables of POPU, GNP and ME; (2) *Energy Statistics Yearbook* (*ESY*) by the UN Department of International Economic and Social Affairs for the ENGY variable; and (3) *The World Factbook* (*WF*) by the Central Intelligence Agency for the AREA variable. The units of measurement are squared kilometers for area (AREA), one million persons for population (POPU), one million U.S. dollars (1990 constant) for gross national product (GNP) and military expenditures (ME), and kilograms of coal equivalent per capita for energy consumption per capita (ENGY).[40]

It is important to understand the structure and sources of missing values in individual power measures. First, after merging two key segments of information, one from events coding and the other from power measures, into a preliminary data set, I

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[39] These entities are included because of their frequent appearances in the U.S.-related event records extracted from *Foreign Affairs Chronology*. For example, in a total of 3,689 valid cases, the PLO is involved in 37 cases, Taiwan in 40, and the EC in 39. The basic criterion for inclusion is relevance to U.S. foreign policy behavior. Overall, the list of political entities included in this project (see Appendix I) is comprehensive for the period of 1980s and early 1990s.

[40] For the sake of comparison, all data involving monetary units were converted into U.S. dollars (1990 constant). The U.S. GNP deflator index can be found in the section of "Statistical Notes" in *WMEAT*. The applied numbers of the U.S. GNP deflator index are as follows: 1995 = 114.93, 1994 = 112.11, 1993 = 109.05, 1992 = 106.73, 1991 = 103.84, 1990 = 100, 1989 = 95.85, 1988 = 91.70, 1987 = 88.31, 1986 = 85.51, 1985 = 83.27, 1984 = 80.86, 1983 = 77.95, 1982 = 75.05, 1981 = 70.52, 1980 = 64.33, 1979 = 58.96, 1978 = 54.20, 1977 = 50.50, 1976 = 47.75, 1975 = 45.44, 1974 = 41.47, 1973 = 37.89, 1972 = 35.84, 1971 = 34.42, 1970 = 32.75. As an example of a calculation using this index, a pair of airline tickets that cost $500 in 1983 [in 1983 current U.S. dollars] would cost $641 in 1990 [= 500/.7795, in 1990 constant U.S. dollars].

obtained a total of 3,689 valid cases.[41] There were no missing values emanating from the segment of events coding; therefore, all the missing values were caused by individual power measures. The aggregate power indices resulting from Model 1, Model 2, and Model 3 each had a great number of missing values, at times more than 400. In the subsequent discussion, I will focus on the missing-value problem of Model 2. In the power scores of Model 2, there were 444 missing values. In other words, at least one of the four elements (AREA, POPU, ME, and GNP) were missing in 444 cases. These cases with missing values involved significant nation-state actors in U.S. foreign policy, such as Commonwealth of Independent States (a total of 57 cases, in which Russia accounted for 19 cases, Ukraine for 12 cases, etc.), the breakaway republics of Yugoslavia (28 cases), Cambodia (21 cases), Vietnam (49 cases), Nicaragua (19 cases), Cuba (11 cases), Iraq, Haiti, Grenada (9 cases each), and so forth. Given that so many prominent actors were involved, the problem of missing values, if ignored, may pose serious difficulties in attempting to reach a valid statistical conclusion.

Second, the missing-value problem varied with individual power measures. There were no missing values in the area variable, and only a few in the population variable. As to the estimates of energy consumption per capita, entities such as Taiwan that are not UN members were not included. The problems of missing values were present in the estimates of GNP, and particularly in the estimates of military expenditures.

Third, the missing-value problem could have been caused by time discrepancy. This was largely associated with the newly formed nation-states. On the one hand, my

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[41] By using the "Match Files" commands in the SPSS for Windows, I performed *nonparallel matches* to merge two subsets of data with different matrix formats.

analytic framework assumes a one-year lag with regard to the relative capability index (i.e., the U.S. policymakers consider the previous year's, rather than the present year's, relative capability concerning the target nation when making their foreign policy decisions). Consequently, after the data merging procedure, newly formed nation-states lacked data for individual power measures in their first or second year. On the other hand, different data sources provided different time lines with respect to the existence of those new nation-states. For example, the first entry of the united Yemen is in 1990 in *WMEAT*, while it appears in 1991 in *WF* and *ESY*.

The possible solutions to the missing-value problem were (1) to seek available numbers in different sources, and (2) to conduct permutations using the data at hand. I will demonstrate in the next section that the state of aggregate data collected by different agencies was not satisfactory and therefore the first approach was highly problematic. In contrast, in spite of some uncertainties, the mean-value substitution was less costly, and the potential bias was not as large as it may seem to have been. Since the military-expenditure variable has more missing values than the others, the following discussion will focus on the estimates of military expenditures.[42]

5.1.1 The Use of Different Sources

Besides *WMEAT*, the other two authentic sources for military expenditures around the world are *The Military Balance* (*MB*) by The International Institute for Strategic

[42] In the variable energy consumption per capita, there were several cases, including that of Taiwan, where the whole series was missing. The average scores of Hong Kong and South Korea series were used because both entities resemble Taiwan in economic development and degree of modernization.

Studies and *SIPRI Yearbook: World Armaments and Disarmament* (*SIPRI*) by Stockholm International Peace Research Institute. Without the publications of these agencies, a cross-national analysis applying military expenditures would be impossible. A comparison of these three sources, however, revealed some shortcomings, seen in other sources of aggregate data as well, that undermined the expected performance of data, quality and quantity alike.

First, some inconsistencies were found within the same source. This often occurs when estimates of multiple years are presented. For instance, the estimate of a nation's military expenditures for 1988 in the 1989 yearbook may be different from the one in the 1990 or 1991 yearbook after applying monetary conversion. Although the data-collection agency often claims that the newest data is more correct, such inconsistencies still generate confusions.

Second, unlike *WMEAT*, *MB* and *SIPRI* do not provide their methods and relevant deflator index for monetary conversion. This leads to difficulties when the issue of monetary conversion comes to the fore. Third, *MB* has a lapse in the 1994-1995 yearbook in its most important feature—the table of "comparisons of military expenditure and military manpower." *SIPRI* has for some years failed to put numbers of the USSR and China in its summary table of world military expenditures.

The utility of aggregate data from these sources is greatly compromised because of internal inconsistencies, ambiguities in monetary conversion, and failure to deliver complete or crucial information. These shortcomings cause tremendous problems in a comprehensive cross-national analysis involving military expenditures. More often than not, the individual researcher has to confront the pressing and knotty problems of

deficient or missing data. When there is not much that can be done to solve the missing-value problem, either a great amount of information is lost, or the flawed data source is abandoned. The diversity of data sources is conducive to the development of empirical testing in international relations. But if these agencies are not held to a higher standard, the quality and quantity of data such as military expenditures will always be in question.

One possible remedy to the problem of missing values is to substitute estimates available in other sources by proper monetary conversion. The problem with this method is that the missing data may not in fact be available at all in other sources and there is no established method for "proper" monetary conversion between different sources. Table 5.1 lists military-expenditure estimates for the United States and Taiwan, 1977-1993, from three different sources after applying the U.S. GNP deflator index. The gap between estimates for the same year can be as small as zero (e.g., between the *SIPRI* and *MB* estimates of the U.S. series in 1978, 1979 and 1982), or as large as over 30% (e.g., between the *WMEAT* and *MB* estimates of the Taiwan series in 1991).

The other remedy to the missing-value problem, a remedy that also hinges on the availability of data, is to assume that various sources reflect the reality of power parity between two nations despite the substantial difference in literal figures. It is then reasonable to apply the ratio method, i.e., to use the U.S. data as a denominator to calculate replacements for the missing values of other nations. The success of the ratio method rests upon a strong, significant correlation between the data of the two sources under consideration. This is not always the case, however.

TABLE 5.1 Conversion of U.S. and Taiwan Military Estimates from Three Sources

	U.S.			Taiwan		
	WMEAT	SIPRI	MB	WMEAT	SIPRI	MB
1977	199864	213160	199857	3763	3490	3311
1978	201563	214423	214423	4321	3945	4042
1979	207338	215756	215756	4199	4138	4169
1980	223757	223816	252448	4398	4168	4965
1981	240969	239210	239210	4593	4345	5523
1982	261692	260704	283585	5714	4884	4819
1983	283173	279265	274457	7242	4926	5016
1984	294819	292223	318250	6634	4890	5727
1985	309766	318508	324594	7714	5411	5775
1986	328198	335048	328736	8006	6270	4977
1987	326272	331215	326614	6282	6045	5739
1988	319578	323860	315158	7308	6430	7306
1989	317286	320427	312266	8568	7213	6047
1990	306190	306170	299206	9051	7782	6370
1991	269968	268994	266724	9372	8086	6018
1992	285924	284116	291482	9794	8154	6453
1993	272902	269111	272627	9555	8394	10948

Source: *WMEAT* (1988, 1994), *SIPRI* (1986, 1996), and *MB* (various years).
Note: The unit is millions of dollars (1990 constant) after applying the U.S. GNP deflator index.

TABLE 5.2 Correlation Coefficients between Military Estimates from Three Sources

Row: Pairing of two data sources ; Column: Nation

	France	Japan	Poland	Taiwan	Egypt	Israel
WMEAT vs. SIPRI	.9734 (p = .000)	.9564 (.000)	.8793 (.000)	.9162 (.000)	.9049 (.000)	.8197 (.000)
WMEAT vs. MB	.6376 (.006)	.5587 (.020)	.4211 (.092)	.5822 (.014)	.5804 (.015)	.6657 (.004)
SIPRI vs. MB	.7399 (.001)	.5799 (.015)	.4408 (.077)	.7090 (.001)	.7723 (.000)	.7677 (.000)

	India	Pakistan	Argentina	UK	South Africa
WMEAT vs. SIPRI	.5231 (.031)	.1308 (.617)	.4244 (.090)	.9311 (.000)	.7607 (.000)
WMEAT vs. MB	- .2659 (.302)	.6320 (.006)	.2829 (.271)	.6623 (.004)	.5125 (.035)
SIPRI vs. MB	- .1154 (.659)	.5587 (.020)	.9000 (.000)	.8385 (.000)	.3923 (.119)

Note: This table is based upon the ratio of individual nation's military expenditures to U.S. values, 1977-93. All data has been converted into million U.S. dollars (1990 constant) using the GNP deflator index.

Table 5.2 displays correlation coefficients between the military-expenditure data of eleven nations from three sources. The most impressive results are found in the comparison between *WMEAT* and *SIPRI*. The correlation coefficients, for eight of eleven nations, are highly significant and close to 1. The estimates of India from two sources show a moderate correlation, while the *WMEAT* estimates of Pakistan and Argentina are not significantly correlated with their *SIPRI* estimates. The comparisons of *WMEAT* vs. *MB* and *SIPRI* vs. *MB* exhibit far less promising support for the ratio method. In short, there are uncertainties in using different data sources to replace missing values.

5.1.2 Permutations Using the Present Data

When only one or two values, the researcher may use the average score of the values before and after the missing data point as a replacement. This method, however, is not applicable for a single missing value occurring at the starting or end points, or for multiple missing values within a series. For yearly data of a time-serial nature, another option is to employ smoothing techniques, but this option is too time-consuming when a great number of values are missing. The remaining option is to insert the series mean as a replacement for missing values. This approach is used here. This method appears to be more consistent than the others and therefore is more likely to yield duplicable results. Moreover, assuming that the data obtained, though incomplete in some cases, accurately reflect the magnitude of a nation's military power in some years, the series mean would provide a close estimate for missing values of some other years. In addition, it should be noted not only that the summary power index is a composite score of several elements, but also that some of those elements, such as area and population, are quite stable over

time. Consequently, the substitution of the series means for missing values with regard to any individual component of national power (here military expenditure) seems unlikely to have a remarkable impact on either the final power score or the resultant power ranking.

Table 5.3 depicts the most problematic series with missing values for military estimates. It includes Afghanistan, Cambodia, Cuba, Iraq, Laos, Lebanon, Libya, Nicaragua and Vietnam.[43] In the 17-year period, 1977-1993, Cuba has only one missing value, while Cambodia has as many as 15. The most volatile series is that for Nicaragua, which estimates an amount of 4,337 million U.S. dollars (1990 constant) in military expenditures in 1982, but 206 million U.S. dollars in the very next year. This is far different from the less volatile estimates of Nicaragua suggested in both *MB* and *SIPRI*. There is no clue as to why such highly disputable numbers come up in *WMEAT*.

To evaluate the impact of the mean-value method, Table 5.4 displays possible outcomes of power ranking in Model 2 by allowing for a one-standard-deviation error in the process of replacing missing values. Overall, the impact does not change individual nation's power ranking greatly. In the worst case, if the replacement of Nicaragua's military expenditure in 1988 is overestimated by a one-standard-deviation error, the adoption of mean values would push Nicaragua ahead of the other 23 nations in the ranking.

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[43] Two other problematic series are the EC and West Bank (PLO). The estimates of the EC can be easily calculated by the data of 12 individual members. There is no data of any kind for military expenditures of the West Bank. I assigned 5% of its government expenditures as an estimate of military expenditures. Since the resulting military spending is meager and close to zero, as compared to other big-spender nations, I tend to believe that the impact of this estimate on the power ranking of the West Bank is small and insignificant.

TABLE 5.3 Missing Values of Military Estimates for Important International Actors

Row: Nation ; Column: Year

	1977 1986	1978 1987	1979 1988	1980 1989	1981 1990	1982 1991	1983 1992	1984 1993	1985
Cuba	(1479) 1527	1919 1479	1967 1472	1772 1437	1702 1400	1772 1117	1909 469	1724 391	1602
Nicaragua	1281 (1195)	1582 (1195)	1132 (1195)	2249 (1195)	2863 (1195)	4337 67	206 39	261 34	286
Libya	3654 (4199)	6127 3080	6258 (4199)	5306 3248	(4199) (4199)	5261 2285	5419 2125	6153 1466	(4199)
Iraq	13464 15360	16284 15039	16963 14296	27132 10967	30755 11343	29430 8674	17185 (17383)	19587 (17383)	14269
Lebanon	309 (382)	387 (382)	495 (382)	521 (382)	433 214	376 226	697 264	407 251	(382)
Cambodia	(81) (81)	(81) (81)	(81) (81)	(81) (81)	(81) (81)	(81) (81)	(81) 94	(81) 68	(81)
Laos	(83) (83)	(83) (83)	85 (83)	(83) (83)	(83) (83)	(83) (83)	(83) 98	69 96	66
Vietnam	(1409) 2812	(1409) (1409)	(1409) (1409)	(1409) (1409)	(1409) 723	(1409) 693	(1409) (1409)	(1409) (1409)	(1409)
Afghani-stan	105 (246)	114 (246)	298 (246)	291 (246)	251 408	221 (246)	227 (246)	302 (246)	(246)

Note: The unit of measurement is a million U.S. dollars (1990 constant). Within the parentheses are mean values of the series as replacements of missing values.

TABLE 5.4 Impacts on Power Ranking Allowing a Change of One Standard Deviation

Year	Nation	M − Δ	M	M + Δ	Δ
1977	Cuba	76	71	69	466.08
1988	Nicaragua	124	101	83	1367.14
1988	Libya	42	42	34	1745.23
1988	Lebanon	121	117	114	142.57
1988	Cambodia	106	106	106	18.38
1988	Laos	111	111	111	14.86
1993	Afghanistan	78	78	77	95.15
1993	Vietnam	51	44	40	1214.84
1993	Iraq	25	20	15	6670.46

Note: 'Year' denotes the year of data used. Cells in the middle columns are the power rankings of nations under consideration. M signifies that the mean values are used to replace missing values. M ± Δ represents allowance for the error of one standard deviation made in replacing missing values. Cells under Δ are the standard deviation of individual nation's series.

Moreover, owing to international sanctions led by the United States, Iraq seemed to have been unable to spend as much during recent years as in the years before the Gulf War. Its power score should drop one to five places, given the possible overestimation by one standard deviation. Furthermore, there is little change in power rankings for Afghanistan, Libya, Lebanon, and Cuba. The results for Vietnam, Cambodia and Laos are satisfactory, but might be misleading because of the large number of missing values. The use of the mean-value method for permutations yields less confidence when a considerable portion of the data is missing. In brief, the impact on power ranking of replacing missing data with mean values is minimal and thus acceptable. In a composite power index, because the final score is not determined by a single component, the mean-value substitution seems to work fairly well.

5.2 POWER ASSESSMENT

5.2.1 Relationships between Individual Power Measures

In quantifying power, we have proposed five elements: area, population, GNP, military expenditure, and energy consumption per capita. Table 5.5 shows the correlation coefficients between individual components of power, using the mean values over time. The direction of association is all positive; that is, the interactive effect of any two elements, if existing, is more likely to be reinforcing, rather than offsetting. Either GNP or military expenditure is significantly correlated to other sources of power. The strongest correlation is between GNP and military expenditure (= .8252), and the second strongest is between military expenditure and area (= .7374). Other positive correlation coefficients between paired groups are moderate (from .2532 to .4799).

TABLE 5.5 Correlation Coefficients between Individual Power Components

	MNAREA	MNPOPU	MNENGY	MNGNP	MNME
MNAREA	1.0000 (266) P = .				
MNPOPU	.4799 (185) P = .000	1.0000 (185) P = .			
MNENGY	.1091 (221) P = .106	.0047 (181) P = .950	1.0000 (222) P = .		
MNGNP	.4540 (185) P = .000	.4100 (185) P = .000	.2558 (181) P = .001	1.0000 (185) P = .	
MNME	.7374 (184) P = .000	.3819 (184) P = .000	.2532 (180) P = .001	.8252 (184) P = .000	1.0000 (184) P = .

Note: The numbers are in the order of Coefficient / (Cases) / 2-tailed Significance. MN stands for the mean values across time; therefore, MNME represents the mean values of military expenditures from 1977 to 1993. Similarly, the notations are extended to other variables.

TABLE 5.6 Correlation Coefficients between Three Power Models

	MNPM1	MNPM2	MNPM3
MNPM1	1.0000 (185) P = .		
MNPM2	.9131 (184) P = .000	1.0000 (184) P = .	
MNPM3	.8511 (180) P = .000	.9176 (180) P = .000	1.0000 (180) P = .

Note: The numbers are in the order of Coefficient / (Cases) / 2-tailed Significance. MN stands for the mean values across time and PM1 denotes Power Model 1; therefore, MNPM1 represents the mean values of power scores in Model 1 from 1977 to 1993. Similarly, the notations are applied to MNPM2 and MNPM3.

There is, however, no relationship between area and energy consumption per capita, nor between population and energy consumption per capita. We should not make too much of the latter, however, because population serves as a denominator of energy consumption per capita.

Based upon the results shown in Table 5.5, I could generate a few, if not all, propositions of interest:

PROPOSITION 5.1: *The higher GNP a nation obtains, the greater its military spending will be.*

PROPOSITION 5.2: *The larger area a nation possesses, the greater its military spending will be.*

PROPOSITION 5.3: *There is no relationship between area and energy consumption per capita.*

5.2.2 A Comparison between Cline's Model and Three Power Models

In empirical applications, it is trivial and inappropriate to apply all three power equations to the proposed framework or models and then choose to report the one with the most significant results. As mentioned earlier, theoretical significance as well as empirical performance should serve as yardsticks to evaluate which one of the three power equations is the most suitable for use. A more realistic approach is to look at how well each equation mirrors our general perception of the real world. In the following section, the discussion involves a comparison between three power equations and an assessment of their implications for real-world settings.

First, Table 5.6 indicates that all three power models are strongly correlated to each other. In descending order, the correlation coefficients are .9176 (Model 2 vs.

Model 3), .9131 (Model 1 vs. Model 2), and .8511 (Model 1 vs. Model 3). All three equations seem to point in the same direction: toward the phenomenon of the national power in question.

Next, the comparison between different power models will focus on two criteria: the superpower(s) assumptions and strategic implications. Students of international relations have long debated the polarity issue in the international system and continue to do so. Any outcome of power rankings should reflect, at least partially, how well certain worldviews or assumptions about the international power structure—unipolarity (hegemony), bipolarity (two superpowers), and multipolarity—match with the empirical footprints from the real world, portrayed in the collected data. I will compare top-ranked powers to see which underlying assumptions best fit the power model in use. Since the superpower assumption is crucial for my analysis, I will hazard an operational definition of a superpower: A superpower is a nation so far ahead of others that it takes at least three great powers to form a coalition to compete with (to tie or surpass) it.

As to the criteria for strategic implications, I will concentrate on only one simple aspect—*attack-strength ratios*. Dunnigan explicates the concept of *attack-strength ratios* as follows:

> The offensive needs three or more times as much combat *strength* (not just troops and weapons) in order to overcome a defender at the point of attack. This may vary with the size of the forces, because at the platoon level the required ratio can be as high as 10 to 1. At the theater level, where up to a million or more troops are involved, anything between 1 to 1 and 2 to 1 will often suffice because only a small part of the terrain in the theater will be fought over at any one time. You also have to take time into account. The larger the advantages, the less time it will take to win (1993, 19).

Accordingly, in my strategic analysis, I take the view that an offensive nation requires a force at least 3 to 5 times as large as that of a defensive nation to conquer it. Given an all-out war between any two nations, the power ratio will predict if and how the weaker nation can prevail, by referring to the attack-strength ratio just described. I will make hypothetical comparisons of paired rivalries such as China vs. Taiwan and South Korea vs. North Korea to explore the strategic implications. In doing so, I will try to determine which power model is most reasonable. The more detailed evaluation in Table 5.7 lists the resulting power rankings of all three models as well as that of Cline's model.

Cline's Model

As mentioned earlier, Cline's method of constructing a power index is arbitrary and subjective, or simply, neither scientific nor precise. Among all categories for assessing power, *strategic purpose* and *national will* are most controversial. Another problem is that in Cline's index about half of the nations have tie scores with other nations. Moreover, the data for evaluating power in Cline's model use only one year's numbers. Some results are improbable, if not absurd, as will be shown below.

TABLE 5.7 Comparison of Power Rankings between Different Models

#	Model 1		Model 2		Model 3		Cline's Model	
1	USA	(46.657)	USA	(37.229)	USA	(196.497)	USA	(550)
2	EC	(46.195)	USSR	(35.608)	USSR	(111.760)	Japan	(434)
3	Japan	(27.229)	EC	(28.244)	EC	(63.266)	Germany	(364)
4	USSR	(24.879)	Russia	(16.453)	Russia	(59.080)	Russia	(328)
5	Germany	(13.124)	China	(14.911)	Canada	(24.003)	Canada	(250)
6	W. Germany	(11.928)	Japan	(11.820)	Japan	(23.951)	China	(240)
7	France	(9.601)	Germany	(7.682)	Germany	(23.043)	UK	(240)
8	China	(8.028)	India	(7.119)	W. Germany	(20.174)	France	(240)
9	Italy	(7.702)	W. Germany	(6.866)	France	(13.683)	Italy	(220)
10	UK	(7.164)	France	(6.204)	UK	(13.064)	Brazil	(216)
11	Russia	(6.323)	UK	(5.034)	Australia	(10.436)	Taiwan	(195)
12	Canada	(4.019)	Canada	(4.520)	Italy	(7.355)	S. Korea	(180)
13	Brazil	(3.633)	Brazil	(4.507)	E. Germany	(6.024)	Indonesia	(175)
14	Spain	(3.317)	Italy	(4.178)	China	(5.592)	Australia	(175)
15	Netherlands	(2.288)	Australia	(3.004)	Saudi Arabia	(5.448)	India	(147)
16	Poland	(2.123)	Saudi Arabia	(2.562)	Poland	(4.839)	Spain	(140)
17	Mexico	(2.111)	Iran	(2.275)	Netherlands	(4.431)	Mexico	(125)
18	Australia	(2.018)	Indonesia	(2.003)	Ukraine	(3.706)	Turkey	(117)
19	Switzerland	(1.919)	Poland	(1.976)	Czech	(3.696)	S. Africa	(114)
20	India	(1.887)	Spain	(1.969)	Kazakhstan	(3.199)	Thailand	(110)
21	Iran	(1.777)	Mexico	(1.798)	Sweden	(2.770)	Switzerland	(105)
22	Ukraine	(1.741)	Argentina	(1.674)	Belgium	(2.684)	Netherlands	(102)
23	E. Germany	(1.733)	E. Germany	(1.561)	Spain	(2.476)	Egypt	(99)
24	Belgium	(1.557)	Iraq	(1.540)	Romania	(2.308)	Belgium	(94)
25	Sweden	(1.556)	Netherlands	(1.325)	UAE	(2.091)	Ukraine	(88)
26	Argentina	(1.457)	Ukraine	(1.300)	Switzerland	(1.988)	Pakistan	(84)
27	S. Korea	(1.454)	S. Korea	(1.253)	Norway	(1.766)	Norway	(80)
28	Czech	(1.340)	Czech	(1.139)	Brazil	(1.754)	Vietnam	(77)
29	Austria	(1.313)	Pakistan	(1.105)	Bulgaria	(1.685)	N. Korea	(77)
30	Saudi Arabia	(1.243)	S. Africa	(1.067)	Argentina	(1.585)	Argentina	(72)
31	Romania	(1.156)	Romania	(1.027)	Mexico	(1.577)	Nigeria	(72)
32	Taiwan	(1.088)	Turkey	(1.021)	Iran	(1.505)	Iran	(66)
33	Denmark	(1.028)	Sweden	(.995)	S. Africa	(1.457)	Austria	(65)
34	Yugoslavia	(.874)	Switzerland	(.991)	Denmark	(1.424)	Israel	(63)
35	S. Africa	(.868)	Algeria	(.988)	Libya	(1.408)	Philippines	(63)
36	Norway	(.759)	Egypt	(.980)	S. Korea	(1.350)	Saudi Arabia	(60)
37	Finland	(.741)	Kazakhstan	(.970)	Finland	(1.269)	Kazakhstan	(56)
38	Indonesia	(.740)	Taiwan	(.950)	Austria	(1.266)	Hong Kong	(55)
39	Hungary	(.736)	Nigeria	(.918)	Czech Rep.	(1.203)	Algeria	(52)
40	Turkey	(.708)	Belgium	(.897)	Hungary	(1.139)	Poland	(52)
41	Czech Rep.	(.610)	Libya	(.845)	Kuwait	(1.134)	Sweden	(50)
42	Thailand	(.564)	Zaire	(.827)	N. Korea	(.970)	Denmark	(50)
43	Greece	(.558)	Sudan	(.813)	Taiwan	(.958)	New Zealand	(50)
44	Iraq	(.544)	Bangladesh	(.798)	Qatar	(.954)	Singapore	(48)

TABLE 5.7 (cont'd)

#	Model 1		Model 2		Model 3		Cline's Model	
45	Bulgaria	(.532)	Thailand	(.796)	India	(.934)	Chile	(48)
46	Kazakhstan	(.529)	Yugoslavia	(.732)	Venezuela	(.878)	Zaire	(42)
47	Belarus	(.526)	Peru	(.685)	Yugoslavia	(.874)	Finland	(40)
48	Portugal	(.464)	Philippines	(.658)	Israel	(.873)	Morocco	(40)
49	Algeria	(.453)	Israel	(.645)	Uzbekistan	(.799)	Libya	(36)
50	Uzbekistan	(.442)	Vietnam	(.635)	Belarus	(.741)	Bangladesh	(34)
51	Venezuela	(.435)	N. Korea	(.631)	Greece	(.675)	Colombia	(33)
52	Israel	(.405)	Colombia	(.628)	Singapore	(.628)	Syria	(30)
53	Philippines	(.404)	Bulgaria	(.624)	Iraq	(.622)	Sudan	(30)
54	Egypt	(.387)	Ethiopia	(.620)	New Zealand	(.531)	Greece	(28)
55	Hong Kong	(.379)	Austria	(.612)	Algeria	(.507)	Romania	(28)
56	Peru	(.374)	Hungary	(.593)	Turkey	(.475)	Peru	(27)
57	New Zealand	(.348)	Burma	(.565)	Turkmenistan	(.428)	Ethiopia	(26)
58	Libya	(.346)	Denmark	(.548)	Slovakia	(.412)	Yemen	(24)
59	UAE	(.338)	Venezuela	(.545)	Oman	(.369)	Burma	(22)
60	Colombia	(.324)	Norway	(.527)	Mongolia	(.355)	UAE	(22)
61	Kuwait	(.322)	Greece	(.521)	Egypt	(.306)	Venezuela	(20)
62	Malaysia	(.320)	Uzbekistan	(.515)	Ireland	(.296)	Iceland	(20)
63	Cuba	(.298)	Syria	(.495)	Indonesia	(.288)	Kenya	(15)
64	Pakistan	(.296)	Finland	(.449)	Syria	(.269)	Tanzania	(15)
65	Ireland	(.285)	Chile	(.439)	Portugal	(.268)	Iraq	(15)
66	N. Korea	(.268)	Czech Rep.	(.432)	Colombia	(.265)	Panama	(14)
67	Slovakia	(.264)	Angola	(.421)	Luxembourg	(.258)	Cuba	(14)
68	Syria	(.263)	Mongolia	(.421)	Brunei	(.242)	Niger	(12)
69	Singapore	(.262)	Morocco	(.398)	Malaysia	(.242)	Portugal	(10)
70	Burma	(.248)	Kuwait	(.398)	Chile	(.235)	Malaysia	(10)
71	Nigeria	(.246)	Tanzania	(.394)	Serbia	(.226)	Belarus	(10)
72	Chile	(.226)	Malaysia	(.387)	Bahrain	(.225)	Hungary	(10)
73	Morocco	(.179)	Niger	(.366)	Thailand	(.221)	Mali	(9)
74	Nicaragua	(.173)	Mali	(.361)	Cuba	(.210)	Mongolia	(9)
75	Bangladesh	(.165)	Portugal	(.353)	Peru	(.201)	Bulgaria	(7)
76	Vietnam	(.142)	Chad	(.352)	Estonia	(.195)	Angola	(6)
77	Azerbaijan	(.136)	Bolivia	(.335)	Lithuania	(.185)	Chad	(6)
78	Slovenia	(.115)	Serbia	(.319)	Croatia	(.179)	Not Available	
79	Croatia	(.112)	Belarus	(.318)	Hong Kong	(.173)	Not Available	
80	Moldova	(.109)	Kenya	(.310)	Azerbaijan	(.151)	Not Available	

Note: Within parentheses are corresponding power scores. In Cline's model, Power = (C + E + M) × (S + W), where C = critical mass (= area + population), E = economic capability, M = military capability, S = strategic purpose, and W = national will. In Model 1, Power = (Nation *i*'s GNP/World Total) × 200. In Model 2, Power = {[(*i*'s POPU/World Total) × 100 + (*i*'s AREA/World Total) × 100] + (*i*'s GNP/World Total) × 200 + (*i*'s ME/World Total) × 200}/3, where critical mass comprises POPU and AREA. In Model 3, Power = Model 2 × (*i*'s ENGY/World Average).

In an earlier assessment, using the data for the year 1978, Cline (1980, 173) assigns final scores (in parentheses) to the top fifteen powers as follows: USSR (458), USA (304), Brazil (137), West Germany (116), Japan (108), Australia (88), China (83), France (74), UK (68), Canada (61), Indonesia (55), Taiwan (49), South Korea (46), Egypt (46), and South Africa (40). According to the definition of superpower previously provided, this result seems to support the two-superpower assumption that fits the common perception of the Cold War period in the 1970s; but the power gap between the United States and the Soviet Union seems exaggerated. Moreover, the ranking of great powers, particularly assigning Brazil to third place, is highly debatable.

As can be seen in Table 5.7, Cline's (1994, 107-9) latest assessment of the current state of the post-Cold War era seems to support the multipolar assumption, in which the United States is merely the strongest among great powers. This is the opposite of what is generally perceived. In addition, the ranking of Canada ahead of China seems to be overstated. To say the least, Canada's population would be at a great disadvantage if engaged in an all-out conflict with China. In both editions of power assessment, Cline appears to be favor, and have a high rank to, Taiwan and South Korea. If this ranking reflected reality, we would not have seen these two countries in turmoil, time and again, as a result of the troop movements or military exercises of China or North Korea. In the cases of Taiwan and South Korea, Cline's assessment is a comfort to optimists but a nightmare to realists or pessimists. All things considered, Cline's model falls far short of meeting scientific standards or surviving a reality check.

Three Power Models

As illustrated in Table 5.7, in the power structure of the late 1970s and 1980s, both Model 1 and Model 3 present the United States as the sole superpower, while Model 2 presents the United States and the USSR as the two contending superpowers among all nations. In Model 1, Russia falls far behind Japan, Germany, France, China, Italy and Britain in the post-Cold War era. This is probably misleading because Russia did not decline as fast as implied; it is still a great nation with resources and force. If GNP were the sole source of national power as in Model 1, North Korea (score = .27) would not dare to invade South Korea (= 1.45), and South Korea would not need the presence of American troops.[44]

Model 3 equals Model 2 times a capacity index based on energy consumption per capita. It tends to enlarge the power gap between great powers and a single superpower. Notably, in Model 3, the United States has a power score eight times as high as that of Japan, while China drops to the bottom of great powers, even behind East Germany. Moreover, United Arab Emirates ranks at the twenty-fifth place from the top, ahead of Brazil, Argentina, Mexico, and Iran. These assessments are far too contrary to our general perceptions about the real world; therefore, they should be rejected as unrealistic. In addition, there are certain biases associated with the variable of energy consumption

[44] The presence of American troops in South Korea is perhaps better explained by the logic of balance of power.

per capita. Some have suggested, for example, that nations of higher latitude tend to have more energy consumption per capita.[45]

In my view, Model 2 provides a more realistic representation of the international system than does either Model 1 or Model 3. As shown in Table 5.7, the Cold War period was dominated by two superpowers: the United States and the USSR. Neither had an advantage over its counterpart, and this is why bloc- or coalition-forming was important and played an indispensable part in the Cold-War standoff. Both superpowers saw China as a worthy partner or a formidable adversary, depending on which camp it leaned toward. Since the post-Cold War era, Russia has not been in free-fall; it is still the number two nation in the world, followed closely by China and Japan. From the strategic point of view, there are no obviously unreasonable rankings in Model 2. According to Model 2, aggression by North Korea is not unlikely, and Taiwan should not take lightly the threat of China's using force. In short, among the three power equations, Model 2 is superior to Model 1 and Model 3 because it yields a more precise picture of the real world as it is generally perceived.

[45] The results of a correlational analysis between energy consumption per capita and the average temperature of the coldest month in the year ($r = -.3918$, $p = .000$, $n = 178$) are in support of this proposition. The temperature data is extracted from *Reader's Digest Book of Facts* (1987, 132-49). In addition, a one-way ANOVA analysis suggests a borderline relationship ($p = .055$) between the membership of the Organization of Petroleum Exporting Countries (OPEC) and energy consumption per capita.

TABLE 5.8 Four-Fold Classification of Nations

Variable Name = FOURPOW

Value	Category	Nations
4	Superpowers	USA, USSR, (also EC, if included)
3	Great Powers	Russia, China, Japan, Germany, India, West Germany, France, UK, Canada, Brazil, Italy, Australia
2	Middle Powers	Saudi Arabia, Iran, Indonesia, Poland, Spain, Mexico, Argentina, East Germany, Iraq, Netherlands, Ukraine, South Korea, Czechoslovakia, Pakistan, South Africa
1	Small Powers	Romania, Turkey, Sweden, Switzerland, Algeria, Egypt, Kazakhstan, Taiwan, Nigeria, Belgium, Libya, Zaire, Sudan, Bangladesh, Thailand, Yugoslavia, Peru, Philippines, Israel, Vietnam, North Korea, Colombia, and all other nations

Note: The listing follows a descending order based on the average power scores of Model 2 over the period from 1977 to 1993.

Additionally, the power ranking of Model 2 in Table 5.7 can be used to classify nations into four groups: superpower(s), great powers, middle (regional/intermediate) powers, and small powers. I selected Australia's rank as the cutoff point between great and middle powers, and South Africa's rank as the cutoff point between middle and small powers. The threshold distinguishing between great and middle powers is based upon the reasoning that Australia and nations ranked above it have the physical conditions, or at least the potential, to become great powers. On the other hand, the distinction between middle and small powers is rather subjective. Some might prefer a more extensive list of middle powers that would include Turkey, Egypt, Kazakhstan, or Libya as well. The four-fold classification of nations based upon Model 2 is presented in Table 5.8.

The behavior of superpowers or great powers is always *in*, if not *under*, the spotlight. Extensive literature regarding superpowers or great powers can be found in

Bartlett (1994), Macridis (1967), Miller (1995), Northedge(1968), Rajan and Ganguly (1981), and Richardson (1994). The foreign policies of middle and small powers have drawn some, if not widespread, attention from time to time. Studies of middle powers can be found in Cooper (1997), Neack (1992), and Neumann (1992). Moreover, the North-South Institute at Ottawa, Canada, has published a series of monographs called *Middle Powers in the International System*, focusing on specialized topics, such as international telecommunications in Doran (1989). Additional analyses of the behavior of small powers can be found in Barston (1973), Handel (1981), Inbar and Sheffer (1997), Jackson (1990), Korany (1984), Schou and Brundtland (1971), Vital (1967), and Worsley and Kitromilides (1979).

It is clear that these four categories of nations are recognized in the literature of international relations. Empirical efforts to classify nations into four clusters may be conducive to theory testing or building. For example, given available cross-sectional data, one can make contrasts between the foreign policy patterns in different clusters of nations to test existing theories or to generate new propositions. This system of classifying nations into four groups may have an advantage over the original relative capability scores because of its simplicity and comprehensibility in interpretation. For instance, by using this classification, one can investigate and interpret the orientation of U.S. foreign policy toward different clusters of nations. One can discuss the American behavior toward "small states," instead of the American behavior toward "nations which are one hundredth or less as strong." The relative capability index at the ratio level sometimes sounds awkward in interpretation, although it allows for a more precise illustration or comparison of national power in terms of numbers.

TABLE 5.9 Top 15 Power Rankings of Model 1 from 1977 to 1993

Rank	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
1	EC	USA	EC	EC	USA	EC	EC	USA	USA	USA	USA	USA	USA	USA	EC	EC	USA
	48.24	48.17	47.99	47.49	46.89	46.72	46.27	46.89	46.72	46.59	46.42	46.23	46.10	45.99	46.39	48.00	48.28
2	USA	EC	USA	USA	EC	USA	USA	EC	EC	EC	EC	EC	EC	EC	USA	USA	EC
	47.46	47.99	47.68	46.61	46.72	45.59	44.48	45.17	44.80	44.68	44.42	44.26	44.49	44.84	45.46	47.62	46.84
3	USR	USR	USR	USR	USR	USR	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN
	27.25	27.25	26.43	26.29	26.35	26.90	27.96	27.83	28.33	28.23	28.50	28.99	29.52	30.46	31.62	32.87	32.40
4	JPN	JPN	JPN	JPN	JPN	JPN	USR	USR	USR	USR	USR	USR	USR	USR	USR	CHN	CHN
	21.68	21.97	22.36	22.82	23.34	24.01	26.01	25.02	24.41	24.51	23.98	23.62	23.15	21.98	20.05	13.98	15.57
5	GFR	GFR	GFR	GFR	GFR	GFR	GFR	GFR	GFR	GFR	GFR	GFR	GFR	GFR	GMY	GMY	GMY
	12.71	12.65	12.71	12.62	12.46	12.31	11.87	11.67	11.56	11.41	11.21	11.13	11.23	11.46	12.99	13.47	12.92
6	FRN	FRN	FRN	FRN	FRN	FRN	FRN	FRN	FRN	CHN	CHN	CHN	CHN	CHN	CHN	FRN	FRN
	10.01	10.02	10.01	9.91	9.81	9.95	9.83	9.50	9.36	9.39	10.07	10.74	10.88	11.16	12.02	9.68	9.42
7	ITA	ITA	ITA	ITA	ITA	ITA	ITA	CHN	CHN	FRN	FRN	FRN	FRN	FRN	FRN	ITA	ITA
	8.25	8.18	8.31	8.45	8.30	8.23	7.56	8.20	8.95	9.33	9.22	9.21	9.28	9.33	9.35	7.57	7.41
8	UK	UK	UK	UK	UK	UK	CHN	ITA	ITA	ITA	ITA	ITA	ITA	ITA	ITA	UK	UK
	7.44	7.44	7.40	7.02	6.85	6.90	7.49	7.41	7.36	7.34	7.33	7.31	7.29	7.31	7.34	7.13	7.13
9	CAN	CAN	CAN	CAN	CAN	CAN	UK	UK	UK	UK	UK	UK	UK	UK	UK	RUS	RUS
	4.12	4.14	4.15	4.13	4.19	4.04	7.27	7.11	7.11	7.20	7.26	7.28	7.22	7.11	6.91	6.73	5.91
10	IRN	POL	IRN	IRN	CHN	CHN	CAN	CAN	BRA	BRA	BRA	BRA	BRA	CAN	BRA	BRA	BRA
	3.89	3.44	3.41	3.22	3.15	3.44	3.87	3.92	4.06	4.34	4.37	4.15	4.16	3.92	3.95	4.04	4.20
11	POL	SPN	POL	POL	IRN	IRN	BRA	BRA	CAN	CAN	CAN	CAN	CAN	BRA	CAN	CAN	CAN
	3.45	3.17	3.27	3.12	3.10	3.36	3.84	3.87	3.98	3.98	4.02	4.03	4.00	3.92	3.85	3.97	4.00
12	SPN	IRN	SPN	CHN	SPN	SPN	SPN	SPN	SPN	SPN	SPN	SPN	SPN	SPN	SPN	SPN	SPN
	3.23	3.03	3.07	3.06	2.98	3.01	3.40	3.29	3.29	3.30	3.37	3.39	3.46	3.52	3.58	3.69	3.59
13	BRA	CHN	CHN	SPN	POL	POL	MEX	MEX	MEX	MEX	MEX	MEX	MEX	MEX	MEX	MEX	MEX
	2.72	2.84	2.93	3.05	2.92	2.88	2.52	2.50	2.51	2.32	2.31	2.25	2.27	2.36	2.45	2.57	2.53
14	CHN	BRA	BRA	BRA	BRA	BRA	NTH	NTH	NTH	NTH	NTH	NTH	NTH	NTH	KOS	KOS	KOS
	2.62	2.73	2.81	2.99	2.82	2.81	2.23	2.20	2.18	2.17	2.13	2.08	2.13	2.18	2.24	2.41	2.50
15	NTH	NTH	NTH	NTH	NTH	IND	AUL	AUL	AUL	AUL	AUL	AUL	AUL	KOS	NTH	NTH	NTH
	2.56	2.52	2.49	2.46	2.41	2.41	1.99	1.98	1.98	1.97	2.00	2.00	1.98	2.06	2.21	2.30	2.27

TABLE 5.10 Top 15 Power Rankings of Model 2 from 1977 to 1993

Rank	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
1	USR	USR	USR	USR	USR	USR	USA	USA	USA	USA	USA	USA	USA	USA	USA	USA	USA
	37.97	37.75	37.70	37.29	36.88	36.39	36.03	37.31	37.83	38.44	38.24	37.91	38.37	38.14	37.33	41.14	42.20
2	USA	USA	USA	USA	USA	USA	USR	USR	USR	USR	USR	USR	USR	USR	USR	EC	EC
	34.85	34.57	34.71	34.84	35.61	35.66	35.93	35.48	35.22	35.00	35.21	35.49	34.12	32.71	30.98	30.26	30.44
3	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	CHN	CHN
	28.99	28.87	29.06	28.79	28.35	28.02	27.91	27.48	27.23	26.90	27.02	26.82	27.26	27.51	29.24	17.90	18.83
4	CHN	CHN	CHN	CHN	CHN	CHN	CHN	CHN	CHN	CHN	CHN	CHN	CHN	CHN	CHN	RUS	RUS
	12.59	12.58	12.72	12.46	12.36	12.34	14.98	15.24	15.42	15.42	15.66	15.92	16.01	16.31	16.74	17.33	15.57
5	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN
	9.42	9.57	9.77	9.89	10.07	10.29	11.84	11.85	12.07	12.07	12.24	12.49	12.81	13.24	13.92	14.65	14.76
6	GFR	GFR	GFR	GFR	GFR	IND	GFR	IND	IND	IND	IND	IND	IND	IND	GMY	GMY	GMY
	7.39	7.36	7.39	7.29	7.24	7.26	6.79	6.91	6.95	6.99	7.05	7.09	7.10	7.17	7.56	7.86	7.62
7	IND	IND	IND	IND	IND	GFR	IND	GFR	GFR	GFR	GFR	GFR	GFR	GFR	IND	IND	IND
	7.11	7.16	7.08	7.10	7.18	7.05	6.77	6.68	6.61	6.48	6.40	6.36	6.47	6.61	7.19	7.39	7.52
8	FRN	FRN	FRN	FRN	FRN	FRN	FRN	FRN	FRN	FRN	FRN	FRN	FRN	FRN	FRN	FRN	FRN
	6.24	6.30	6.35	6.29	6.26	6.21	6.18	6.03	5.94	5.87	5.90	5.90	6.04	6.11	6.38	6.67	6.81
9	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK
	5.11	5.06	5.10	5.01	4.77	4.79	5.11	5.06	5.06	5.01	4.99	4.89	4.95	4.97	5.18	5.22	5.33
10	IRN	IRN	CAN	CAN	CAN	CAN	BRA	BRA	BRA	BRA	BRA	BRA	BRA	BRA	BRA	BRA	BRA
	4.80	4.81	4.49	4.48	4.50	4.47	4.49	4.51	4.59	4.73	4.78	4.82	4.88	4.84	4.79	4.78	4.87
11	CAN	CAN	ITA	ITA	ITA	ITA	CAN	CAN	CAN	CAN	CAN	CAN	CAN	CAN	CAN	CAN	CAN
	4.50	4.53	4.37	4.42	4.33	4.31	4.38	4.44	4.50	4.50	4.53	4.54	4.54	4.54	4.53	4.65	4.72
12	ITA	ITA	BRA	BRA	BRA	BRA	ITA	ITA	ITA	ITA	ITA	ITA	ITA	ITA	ITA	ITA	ITA
	4.31	4.28	4.08	4.14	4.09	4.13	4.01	3.97	3.92	3.93	4.04	4.04	4.08	4.06	4.18	4.35	4.43
13	BRA	BRA	IRN	IRN	SAU	SAU	SAU	AUL	AUL	AUL	AUL	AUL	AUL	AUL	SAU	SAU	AUL
	4.06	4.06	3.61	3.10	3.16	3.19	3.10	2.97	2.98	2.97	3.00	2.97	2.97	2.98	3.24	3.34	3.27
14	AUL	AUL	AUL	AUL	IRN	IRN	AUL	SAU	SAU	SAU	SPN	INS	SPN	SAU	AUL	AUL	SAU
	2.97	2.97	2.95	2.96	3.04	3.14	2.96	2.59	2.47	2.07	2.02	2.00	2.04	2.35	3.06	3.16	2.45
15	POL	POL	POL	SAU	AUL	AUL	ARG	ARG	INS	INS	INS	SPN	INS	INS	SPN	SPN	SPN
	2.74	2.71	2.66	2.84	2.97	2.96	2.03	2.05	2.03	2.04	1.99	1.99	2.02	2.04	2.07	2.12	2.18

TABLE 5.11 Top 15 Power Rankings of Model 3 from 1977 to 1993

Rank	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
1	USA	USA	USA	USA	USA	USA	USA	USA	USA	USA	USA	USA	USA	USA	USA	USA	USA
	197.6	195.2	195.3	185.5	191.9	184.3	184.2	192.2	191.6	192.4	190.0	193.8	198.6	196.6	200.9	221.6	228.9
2	USR	USR	USR	USR	USR	USR	USR	USR	USR	USR	USR	USR	USR	USR	USR	EC	EC
	102.3	102.1	103.8	106.7	111.8	115.0	116.5	114.1	114.4	117.9	121.6	124.8	114.1	113.3	97.96	75.47	75.85
3	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	RUS	RUS
	61.10	61.22	62.49	63.14	61.65	61.04	61.25	59.49	59.77	60.55	59.62	57.85	59.77	62.12	73.17	63.98	54.18
4	CAN	CAN	CAN	CAN	CAN	CAN	CAN	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN	JPN
	23.29	23.29	24.00	23.45	23.93	23.77	22.97	24.23	23.75	23.07	23.83	25.00	26.39	28.44	32.61	34.79	35.51
5	GFR	GFR	GFR	GFR	GFR	GFR	JPN	CAN	CAN	CAN	CAN	CAN	CAN	CAN	CAN	CAN	CAN
	20.91	21.55	21.94	21.37	21.48	21.27	22.10	23.36	23.61	23.02	23.37	24.42	25.33	24.10	24.76	25.57	25.80
6	JPN	JPN	JPN	JPN	JPN	JPN	GFR	GFR	GFR	GFR	GFR	GFR	GFR	GFR	GMY	GMY	GMY
	16.07	15.94	18.01	18.67	19.02	19.76	20.67	19.99	20.12	19.38	18.75	18.17	17.78	19.07	23.76	23.24	22.13
7	FRN	FRN	FRN	FRN	FRN	FRN	UK	UK	UK	UK	UK	UK	UK	UK	FRN	FRN	FRN
	13.34	13.28	13.51	13.99	13.49	13.59	13.11	12.95	13.17	14.16	13.26	12.34	12.72	12.83	17.15	18.19	18.53
8	UK	UK	UK	UK	UK	UK	FRN	FRN	FRN	FRN	FRN	FRN	FRN	FRN	UK	UK	UK
	13.01	12.87	12.97	12.38	11.68	11.90	13.00	12.72	12.62	12.02	11.43	11.04	12.17	12.53	13.66	14.15	14.93
9	AUL	AUL	AUL	AUL	AUL	AUL	AUL	AUL	AUL	AUL	AUL	AUL	AUL	AUL	SAU	AUL	AUL
	9.53	9.25	9.11	9.14	9.40	11.62	9.77	9.79	10.36	10.49	10.69	10.51	10.98	11.62	11.05	11.69	12.43
10	POL	POL	POL	ITA	ITA	GDR	ITA	ITA	ITA	ITA	ITA	ITA	ITA	SAU	AUL	SAU	ITA
	7.46	7.53	7.49	7.50	7.49	7.13	6.71	6.62	6.83	6.66	7.51	7.48	7.96	7.78	11.03	10.23	8.96
11	ITA	ITA	ITA	POL	GDR	ITA	SAU	GDR	GDR	GDR	SAU	CHN	CHN	ITA	ITA	ITA	CHN
	6.65	6.54	6.58	7.39	6.85	6.84	6.11	5.75	5.77	5.83	6.43	6.15	6.63	7.72	8.23	8.77	8.13
12	GDR	GDR	GDR	GDR	POL	POL	GDR	CHN	CHN	CHN	CHN	GDR	SAU	CHN	CHN	CHN	SAU
	6.31	6.25	6.17	6.62	5.86	6.15	5.69	5.44	5.66	5.74	6.11	5.63	5.88	6.86	6.69	7.48	7.18
13	CZE	CHN	NTH	CZE	CZE	SAU	CHN	SAU	POL	POL	GDR	SAU	GDR	GDR	UAE	NTH	NTH
	4.53	4.62	4.68	4.49	4.51	5.29	5.07	5.06	4.73	4.74	5.77	5.55	5.76	4.84	4.97	4.91	5.13
14	CHN	CZE	CHN	NTH	NTH	CZE	POL	POL	SAU	NTH	POL	POL	NTH	NTH	NTH	UKR	KOS
	4.26	4.46	4.59	4.46	4.15	4.65	4.62	4.66	4.72	4.70	4.68	4.44	4.22	4.69	4.64	4.11	3.52
15	NTH	NTH	CZE	CHN	CHN	NTH	NTH	NTH	NTH	SAU	NTH	NTH	POL	KU	SWD	UAE	UKR
	4.19	4.21	4.35	3.95	3.78	4.32	4.43	3.96	3.79	4.54	4.64	4.20	4.18		3.27	3.66	3.30

5.2.3 Power Transitions of Top Fifteen Nations

Another method of making comparisons between three power equations is to look into the power transitions of top-ranked nations over a number of years. To illustrate the change of power over time, I list the power rankings and scores of the top 15 nations (including the EC) from 1977 to 1993 in Tables 5.9-11.[46]

Power Transitions of Model 1

In Table 5.9, using Model 1, the EC and the United States exchange the first and second places. This seems to imply that member nations of the EC are more on an equal footing with the United States when they act as a collective entity than when they act as individual nations. This is perhaps more true in economic disputes. The United States experienced its lowest percentage (22.24%) of the total world production in 1983, and its highest (24.14%) in 1993. In terms of the U.S. share of world production, I do not see any sign of hegemonic decline, as claimed by some researchers.

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[46] In Tables 5.9-11, abbreviations of nation names are as follows: ARG = Argentina, AUL = Australia, BRA = Brazil, CAN = Canada, CHN = China, CZE = Czechoslovakia, EC = European Community, FRN = France, GDR = East Germany, GFR = West Germany, GMY = Germany, IND = India, INS = Indonesia, IRN = Iran, ITA = Italy, JPN = Japan, KOS = South Korea, KUW = Kuwait, NTH = The Netherlands, POL = Poland, RUS = Russia, SAU = Saudi Arabia, SPN = Spain, SWD = Sweden, UAE = The United Arab Emirates, UK = the United Kingdom/Great Britain, UKR = Ukraine, USA = The United States, and USR = The USSR/Soviet Union.

Moreover, excluding the EC, the top 14 nations produced 78.70% of the total world GNP in 1977, and 79.07% in 1993.[47] Although world production was concentrated in these nations, this again fails to support the claim of U.S. hegemonic decline, because the other top nations together did not gain as much ground as the United States did.

In regard to the gap between the United States and other leading nations, the results are mixed. Since 1983, the gap between the United States and the Soviet Union has gradually grown larger. Moreover, Japan superseded the Soviet Union in its share of the total world GNP and is quickly catching up with the United States. From 1977 to 1993, the difference between Japan and the United States has dropped from 12.89% to 7.94% of the total world GNP. The economic growth of China has been remarkable; its GNP rose from fourteenth place in 1977 to fourth place in 1993. There was little change, however, in the GNP gap between the United States and other major European powers, such as West Germany, France, Britain, and Italy. Surprisingly, there has been no big increase for Germany in its share of the total world GNP since West Germany's unification with East Germany. In addition, Mexico increased its GNP after 1982, while South Korea entered the top-15 list after 1989. Iran and Poland, however, dropped out of the list after 1982.

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[47] A simple formula to measure "concentration" is $\sum P_i^2$, denoting the sum of the squares of each unit's percentage share. For more, see Ray and Singer (1973). Here, the concept of concentration is applied in a general sense.

Power Transitions of Model 2

Table 5.10, based on Model 2, indicates that the top-15 power rankings were quite stable. Japan, France and Britain had no change at all in their rankings from 1977 to 1993. Contradictory to the hegemonic-decline argument, the power gap between the United States and other top nations has in fact become larger. The world power structure in 1993 was less concentrated than the one in 1977. Excluding the EC, the top 14 nations possessed 70.66% of the world power in 1977 and 65.38% in 1993. This substantial drop can be attributed to the dissolution of the USSR. In fact, the United States surpassed the USSR in 1983, and since then the United States has become increasingly strong. Even though China and Japan made remarkable gains, they were not as great as that of the United States, which was 3.68% of total world power. Recall that in Model 1, the EC is presented as being as powerful as the United States in terms of economic strength. But adding other elements to the power equation, as in Model 2, the EC was 25% less powerful in total strength than the United States. Since 1992, the United States has been the only remaining superpower and is considered to be "the greatest nation on earth." Model 2 clearly provides a more realistic description and much richer interpretations of national power than Model 1 does.

Power Transitions of Model 3

Table 5.11 presents some exaggerated effects of using the capacity index constructed by energy consumption per capita as a multiplier of Model 2. These results present the United States as about ten times stronger than Japan, and more than twenty times stronger than China.

TABLE 5.12 Average Power Scores from 1977 to 1993 Using Model 2

Rank	*Nation*	*Score*	*Rank*	*Nation*	*Score*
1	USA	1000.01	47	Peru	18.508
2	Soviet	975.113	48	Philippines	17.714
3	EC	760.958	49	Israel	17.414
4	China/Mainland	398.996	50	Vietnam	17.093
5	Russia	395.223	51	Bulgaria	17.060
6	Japan	316.149	52	North Korea	17.007
7	India	191.724	53	Colombia	16.889
8	Germany	191.444	54	Ethiopia	16.704
9	West Germany	188.425	55	Austria	16.466
10	France	167.090	56	Hungary	16.202
11	UK	135.577	57	Burma	15.143
12	Canada	121.730	58	Denmark	14.775
13	Brazil	121.021	59	Venezuela	14.676
14	Italy	112.649	60	Norway	14.176
15	Australia	80.859	61	Greece	14.003
16	Saudi Arabia	69.151	62	Syria	13.311
17	Iran	62.686	63	Uzbekistan	12.359
18	Poland	53.988	64	Finland	12.114
19	Indonesia	53.895	65	Chile	11.831
20	Spain	52.917	66	Angola	11.361
21	Mexico	48.222	67	Mongolia	11.345
22	Argentina	44.928	68	Morocco	10.705
23	East Germany	42.919	69	Tanzania	10.610
24	Iraq	41.810	70	Kuwait	10.525
25	Netherlands	35.775	71	Czech Republic	10.366
26	South Korea	33.256	72	Malaysia	10.355
27	Czechoslovakia	31.330	73	Niger	9.855
28	Ukraine	31.236	74	Mali	9.735
29	Pakistan	29.636	75	Chad	9.475
30	South Africa	28.760	76	Portugal	9.443
31	Romania	27.996	77	Bolivia	9.043
32	Turkey	27.327	78	Kenya	8.346
33	Sweden	26.871	79	Mozambique	8.005
34	Switzerland	26.745	80	Cuba	7.938
35	Algeria	26.698	81	Afghanistan	7.845
36	Egypt	26.641	82	United Arab Emirates	7.838
37	China/Taiwan	25.262	83	Yemen (United)	7.758
38	Nigeria	24.851	84	Serbia & Montenegro	7.646
39	Belgium	24.230	85	Belarus	7.626
40	Kazakhstan	23.280	86	Mauritania	7.499
41	Libya	22.930	87	Zambia	6.725
42	Zaire	22.252	88	New Zeal	6.722
43	Sudan	21.903	89	Madagascar	6.101
44	Bangladesh	21.464	90	Cameroon	6.014
45	Thailand	21.307	91	Somalia	5.600
46	Yugoslavia	19.942	92	Namibia	5.587

TABLE 5.12 (cont'd)

Rank	*Nation*	*Score*	*Rank*	*Nation*	*Score*
93	Nicaragua	5.293	139	Latvia	1.822
94	Singapore	5.276	140	Slovenia	1.795
95	Oman	5.275	141	Suriname	1.707
96	Zimbabwe	5.128	142	Benin	1.693
97	Ivory Coast	5.036	143	Guyana	1.618
98	Hong Kong	4.859	144	Rwanda	1.553
99	Ecuador	4.818	145	Haiti	1.521
100	Central Africa Republic	4.741	146	Panama	1.442
101	Uganda	4.664	147	Albania	1.344
102	Slovakia	4.603	148	Liberia	1.338
103	Turkmenistan	4.575	149	Armenia	1.320
104	Croatia	4.497	150	Costa Rica	1.295
105	Ireland	4.486	151	Sierra Leon	1.247
106	Ghana	4.406	152	Burundi	1.200
107	Botswana	4.339	153	Iceland	1.151
108	Sri Lanka	4.334	154	Togo	1.136
109	Nepal	4.301	155	Luxembourg	1.058
110	Papua New Guinea	4.077	156	Brunei	.924
111	Paraguay	3.976	157	Bahrain	.816
112	Tunisia	3.784	158	Jamaica	.808
113	North Yemen	3.590	159	Trinidad & Tobago	.775
114	Burkina Faso	3.527	160	Cyprus	.725
115	Guatemala	3.177	161	Macedonia	.711
116	Senegal	3.135	162	Lesotho	.601
117	Azerbaijan	3.063	163	Guinea-Bissau	.428
118	Uruguay	2.983	164	Fiji	.394
119	South Yemen	2.955	165	Mauritius	.366
120	Congo	2.949	166	West Bank/PLO	.347
121	Guinea	2.881	167	Swaziland	.317
122	Cambodia	2.831	168	Djibouti	.292
123	Bosnia-Herzegovina	2.807	169	Equatorial Guinea	.261
124	Jordan	2.765	170	Malta	.246
125	Kyrgyzstan	2.643	171	Gambia	.230
126	Tajikistan	2.575	172	Belize	.214
127	Gabon	2.503	173	Barbados	.197
128	Laos	2.481	174	Cape Verde	.118
129	Lithuania	2.389	175	North Mariana	.043
130	Malawi	2.246	176	Antigua	.040
131	Dominica Republic	2.158	177	Micronesia	.036
132	Moldova	2.075	178	Grenada	.035
133	El Salvador	2.051	179	Sao Tome	.033
134	Qatar	1.993	180	Vatican	.032
135	Lebanon	1.941	181	St. Vincent	.031
136	Georgia	1.938	182	St. Kitts	.029
137	Honduras	1.889	183	Marshall Islands	.025
138	Estonia	1.863	184	Palau	.025

TABLE 5.13 Individual Power Measures of the United States

	AREA	POPU	ME	GNP	ENGY	ME/GNP
1977	9363396	220.2	199864	3941796	11254	5.07%
1978	9363396	222.6	201563	4151285	11243	4.86%
1979	9363396	225.1	207338	4253199	11361	4.87%
1980	9363396	227.8	223757	4246405	10410	5.27%
1981	9371829	230.1	240969	4329068	10204	5.57%
1982	9371829	232.5	261692	4218095	9431	6.20%
1983	9372614	234.3	283173	4277854	9304	6.62%
1984	9372614	236.3	294819	4727189	9577	6.24%
1985	9372614	238.5	309766	4863824	9563	6.37%
1986	9372614	240.7	328198	4997707	9489	6.57%
1987	9372610	242.8	326272	5146263	9542	6.34%
1988	9372610	245.0	319578	5352591	10015	5.97%
1989	9372610	247.3	317286	5495644	10127	5.77%
1990	9372610	249.9	306190	5567171	9958	5.50%
1991	9372610	252.6	269968	5528657	10921	4.88%
1992	9372610	255.5	285924	5646034	10737	5.06%
1993	9372610	258.2	272902	5821183	10815	4.69%

Note: The units of measurement are squared kilometers for AREA, millions of persons for POPU, millions of dollars (1990 constant) for GNP and ME, and kilograms of coal equivalent per capita for ENGY.

TABLE 5.14 Individual Power Measures of the USSR

	AREA	POPU	ME	GNP	ENGY	ME/GNP
1977	22274000	259.6	289888	2263617	5309	12.81%
1978	22274000	261.9	294417	2348545	5387	12.54%
1979	22274000	264.1	299966	2357604	5558	12.72%
1980	22274900	266.4	308119	2394972	5595	12.87%
1981	22274900	268.7	311403	2432341	5738	12.80%
1982	22402200	271.1	316952	2488959	5768	12.73%
1983	22402200	273.6	325630	2501605	5900	13.02%
1984	22402076	276.3	327923	2521779	5977	13.00%
1985	22402200	278.9	332600	2541036	6131	13.09%
1986	22402200	281.5	335993	2629069	6389	12.78%
1987	22402200	284.0	343145	2658414	6634	12.91%
1988	22402200	286.4	347822	2734525	6888	12.72%
1989	22402200	288.7	316185	2760202	6546	11.46%
1990	22402200	290.9	291976	2660248	6692	10.98%
1991	22402200	293.0	250436	2438331	6415	10.27%
1992	17075200	149.0	133333	798349	7357	16.70%
1993	17075200	149.3	104356	712884	6937	14.64%

Note: The numbers for 1992 and 1993 are for Russia. The units of measurement are squared kilometers for AREA, millions of persons for POPU, millions of dollars (1990 constant) for GNP and ME, and kilograms of coal equivalent per capita for ENGY.

TABLE 5.15 Individual Power Measures of the EC

	AREA	POPU	ME	GNP	ENGY	ME/GNP
1977	2256408	314.8	133998	4006969	4153	3.34%
1978	2256408	315.6	137435	4135433	4222	3.32%
1979	2256408	316.6	141600	4280125	4341	3.31%
1980	2256408	318.0	146776	4326998	4287	3.39%
1981	2256408	319.2	148898	4313564	4117	3.45%
1982	2256408	319.8	152197	4322580	3975	3.52%
1983	2256408	320.5	159019	4450134	3994	3.57%
1984	2261333	321.2	160027	4553077	4025	3.51%
1985	2256939	321.9	161123	4664869	4144	3.45%
1986	2256939	322.8	160341	4793416	4267	3.35%
1987	2254186	323.4	164478	4925273	4239	3.34%
1988	2254186	324.6	161412	5124723	4225	3.15%
1989	2258376	326.1	162359	5303439	4291	3.06%
1990	2254166	328.4	160810	5428152	4362	2.96%
1991	2362496	346.2	162882	5641834	5077	2.89%
1992	2362536	347.6	154466	5690903	4970	2.71%
1993	2362536	349.0	149001	5647327	4969	2.64%

Note: This table is based upon calculations of the data of the EC member nations, including UK, Ireland, Belgium, Netherlands, Luxembourg, France, Spain, Portugal, West Germany (Germany), Italy, Greece, and Denmark. The units of measurement are squared kilometers for AREA, millions of persons for POPU, millions of dollars (1990 constant) for GNP and ME, and kilograms of coal equivalent per capita for ENGY.

Moreover, Kuwait is presented as the fifteenth most powerful nation in 1990, and the United Arab Emirates as the thirteenth most powerful nation in 1991 and the fifteenth in 1992. These assessments seem to be so unrealistic as to rule out Model 3 as a proper presentation of power rankings.

To promote future studies on assessing national power, Table 5.12 lists the results of the relative capability index for all the entities included in this project, using the mean values of Model 2 from 1977 to 1993. To make the table readable, the scale is enlarged by 1,000 times, by assigning a base score of 1,000 to the United States.

5.3 MISCELLANEOUS RESULTS OF MEASURING POWER

In this section, I will examine individual power measures for the superpowers and the world total of individual power measures. I will assess the China-Taiwan problem and apply my previous results to predicting the power structure in the next century.

5.3.1 Three Big Brothers

The United States, the USSR, and the EC have been the three most prominent, powerful actors in world politics in the past few decades. Tables 5.13-15 list five individual elements of power and the ratio of military expenditure (ME) over gross national product (GNP) for these three entities.

Land Area

In 1977, during the Cold War period, the Soviet Union had a land area 2.38 times as large as that of the United States, and 9.87 times as large as that of the EC. The land

area of the United States is 4.15 times as large as that of the EC. In 1993, after the end of the Cold War period, the USSR, now Russia, had lost 23.78% of its territory, while the EC had gained 4.81% more land area as a result of the unification of Germany. As shown in Table 5.14, because the USSR's 23.78% land loss was accompanied by a 49.15% population loss and a 67.26% loss of GNP, one can infer that a great proportion of habitable and arable (in a word, valuable) land was lost as a result of the dissolution of the USSR. Table 5.15 also shows that the 4.81% land acquisition of the EC brought about an increase of only 5.42% in population (= 17.8 million people), and a moderate increase (3.937%) in GNP. In 1993, Russia, the successor of the Soviet Union, had a land area 1.82 times as large as that of the United States, and 7.23 times as large as that of the EC. The ratio of land area between the United States and the EC changed slightly, from 4.15 in 1977 to 3.97 in 1993.

Population

From 1977 to 1993, the U.S. population increased by 38 million people, or by 17.26%. The average annual growth rate in the U.S. population was 1.000%. As illustrated in Table 5.14, the Soviet population added 33.4 million people from 1977 to 1991 with an average annual growth rate of .868%. In 1992, Russia had a population only 50.85% as large as the Soviet population in 1991. Table 5.15 shows that from 1977 to 1993, the EC had an increase of 34.2 million people, with an average yearly growth rate of .650%. Note that in 1991, the unification of Germany contributed about 17.8 million people to the total population of the EC. Before 1991, the annual growth rate in

the EC population was .321%. It is apparent that the population growth rate of the EC is much smaller than those of the United States and the USSR.

Energy Consumption Per Capita

According to Tables 5.13-15, the average yearly energy consumption per capita was 10232.41 kilograms of equivalent coal for the United States, 6189.47 kilograms for the USSR, and 4332.83 kilograms for the EC. These statistics were much higher than the world average, which was 1935.35 kilograms, as displayed in Table 5.16. Since energy consumption per capita is highly correlated to the latitude or oil resources of nations, it would be misleading to infer that the efficiency of the United States in mobilizing and materializing potential power is, on average, 1.65 times as great as that of the USSR, or 2.36 times as great as that of the EC.

Gross National Product

During this 17-year span, the average annual growth rate of GNP was 2.503% for the United States, and 2.178% for the EC. According to Table 5.13, negative economic growth in the United States occurred in 1979-80, 1981-82, and 1990-91. As can be seen in Table 5.15, the EC experienced negative economic growth in 1980-81, and 1992-93. It should be noted, however, that the calculation of GNP is greatly affected by the mechanism of exchange rates. Moreover, the data here were produced after monetary conversion. The GNP accounts of the years containing negative growth as indicated above may well be surpluses in terms of the value of U.S. dollars or other currencies during those years.

Table 5.14 shows that from 1977 to 1991, the average GNP growth rate was .579% for the USSR. Note that from 1977 to 1989, it had an average growth rate of 1.675%. In the next two years, it had negative growth rates, -3.621% and -8.342%. In the transformation from the Soviet Union to Russia, the volume of GNP dropped to 32.74% of the previous GNP level in 1991. Moreover, Russia did not do well immediately after that; its GNP declined by 10.71% from 1992 to 1993.

Military Expenditures

From Table 5.13-15, we can see a trend regarding military expenditures of the United States, the USSR, and the EC. That is, the amount of military spending increased gradually, starting in 1977, reached its peak around the mid-1980s, and then decreased in the early 1990s. The year with the highest level of military expenditures was 1986 for the U.S., 1988 for the USSR, and 1987 for the EC. In most years, the Soviet spent twice as much as the EC. After 1977, the spending gap between the United States and the USSR narrowed; in the mid-1980s, the United States caught up with the USSR and reached approximately the same spending level. After the abrupt end of the Cold-War period, some scholars have asserted that the Soviet military estimates were often overestimated, but by how much remains a mystery, even with 20-20 hindsight.

The Ratio of Military Expenditure to GNP

As suggested in Tables 5.13-15, the Soviet had the highest ratio of ME/GNP (about 12.83% on average) followed by 5.63% for the United States and 3.23% for the EC. Here we can see the predicament of the USSR. With its smaller and slower

economy, the USSR did itself a disservice by spending too great a proportion of its GNP on the military sector. The loss of its satellite republics seemed to pour fuel on the fire. In 1992, although Russia's military expenditure was reduced to 53.24% of the USSR level, its GNP shrank to 32.74% of the previous level. As a result, the ratio of ME/GNP was raised to 16.70%. The Russian government was hard-pressed to find money to rejuvenate its ailing economy.

In regard to the NATO defense, an important issue is burden sharing. As can be seen in Tables 5.13 and 5.15, the United States and the EC have about the same size economy and growth rate. But, the United States has a ratio of ME/GNP 1.74 times as great as that of the EC. There have been debates concerning the fairness of cost sharing between Western European countries and the United States in upholding the collective security in Europe.

5.3.2 World Facts

Table 5.16 shows individual power measures and the ratio of ME/GNP for the world total. The total world area should be stable and close to a constant over years. The variation of the present data may result from the process of aggregating all individual nation's data in *The World Factbook.*

From 1977 to 1993, the world population increased by 30.72%. On average, the annual population growth rate was 1.691%. The only year with a negative growth was 1984. Note that population growth takes on the exponential functional form. At the rate of 1.691%, the world population could double in 41.34 years.

TABLE 5.16 Individual Power Measures of the World Total

	AREA	POPU	ME	GNP	ENGY	ME/GNP
1977	135419803	4240.1	904738	16611337	1970	5.45%
1978	135594879	4313.1	927383	17236479	1991	5.38%
1979	135610765	4389.0	933935	17839596	2019	5.24%
1980	135612178	4465.8	975032	18222372	1955	5.35%
1981	135628288	4544.1	1005046	18465380	1893	5.44%
1982	135749903	4624.5	1058091	18503342	1825	5.72%
1983	135892618	4783.3	1093187	19234613	1820	5.68%
1984	136040002	4763.3	1108827	20162036	1859	5.50%
1985	135869957	4844.8	1127187	20823413	1888	5.41%
1986	135860722	4929.4	1152696	21455668	1896	5.37%
1987	135779643	5016.4	1153512	22174296	1921	5.20%
1988	135874252	5105.1	1145121	23158994	1959	4.94%
1989	135888509	5193.2	1106358	23843069	1957	4.64%
1990	135886299	5284.1	1078421	24209192	1932	4.45%
1991	135886219	5369.8	982851	24323257	2029	4.04%
1992	135470048	5455.4	890946	23714171	1993	3.76%
1993	135584176	5542.5	817910	24112392	1994	3.39%

Note: The units of measurement are squared kilometers for AREA, millions of persons for POPU, millions of dollars (1990 constant) for GNP and ME, and kilograms of coal equivalent per capita for ENGY. The data of ENGY is from *Energy Statistics Yearbook* of various years. The remaining data is the aggregated sum of individual nation's data with replacements of missing values. To avoid double counting, the EC data is excluded in calculations.

TABLE 5.17 The Rich Get Richer, and the Poor Get Poorer

	GNP	POPU	GNP per capita	ΔGNP per capita
World				
1977	16611337	4240.1	3917.67	
1993	24112392	5542.5	4350.45	432.78
USA				
1977	3941796	220.2	17900.98	
1993	5821183	258.2	22545.25	4644.27
EC				
1977	4006969	314.8	12728.62	
1993	5647327	349.0	16181.45	3452.83
Japan				
1977	1800476	113.9	15807.52	
1993	3906465	124.7	31326.90	15519.38
All other nations				
1977	6862096	3591.2	1910.81	
1993	8737417	4810.6	1816.28	- 94.53

Note: The units of measurement are millions of dollars (1990 constant) for GNP and millions of persons for POPU.

From 1977 to 1993, world production (GNP) increased every year but 1991-92. The average annual GNP growth rate was 2.373%. Total world military expenditures peaked in 1987, and notably, the expenditures in both 1992 and 1993 were even lower than those in 1977. Moreover, the ratio of ME/GNP reached its height in 1982, and then declined steadily in the following years. The average ratio of ME/GNP for the whole world is 5.00%. The average energy consumption per capita of the whole world, ranging from 1825 to 2029 kilograms of coal equivalent per person, displayed little fluctuation. Individual raw data indicates, however, that a great number of lesser developed nations had energy consumption per capita far below the world average, while as mentioned earlier, the United States, the USSR, and the EC had energy consumption per capita ranging from two to five times the world average.

Overall, the good news was a considerable drop in world military expenditures—obviously some nations who had high military spending decided to give themselves a break in the arms races, as they approached the 1990s. The bad news was related to population growth. First, the rich got richer and the poor got poorer. Table 5.17 compares GNPs per capita between the three largest economies and the rest of the world. The increase of the world GNP per capita from 1977 to 1993 was $432.78 (1990 constant), while the volumes of growth in GNP per capita for the three largest economies, the United States, the EC, and Japan, were $4,644.27, $3,452.83, and $15,519.38, respectively. The rest of the world, excluding these three entities, actually had negative growth of $94.53, dropping from $1,910.81 in 1977 to $1,816.28 in 1993. If one excludes other Western industrialized nations, Newly Industrializing Countries (NICS, e.g., Hong Kong, Singapore, South Korea, and Taiwan), OPEC members, and

other fast-growing economies, the level of GNP per capita for the remaining countries decreased, and their negative growth rate increased. Taking into account the higher population growth rates often occurring in the lesser developed countries, it is fair to say that the standards of living in these countries were well below the world average, and that there were more people living in poverty in 1993 than in 1977. This evidence simply supports the North/South argument that the widening gap of economic development between the rich and the poor is real. The wealth of nations is disproportionately distributed; this phenomenon shows no signs of improvement, and in fact is getting worse.

Another issue related to population growth is environmental sustainability, which may be outpaced by economic development (Brown 1995). According to my data, from 1977 to 1993, China's population maintained a level slightly higher than 20% of the total world population, its GNP increased 7.64 times, and its GNP per capita increased 5.93 times. (See Table 5.18.) In such a densely populated country, the dramatic increase in consumers' power may have an enormous impact on the balanced ecosystem of natural resources (e.g., food and water supply) as a whole. The same can be said about the gigantic Japanese appetite for fishery resources when its GNP per capita doubled from 1977 to 1993. The impact of economic development on environmental sustainability is a long-term, complicated problem, and its solution may require preventive resource planning and management, inducements offered through domestic public policy to slow down population growth and to modify consumer's behavior, and international cooperation to adopt more efficient and environmentally sound technologies.

TABLE 5.18 Hypothetical Economic Impacts If China and Taiwan Were United

		1977	*1978*	*1979*	*1980*	*1981*	*1982*
China	GNP	217189	244366	261126	278338	290907	318310
	POPU	946.1	958.8	971.8	983.4	994.9	1008.2
	GNP/POPU	230	255	269	283	292	316
Taiwan	GNP	50549	57581	62450	66901	70717	73049
	POPU	16.8	17.1	17.5	17.8	18.1	18.4
	GNP/POPU	3009	3367	3569	3758	3907	3970
United	GNP	267738	301947	323576	345239	361624	391359
	POPU	962.9	975.9	989.3	1001.2	1013.0	1026.6
	GNP/POPU	278	309	327	345	357	381
		1983	*1984*	*1985*	*1986*	*1987*	*1988*
China	GNP	720037	826135	931683	1006878	1116919	1243466
	POPU	1027.5	1040.4	1054.2	1069.2	1086.9	1104.5
	GNP/POPU	701	794	884	942	1028	1126
Taiwan	GNP	93077	103806	109583	123430	138010	148831
	POPU	18.8	19.1	19.3	19.6	19.8	20.0
	GNP/POPU	4951	5435	5678	6297	6970	7442
United	GNP	813114	929941	1041266	1130308	1254929	1392297
	POPU	1046.3	1059.5	1073.5	1088.8	1106.7	1124.5
	GNP/POPU	777	878	970	1038	1134	1238
		1989	*1990*	*1991*	*1992*	*1993*	
China	GNP	1297570	1350757	1461715	1657955	1877121	
	POPU	1120.7	1136.6	1151.4	1164.8	1177.6	
	GNP/POPU	1158	1188	1270	1423	1594	
Taiwan	GNP	159743	167813	179917	190738	202384	
	POPU	20.2	20.4	20.7	20.9	21.1	
	GNP/POPU	7908	8226	8692	9126	9592	
United	GNP	1457313	1518570	1641632	1848693	2079505	
	POPU	1140.9	1157.0	1172.1	1185.7	1198.7	
	GNP/POPU	1277	1313	1401	1559	1735	

Note: GNP = gross national product (unit: one million 1990 constant U.S. dollars), POPU = population (unit: one million people), and GNP/POPU = GNP per capita.

5.3.3 Power Games

The China-Taiwan Problem

High-level officials of The People's Republic of China have repeatedly said that the Taiwan problem is the *number one* issue in Sino-American relations. China's insistence on unification with Taiwan can be ascribed to its desire for sovereignty and domestic unity, and to nationalism, historical and cultural bonds, strategic concerns, geopolitics, economic development, and so forth. Here I will attempt to explore the economic aspects of unifying China and Taiwan. Utilizing the data at hand about individual power measures, I can assess the immediate impact of economic gains for both parties if China and Taiwan had been unified in any given year from 1977 to 1993.

Table 5.18 shows the data for GNP, population, and GNP per capita for China, Taiwan, and the hypothetical situations if they were unified in a given year. In terms of critical mass, using the latest numbers in 1993, China's land area was 266.73 times as large as Taiwan's, and its population was 55.81 times as large as Taiwan's. In regard to economic development, in 1993, China's volume of GNP was 9.28 times as large as Taiwan's, but its GNP per capita was one sixth as large as Taiwan's, as can be seen in Table 5.18. If China and Taiwan had been unified in 1993, China would have had an increase of 8.85% in GNP per capita (from $1,594 to $1,735, 1990 constant), while Taiwan would have had a decrease of 81.91% in GNP per capita (from $9,592 to $1,735). In 1977, China's GNP was 4.30 times as large as Taiwan's, while its GNP per capita was about one-thirteenth of Taiwan's. Moreover, according to Table 5.18, if China and Taiwan had been unified in 1977, China would have had an increase of 20.87% in GNP

per capita (from $230 to $278), while Taiwan would have had a decrease of 90.76% in GNP per capita (from $3,009 to $278).

We can arrive at several general conclusions based on Table 5.18. First, in terms of the growth rate in GNP, China performed better than Taiwan during the period from 1977 to 1993. Second, as time passed, economic incentives at the aggregate level for China to take over Taiwan were mixed. On the positive side, Taiwan almost quadrupled its GNP during the 17-year span, from 50,549 to 202,384 million U.S. dollars. On the negative side, the unification in 1977 would have brought China an increase of about a quarter of its GNP, while the unification in 1993 would have brought it an increment of only about one-ninth of its GNP. In terms of percentages, the incentive of upgrading GNP through unification became less appealing, although the net gains in GNP per se would still have been attractive. Third, in regard to the improvement in the standard of living, the unification in 1977 would have added $48 or 20.87% to China's GNP per capita, while the unification in 1993 would have added $141 or 8.85%. Economic incentives for unification at the individual level in China can be interpreted as mixed. If one looks at the percentage improvement contributed to China's GNP per capita, one can say that the unification with Taiwan has become less attractive for people in China over time. In contrast, if one stresses the literal amount of monetary gains in China's GNP per capita, one can conclude that the economic drive for unification at the individual level remains strong. Fourth, as shown in Table 5.18, if Taiwan were unified with China in any given year from 1977 to 1993, there would be no immediate economic benefit, and the standard of living for the Taiwanese people would probably deteriorate. The unification problem between these two de facto regimes, which have coexisted for half a

century, is a much more complex subject. It will not be solved solely on the basis of economic factors. The comparisons above are somewhat superficial and simply indicate that the economic gap between China and Taiwan remains substantial, even though it was greatly narrowed in the period before the early 1990s.

Who Will Be the Next Superpower and When ?

The collapse of the Soviet Union, following the tearing down of the Berlin Wall and the dissolution of the Eastern European bloc, not only put the Cold War period to an end, but also brought fundamental changes to the international system. Since then, the claim that the United States is the greatest (or most powerful) nation on earth is valid and is supported by the power equation, Model 2, of this project. A lively debate is presented in a special series of *International Security*, on the question, "Should the U.S. strive to maintain its primacy?" (Huntington 1993; Jervis 1993; Layne 1993). As long as the relationship between polarity and peace (or war) remains a puzzle, the controversy with regard to American primacy will be alive until the emergence of the next superpower. Here I will attempt to answer a more practical question, "Who will be the next superpower, and when?"

Table 5.19 shows the predictions of *The Economist* about the international power structure in the next century. As can be seen, the criteria for power assessment include a variety of categories: (1) long-range military power, (2) efficient foreign-policy machinery, (3) public support for vigorous foreign policy, and (4) material interest abroad. Each category is weighted on a scale from 0 to 5. Then the scores of each category are added together to obtain an aggregate score.

TABLE 5.19 World Power Structure in the Next Century

A Rough Guide to Geopolitica

Power c.2030: estimates of probability, 0 - 5

	China	'Islam'	Russia	Japan	US	Europe + US	Europe
Long-range military power	4	0*	3	1	5	5	2
Efficient foreign-policy machinery	3	0	1	3	4	4	1
Public support for vigorous foreign policy	3	2	1	1	2	2	2
Material interests abroad	3	2	3	4	3	4	4
Total	**13**	**4**	**8**	**9**	**14**	**15**	**9**

*Some individual Muslim states will have missile forces

Source: *The Economist*, 3 January, 1998, 18.

Based upon Table 5.19, it is predicted that a multipolar international system (according to my definition of a superpower), with the United States and China on top, will be established in the year 2030. The problems with Table 5.19, however, are that the designated categories do not include some basic elements of national power, such as critical mass and GNP, and that the measurement based on the crude 0-5 scale do not yield precise results.

Instead, to achieve a power projection for the century to come, I suggest an application of the results in Table 5.10, which shows the top fifteen power rankings of Model 2 from 1977 to 1993. It is obvious that the likely candidates for the next superpower are the EC, Russia, China, and Japan. Here I examine the cases of China and Japan, which exhibited the most remarkable growth rate in national power during the seventeen-year span. The formula, similar to the arithmetic of compound interest, used

for predicting when China will catch up with the United States in the power struggle ahead can be expressed as

$$P_{US} \times (1+\delta_{US})^{\alpha} = P_{China} \times (1+\delta_{China})^{\alpha}, \qquad (5.1)$$

where P's are the corresponding power scores in 1993, given a world total of 200, in Table 5.10, δ's are the average growth rates of national power, 1977-93, in Table 5.10, and α is the exact length of years required to make the two sides equal. By inserting relevant numbers, Equation 5.1 becomes

$$42.20 \times (1 + .01238)^{\alpha} = 18.83 \times (1 + .02672)^{\alpha}. \qquad (5.2)$$

After solving for the equation, we obtain $\alpha = 57.37$, which means that it will take China 57.37 years to outperform the United States in the race for national power. In other words, we expect this to happen in the year 2050, if both the United States and China progress at a pace following the average growth rate of their national power in the 1980s and early 1990s, 1.238% and 2.672%, respectively.

What if China had been united with both Hong Kong and Taiwan in 1993? According to Table 5.12, on average, Hong Kong would have added 1.218% to China's national power, and Taiwan would have added 6.331%. Then Equation 5.2 could be revised as

$$42.20 \times (1 + .01238)^{\alpha} = 18.83 \times (1 + .01218 + .06331) \times (1 + .02672)^{\alpha}. \qquad (5.3)$$

By solving for Equation 5.3, we could obtain $\alpha = 52.20$. This means that China could catch up with the United States in the race for national power five years earlier, in the year 2045.

Note that Model 2, a composite power index, comprises critical mass (area and population), military expenditure, and GNP. Since critical mass is relatively stable and military expenditure is a portion of GNP, GNP is probably the most volatile and critical element of national power. Therefore, it is essential to look at the level and growth rate of the GNPs of the United States and China. In 1977, the United States had a GNP 18.15 times as great as that of China, while in 1993, the United States had a GNP 3.10 times as large. The average growth rate of GNP from 1977 to 1993 was 2.503% for the United States and 16.703% for China. According to Rostow's (1960) classic work on economic growth, China's economy has been progressing on the road to maturity in the past two decades. Nevertheless, I have great doubts about how well and for how long China can maintain its economic growth at the astonishing rate of more than 10% per year on average, particularly if I accept the Rostow contention that "deceleration is the normal optimum path of a sector, due to a variety of factors operating on it, from the side of both supply and demand" (1960, 13). Therefore, my prediction that China will become the next superpower in the year 2050 is likely to be overly optimistic.

Similarly, in the case of Japan, by inserting pertinent numbers in Equation 5.1, the equation can be written as

$$42.20 \times (1 + .01238)^{\alpha} = 14.76 \times (1 + .02901)^{\alpha}. \qquad (5.4)$$

After solving for Equation 5.4, we obtain $\alpha = 64.47$. This implies that Japan could outrun the United States in the year 2057, if both nations maintain the average national-power growth rates that they achieved from 1977 to 1993 (1.238% and 2.901%, respectively). The GNP level of the United States was 2.19 times as large as that of

Japan in 1977, and 1.49 times as large in 1993. The average yearly growth rate of the U.S. GNP was 2.503%, while Japan's was 5.045%. Given that Japan has a mature economy, it seems to have a better chance than does China of becoming the next superpower, perhaps in a shorter time.

Based upon my predictions, both China and Japan will achieve the status of superpowers, or at least become as powerful as the United States in the mid-twenty-first century, if they keep doing as well as they did in the 1980s and early 1990s. I will not go so far as to speculate about how large a growth rate of national power or GNP would be required for China or Japan, if either is determined to catch up with the United States in a shorter period, say, thirty years. Anything could happen in a few decades; therefore, my predictions may come true earlier, later, or never. The reasons I excluded the EC and Russia as the best candidates for being the next superpower are as follows: Without a doubt, the EC as a whole is better situated than is China or Japan to gain on the United States. As shown in Table 5.10, in the mid-1980s, the EC gradually lost its status as a superpower, according to my definition of a superpower as a power stronger than the combination of any two great powers. From 1977 to 1993, the average yearly growth rate of national power for the EC was .325%, in contrast to a growth rate of 1.238% for the United States. The EC will always lag behind the United States in the race for national power, if both maintain these average growth rates. Moreover, Russia's economy has been in a very bad condition in recent years. There are multifarious, knotty problems associated with the transformation from a communist system to a capitalist market economy. At this point, I do not envision Russia's being back on its feet soon.

CONCLUSION

My exposition shows that Model 2 works better in terms of theoretical relevance and strategic implications than does either Model 1 or Model 3. Economic strength is only one ingredient of power. The power ranking in Model 1 is biased in favor of those nations with strong economies and against those nations who have weak economies but have other strengths. The variable of energy consumption per capita tends to be related to the latitude of a nation and to whether or not it has oil resources. In Model 3, the capacity index based on energy consumption per capita yields some exaggerated and unreasonable results that contradict common sense and do not correspond to the real-world context. In contrast, Model 2 provides insight for interpreting the power structure before and after the end of Cold War, and has realistic strategic implications. Given this excellent performance by Model 2, I speculate that the capacity of a nation has already contributed to its achieving and maintaining its levels of productivity (i.e., GNP) and force (i.e., military expenditure). That is to say, the process of maintaining high productivity or large armed forces involves the intangible factors that show how capable a nation is of mobilizing resources and realizing its potential power. For this reason, even without including a capacity index, Model 2 is sufficient to provide a valid measure of national power.

In some sense, power, like beauty, is in the eye of the beholder. In reality, experimentation with one-on-one, all-out conflicts between nations, as the acid test for power equations, is virtually impossible (and indeed, unthinkable). Therefore, some would argue that the quest for a truthful representation of national power is doomed to be futile. As demonstrated above, however, through interpretive filters—criteria such as

theoretical import and strategic implications—I was able to evaluate the explanatory efficacy of different power equations. The next step is to apply Model 2 to cross-national studies or power-related analyses to assess its empirical performance. Perhaps after doing that, I will be able to determine whether or not Model 2 is truly useful, and possibly have a better grasp of the nature of power.

CHAPTER SIX

RESULTS II: BASIC FACTS IN U.S. FOREIGN POLICY

This chapter presents the basic facts from the outcome of coding the events in *Foreign Affairs Chronology*. It is in principle concerned with the frequency distribution of individual variables. Descriptive statistics for the variables included in the multivariate analysis will be provided in Chapter 8. Because of limited space, I will report here only those variables of interest to my research or those with substantive implications. A complete account of raw frequencies and percentages is incorporated into the coding scheme. (See Appendix I.) Information such as variable names (in uppercase) and descriptions of variables will be provided. Facts are not always transparent or obvious. Our general instincts about, or everyday impressions of, the multifarious, sometimes amorphous, real world, even if on the right track, tend to be vague and fragmentary. To create a clearer picture of U.S. foreign policy, I will proceed through an organized, summarized exhibition of what happened *in* the events from 1978 to 1994.

6.1 TIME, SPACE, AND ACTORS

6.1.1 Event Counts Over Time

The variables YEAR, MONTH and DAY represent the date of an event. The DAY variable, concerning the day of the month in which an event occurred, is too trivial to deserve any attention. Table 6.1 depicts the distribution of event counts over each of the twelve months and of seventeen years.

TABLE 6.1 Events Count over Time

Variable Names: YEAR (row) and MONTH (column)

	1	2	3	4	5	6	7	8	9	10	11	12	Sub-Total
1978	33	29	29	14	38	23	27	18	14	19	27	29	300
1979	41	34	32	27	31	37	24	41	28	34	27	31	387
1980	32	35	14	19	25	46	20	12	25	28	11	20	287
1981	29	28	31	30	29	34	38	28	19	30	32	29	357
1982	21	14	20	42	16	45	21	20	31	28	31	40	329
1983	28	39	16	9	17	15	16	15	19	11	24	13	222
1984	29	21	18	12	12	19	8	8	15	18	13	15	188
1985	13	18	18	13	17	6	23	15	20	15	14	17	189
1986	21	14	11	21	18	12	17	19	16	16	16	6	187
1987	24	16	11	9	11	21	13	9	26	8	14	11	173
1988	18	10	13	16	11	17	9	7	7	10	2	9	129
1989	5	12	7	12	16	8	17	5	18	15	10	23	148
1990	18	21	13	18	23	13	11	13	8	10	16	9	173
1991	26	17	23	21	18	8	22	8	18	18	16	12	207
1992	8	30	1	16	17	7	13	14	11	8	4	6	135
1993	11	13	3	20	14	14	8	7	16	9	7	4	126
1994	8	17	15	10	12	7	26	12	13	19	7	6	152
Sub-Total	365	368	275	309	325	332	313	251	304	296	271	280	Total =3,689

Too much should not be read into this table, however, because the question of the definition of an event is still unanswered. Moreover, there are potential biases associated with the way *Foreign Affairs Chronology* was constructed, as will be shown in the discussions of validity in Chapter 9. A quick glance at individual counts in Table 6.1 indicates that no particular month has very few or a great number of events over the years. On average, the slow months for U.S. foreign policy are March, August, November and December, while the busy months are January, February, May and June. The relatively low level of activity in August, November and December can be ascribed to summer vacations before Labor Day and the holiday season at the end of the year. I have no explanation, however, as to why March is slow and some other months are busy. In regard to annual event counts, my data indicate that the number of events dropped considerably after 1982. The year with the most events was 1979, with a total of 387, while the year with the fewest events was 1993, with a total of 126. Notably, the last year of a president's term has fewer events than any of the first three years. This seems to be the case for Reagan's first and second terms, and for the terms of Bush and Carter. (There is no data, however, for 1977, the first year of Carter's term.) Therefore, I construct the following proposition with caution:

PROPOSITION 6.1: *In terms of events count, the U.S. presidency is less active in foreign policy in the last year than in the three previous years.*

TABLE 6.2 Frequencies of Variables Resulting from Manipulating Temporal Factors

Values and Categories			N	%
(a) Variable Name: PCOLDWAR				
0	Cold War era		2,873	77.9
1	Post-Cold War era		816	22.1
		Total =	3,689	100.0
(b) Variable Name: ELECTION				
0	Nonelection year		2,950	80.0
1	Election year		739	20.0
		Total =	3,689	100.0
(c) Variable Name: ADMINIST				
1	Carter		974	26.4
2	Reagan I		1,096	29.7
3	Reagan II		678	18.4
4	Bush		663	18.0
5	Clinton		278	7.5
		Total =	3,689	100.0
(d) Variable Name: PARTY				
1	Republican		2,437	66.1
2	Democratic		1,252	33.9
		Total =	3,689	100.0

6.1.2 Temporal Variables Using Different Time Lines

The following variables use various time lines:

PCOLDWAR: the bifurcation between the Cold War and post-Cold War era, using the breaking down of the Berlin Wall as a cutoff point, where 0 = the Cold War era (before December, 1989) , and 1 = the post-Cold War era;

ELECTION: the years in which a presidential election takes place, where 0 = non-election year, and 1 = election year (1980, 1984, 1988, and 1992);

ADMINIST: various administrations in terms of presidency, using years as the cutoff points, where 1 = Carter, 2 = Reagan I, 3 = Reagan II, 4 = Bush, and 5 = Clinton; and

PARTY: the presidential party, where 1 = Republican, and 2 = Democratic.

The variables listed above are some of the temporal factors generated by manipulating the time frame. Their frequency distributions are presented in Table 6.2. As shown in Table 6.2.a, about 22% of the events occurred after the end of the Cold War period. From Table 6.2.b, it is apparent that in a four-year presidential term, the events of election years account for only one-fifth of all events, rather than one-fourth, as would be the case if the occurrence of events were random. This supports Proposition 6.1, which states that every administration tends to be less active in foreign policy in the last year of its term. According to Table 6.2.c, the administrations of Carter and Reagan I (seven years) account for more than 50 % of foreign policy events during the seventeen-year span. Assuming that the Carter administration in its first year was as active as in the next three years, I assert that Carter, rather than Reagan, Bush or Clinton, was the real *foreign policy* president. Table 6.2.d shows that foreign-policy-event occurrences with a Republican president in the oval office (= 2,437) were about twice as frequent as

occurrences under a Democratic president (= 1,252). In terms of events per year, Democratic presidents (= 250 events/year) were in fact more active in foreign policy than Republican presidents (203 events/year).

The dummy variables PCOLDWAR, ELECTION and PARTY will serve as independent variables in the subsequent analysis. The variable ADMINIST will be used to conduct a subsample analysis considering the possible differences between various presidencies in the conduct of foreign policy. It should be noted that the executive branch is not the only source of U.S. foreign policy; but without doubt it is the primary source. When using various administrations as a basis of comparison, I assume that sources other than the executive branch are responsible for a small proportion of U.S. foreign policy, and events initiated by these sources are evenly distributed over years.

6.1.3 Targets of U.S. Foreign Policy

TARGET is defined as the nation-state (with the exception of the EC) toward which U.S. foreign policy is directed. Among 268 political entities, including sovereign states, the EC, quasisovereign states, areas under trusteeship, and occupied or undetermined territories, only 164 entities were targets of one or more U.S. foreign policy acts. Although there are 180 or so UN member nations at the present time, there were still slightly more than a dozen nations that had either no interactions with the United States from 1978 to 1994, or interactions that were regarded as insignificant and thus excluded from the compiling process of *Foreign Affairs Chronology*. The distribution of event counts with regard to target nations reflects one important aspect of U.S. foreign policy: the weight of certain countries.

TABLE 6.3 Frequency of Individual Target Nations in U.S. Foreign Policy, 1978-94

TARGET	N	%	TARGET	N	%
USSR*	663	18.0	N. Korea	18	.5
(USSR	619	16.8)	Honduras	17	.5
(Russia	44	1.2)	Brazil	16	.4
Israel	239	6.5	Turkey	16	.4
Japan	143	3.9	Columbia	15	.4
China	131	3.6	Bolivia	15	.4
UK	124	3.4	Guatemala	14	.4
Iran	109	3.0	Namibia	14	.4
Nicaragua	104	2.8	Kuwait	13	.4
France	90	2.4	Afghanistan	13	.4
Germany*	88	2.4	Thailand	13	.4
(West Germany	65	1.8)	Ukraine	12	.3
(GMY/United	23	.6)	Peru	12	.3
Egypt	87	2.4	Australia	11	.3
South Africa	85	2.3	Costa Rica	11	.3
Iraq	82	2.2	Romania	11	.3
Canada	82	2.2	Serbia & Mont.	11	.3
Cuba	73	2.0	New Zealand	10	.3
El Salvador	71	1.9	Bosnia-Herzeg.	10	.3
Lebanon	56	1.5	Morocco	10	.3
Vietnam	55	1.5	Spain	10	.3
Italy	54	1.5	Greece	10	.3
South Korea	53	1.4	East Germany	10	.3
Saudi Arabia	48	1.3	Czechoslovakia	9	.2
Philippines	45	1.2	Hungary	9	.2
Mexico	42	1.1	Belgium	9	.2
Libya	41	1.1	Grenada	9	.2
Taiwan	40	1.1	Venezuela	9	.2
Poland	39	1.1	Sudan	9	.2
EC	39	1.1	Kazakhstan	9	.2
W. Bank/PLO	37	1.0	Ethiopia	9	.2
Haiti	37	1.0	Vatican	8	.2
Panama	37	1.0	Singapore	8	.2
Syria	35	.9	Liberia	7	.2
Zimbabwe	35	.9	Nigeria	7	.2
Somalia	31	.8	Mozambique	7	.2
Jordan	30	.8	Indonesia	7	.2
Argentina	26	.7	Ecuador	6	.2
Angola	24	.7	Netherlands	6	.2
Pakistan	23	.6	Chad	6	.2
India	21	.6	Zaire	6	.2
Cambodia	21	.6	Uganda	6	.2
Chile	21	.6	Kenya	6	.2

Note: Asterisk denotes that frequencies of the continuous entities are added together.

TABLE 6.3 Frequency of Individual Target Nations in U.S. Foreign Policy, 1978-94

TARGET	N	%	TARGET	N	%
USSR*	663	18.0	N. Korea	18	.5
(USSR	619	16.8)	Honduras	17	.5
(Russia	44	1.2)	Brazil	16	.4
Israel	239	6.5	Turkey	16	.4
Japan	143	3.9	Columbia	15	.4
China	131	3.6	Bolivia	15	.4
UK	124	3.4	Guatemala	14	.4
Iran	109	3.0	Namibia	14	.4
Nicaragua	104	2.8	Kuwait	13	.4
France	90	2.4	Afghanistan	13	.4
Germany*	88	2.4	Thailand	13	.4
(West Germany	65	1.8)	Ukraine	12	.3
(GMY/United	23	.6)	Peru	12	.3
Egypt	87	2.4	Australia	11	.3
South Africa	85	2.3	Costa Rica	11	.3
Iraq	82	2.2	Romania	11	.3
Canada	82	2.2	Serbia & Mont.	11	.3
Cuba	73	2.0	New Zealand	10	.3
El Salvador	71	1.9	Bosnia-Herzeg.	10	.3
Lebanon	56	1.5	Morocco	10	.3
Vietnam	55	1.5	Spain	10	.3
Italy	54	1.5	Greece	10	.3
South Korea	53	1.4	East Germany	10	.3
Saudi Arabia	48	1.3	Czechoslovakia	9	.2
Philippines	45	1.2	Hungary	9	.2
Mexico	42	1.1	Belgium	9	.2
Libya	41	1.1	Grenada	9	.2
Taiwan	40	1.1	Venezuela	9	.2
Poland	39	1.1	Sudan	9	.2
EC	39	1.1	Kazakhstan	9	.2
W. Bank/PLO	37	1.0	Ethiopia	9	.2
Haiti	37	1.0	Vatican	8	.2
Panama	37	1.0	Singapore	8	.2
Syria	35	.9	Liberia	7	.2
Zimbabwe	35	.9	Nigeria	7	.2
Somalia	31	.8	Mozambique	7	.2
Jordan	30	.8	Indonesia	7	.2
Argentina	26	.7	Ecuador	6	.2
Angola	24	.7	Netherlands	6	.2
Pakistan	23	.6	Chad	6	.2
India	21	.6	Zaire	6	.2
Cambodia	21	.6	Uganda	6	.2
Chile	21	.6	Kenya	6	.2

Note: Asterisk denotes that frequencies of the continuous entities are added together.

As revealed in Table 6.3, the most frequent target for U.S. foreign policy was the USSR (N = 663, 18% [Russia included]), and the second most frequent was Israel (239). The rest of the 15 most frequent receivers were Japan (143), China (131), UK (124), Iran (109), Nicaragua (104), France (90), Germany (88 [West Germany included]), Egypt (87), South Africa (85), Iraq (82), Canada (82), Cuba (73), and El Salvador (71). These top 15 most frequent receiving nations together accounted for 58.84% of U.S. foreign policy acts from 1978 to 1994, while the top 40 most frequent targets received 83.46% of U.S. action during that period. Accordingly, the remaining 200-plus entities received only 16.54% of U.S. foreign policy acts. This again confirms the characteristic of selective attention in U.S. foreign policy behavior.

There are several lessons to be learned from the numbers discussed above. First, the USSR was the most important target for U.S. foreign policy under the two-superpower structure in the Cold War era. Second, it is often said that there are no lasting friends or enemies in foreign affairs. Nevertheless, there are *important* friends and/or enemies. The frequent U.S. actions toward great powers highlight this point. If the international power structure resembles a hierarchical pyramid, then it makes sense for the United States to concentrate on powerful nations in the upper level. Third, the Middle East is a constant, overarching problem area that concerns the United States a great deal. Four out of the top fifteen receiving nations are from that region. Fourth, the backyard of the United States is also a constant focus. Four of the fifteen most frequent targets are located close to U.S. territory. Fifth, aside from the constancy previously described, U.S. foreign-policymakers are driven to meet occasional challenges or "crisis situations." If there had been no Iran hostage crisis, Central American insurgencies, or Persian Gulf

War, the number of U.S. acts toward Iran, Nicaragua, El Salvador or Iraq would have dropped substantially. As powerful as the United States is, its resources for foreign policy action are limited. This is the primary reason that U.S. foreign policy has to be selective. This selectivity depends upon both constancy and contingency.

6.1.4 Geographical Regions and U.S. Foreign Policy

The following variables are used to identify geographical regions:

REGION1: geographical regions in the COPDAB framework, where 0 = Central and North America, 1 = South America, 2 = Western Europe, 3 = Eastern Europe, Scandinavia and the Mediterranean, 4 = Central and Western Africa, 5 = Southern and Eastern Africa, 6 = Middle East and North Africa, 7 = East and South Asia, 8 = South East Asia, and 9 = The Pacific; and

REGION2: geographical regions classified by continent, where 1 = America, 2 = Europe, 3 = Africa, 4 = Asia, and 5 = Australia.

Table 6.4 describes the frequency distribution of U.S. foreign policy behavior toward different geographical regions and continents. As illustrated in Table 6.4.a, the important regions for U.S. foreign policy were Eastern Europe, Scandinavia, and the Mediterranean (N = 874), and the Middle East and North Africa (838), followed by Central and North America (512), East and South Asia (452), and Western Europe (428). The relatively unimportant regions for the United States were the Pacific (35), Central and Western Africa (66), South America (127), South East Asia (156), and Southern and Eastern Africa (201). As can be seen in Table 6.4.b, the importance of continents in U.S. foreign policy behavior followed a descending order: Europe, Asia, America, Africa and Australia.

TABLE 6.4 Event Counts by Geographical Region

Values and Categories		N	%	N/nations
(a) Variable Name: REGION1				
0	Central and North America	512	13.86	22.22
1	South America	127	3.44	10.58
2	Western Europe	428	11.60	25.93
3	Eastern Europe, Scandinavia and the Mediterranean	874	23.70	46.00
	(Excluding USSR and CIS	167	4.53	9.28)
4	Central and Western Africa	66	1.79	2.64
5	Southern and Eastern Africa	201	5.45	9.14
6	Middle East and North Africa	838	22.72	36.43
7	East and South Asia	452	12.26	28.25
8	South East Asia	156	4.23	17.33
9	The Pacific	35	.95	3.18
		Total = 3,689	100.00	
(b) Variable Name: REGION2				
1	America	639	17.30	18.23
2	Europe	1,302	35.30	37.15
3	Africa	421	11.42	7.94
4	Asia	1,292	35.03	30.76
5	Australia	35	.95	3.18
		Total = 3,689	100.00	

Note:

1. N = frequency of events, and N/nations = events count per nation.
2. The EC (N = 39) is included in Western Europe. Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, and Turkmenistan (N = 12, together) are included in the category of "Eastern Europe, Scandinavia and the Mediterranean" based on their association with the former USSR.
3. The group "Middle East and North Africa," including six nations belonging to the African continent, is broken down to facilitate the classification of continents.
4. The results of N/nations may vary if different denominators are used. The primary difficulty is associated with the dramatic change of political maps since 1989. Here, the number of nations in each group is calculated on the basis of sovereign states. The EC is excluded in the calculation process. The events count per nation for Eastern Europe or Europe as a whole will drop if the number of the Commonwealth of Independent States (CIS) is added to the denominator.

My evidence supports the general assertion that Africa is a "cold" area for U.S. foreign policy. If Egypt and South Africa were excluded, the remaining African countries would have an average of only 5 U.S. acts per nation during the 17-year span, in contrast to 37 U.S. acts per nation for European countries, and 31 U.S. acts per nation for Asian countries.

6.2 FOREIGN POLICY BEHAVIOR

The conceptualization and measurement of foreign policy behavior is at the heart of my inquiry. As mentioned earlier, there have been divergent developments in this field. If a group of researchers gathered to debate the question, "What is the most important perspective on foreign policy behavior?" one could hardly expect that a consensus would be reached at the end of the day. In particular, the outcome variables concerning foreign policy behavior have not attracted as much attention as the explanatory variables have (Hermann 1978, 25-7). This phenomenon has created a barrier to the evolution of the studies of international relations or foreign policy into a more systematic and coherent discipline.

In my account of foreign policy behavior, the coding scheme contains two major aspects: the costliness of foreign policy instruments (STACRAFT) and the affect toward the target (AFFECT, recoded from GESTURE). The concept of statecraft, borrowed from Baldwin (1985), is discussed in the earlier chapters. Because the concept of affect is first introduced here, however, I will clarify its role in the study of international relations. Dixon defines the expressed affect by a nation as "a government's 'feelings' of friendliness or hostility toward some external object or actor—it is easily adapted to other

properties embracing positive, neutral, and negative categories" (1983, 828). Examples in foreign policy studies employing the concept of affect are Hermann et al. (1982), Holsti et al. (1964), and Zinnes (1968).

As a matter of fact, the frequently seen cooperation/conflict scheme has two characteristics: orientation and magnitude. While the concept of statecraft signifies the magnitude of the cooperation/conflict phenomenon, the concept of affect denotes the orientation. As will be demonstrated later, the multiplication of STACRAFT by AFFECT creates a spectrum of various cooperation-conflict situations. I call the resulting index FACINDEX, shorthand for "a cooperation/conflict index based on coding of events recorded in *Foreign Affairs Chronology*." FACINDEX can be used as an alternative to, and may be more useful than, the COPDAB cooperation/conflict scale. Next I will summarize the frequency distributions of the dependent variables used in this project to characterize foreign policy behavior.

6.2.1 The Use of Statecraft

The dependent variables related to statecraft are the following:

STACRAFT: the costliness of foreign policy action, measured by the most costly instrument used, where 1 = least costly, 2 = second least costly, 3 = second most costly, and 4 = most costly;

PHYSICAL: the presence of physical or verbal action, transformed from STACRAFT, where 0 = verbal action (propaganda/diplomacy), and 1 = physical action (economics/force); and

MULTOOLS: the count of multiple types of policy tools used, from 1 to 4, literally.

TABLE 6.5 Frequency Distributions Concerning the Use of Foreign Policy Instruments

Values and Categories		N	%
(a) Variable Name: STACRAFT			
1	Least costly	964	26.1
2	Second least costly	1,945	52.7
3	Second most costly	361	9.8
4	Most costly	419	11.4
		Total = 3,689	100.0
(b) Variable Name: PHYSICAL			
0	Verbal action	2,909	78.9
1	Physical action	780	21.1
		Total = 3,689	100.0
(c) Variable Name: MULTOOLS			
1	One type of policy tools used	2,766	75.0
2	Two types of policy tools used	798	21.6
3	Three types of policy tools used	111	3.0
4	Four types of policy tools used	14	.4
		Total = 3,689	100.0
(d) Variable Name: PROPAGAN			
0	Absence of propaganda instrument	1,990	54.0
1	Presence of propaganda instrument	1,699	46.0
		Total = 3,689	100.0
(e) Variable Name: DIPLOMACY			
0	Absence of diplomatic instrument	1,457	39.5
1	Presence of diplomatic instrument	2,232	60.5
		Total = 3,689	100.0
(f) Variable Name: ECONOMIC			
0	Absence of economic instrument	3,288	89.1
1	Presence of economic instrument	401	10.9
		Total = 3,689	100.0
(g) Variable Name: MILITARY			
0	Absence of military instrument	3,270	88.6
1	Presence of military instrument	419	11.4
		Total = 3,689	100.0

The most costly instrument used in an event represents the overall costs involved. This formula does not distinguish between the costs of individual policy items under the same type of statecraft. For example, a negative use of military statecraft may involve *military hostile actions*, *small scale military acts*, *limited war acts*, and *extensive war*, from the least to the most expensive, as suggested in the COPDAB project (Azar 1993). The STACRAFT variable groups all the military policy items under the category of military statecraft, and treats them as incurring the same costs.

Moreover, when two events contain the same primary (i.e., most costly) type of statecraft and also other secondary, but different, types of statecraft, this formula bypasses a detailed comparison between the secondary types of statecraft used in either event. For example, it does not distinguish a combined use of military and economic tools from a combined use of military and diplomatic (or propaganda) tools. As I argued earlier, however, the ordinal nature of the STACRAFT variable holds under most circumstances.

Table 6.5.a presents the frequency distribution of STACRAFT. Diplomacy was the most frequently used type of policy instrument. It was used in 1,945 out of 3,689 cases (= 52.7%). Propaganda, which was used in 964 of these cases (= 26.1%), was the second most frequently used instrument. Economics and force were the primary instruments in 361 and 419 cases (= 9.8% and 11.4%) respectively.

In defining the variable PHYSICAL, I draw a rough distinction between verbal and physical action. Verbal action consists of propaganda and diplomacy, while physical action comprises economics and force. As shown in Table 6.5.b, only slightly more than one-fifth of U.S. foreign policy acts were physical, involving economic or military

policies. Verbal action, or "word politics," which includes propaganda and diplomacy, was used in the majority (N = 2,909, 78.9%) of U.S. foreign policy acts.

The gravity or salience of an event may sometimes require the application of multiple tools. The variable MULTOOLS accounts for these situations. The frequency distribution of MULTOOLS is displayed in Table 6.5.c. In the majority of events, a single type of foreign policy tool was used (N = 2,766, 75.0%). More than one-fifth of events, however, involved the use of two types of policy instruments (N = 798, 21.6%). The use of three or four types of policy options was much less frequent, accounting for 111 and 14 cases (= 3.0% and .4%), respectively. The frequency of MULTOOLS appears to resemble the distribution of a rare count variable. In light of this, a Poisson model will be analyzed in Chapter 8 to determine the factors causing the use of multiple types of policy tools.

6.2.2 The Adoption of Individual Foreign Policy Instruments

The following variables identify the use of four individual foreign policy instruments:

PROPAGAN: the presence of propaganda instrument, where 0 = no, and 1 = yes;

DIPLOMAC: the presence of diplomatic instrument, where 0 = no, and 1 = yes;

ECONOMIC: the presence of economic instrument, where 0 = no, and 1 = yes;

MILITARY: the presence of military instrument, where 0 = no, and 1 = yes.

At the bottom half of Table 6.5, the frequencies of individual policy items used are listed. As displayed in Table 6.5.e, diplomatic instruments, the most frequently used,

appeared in 2,232 cases (= 60.5%). As shown in Table 6.5.d, propaganda was the second most frequently used instrument, appearing in a total of 1,699 cases (= 46.0%). Tables 6.5.f and 6.5.g show that military policy tools were used in 419 cases (= 11.4%), while economic policy tools were used in 401 cases (= 10.9%).

Table 6.6 illustrates the frequency distribution of different scenarios in applying four types of statecraft. Basically, Table 6.6 is a more detailed description of the STACRAFT and MULTOOLS variables. Most significantly, the use of a single propaganda or diplomatic instrument (N = 964, 1,584) occurs in about 70% of all events. Moreover, the combined use of both economic and military instruments is relatively unusual, accounting for only 1.1% of all the valid cases.

Scenario #1 in Table 6.6, the equivalent of doing nothing, deserves some discussion. Although events with no U.S. action were automatically ruled out in my process of collecting U.S.-related event records, they were by no means trivial or not salient enough to draw attention from the United States. It should be noted that doing nothing is always a viable option in any decision-making process. There would be occasions where U.S. decision makers decide not to act, even by commenting, regardless of the saliency of these events. Unfortunately, the present literature of foreign policy analysis or decision making in general offers very little about the perspective of doing nothing.

TABLE 6.6 Frequency Distribution of Different Scenarios in Applying Foreign Policy Instruments

ID Number of Scenarios	Use of Propaganda Instruments	Use of Diplomatic Instruments	Use of Economic Instruments	Use of Military Instruments	N	%
1					0	0
2	X				964	26.1
3		X			1,584	42.9
4			X		83	2.2
5				X	135	3.7
6	X	X			161	9.8
7	X		X		109	3.0
8	X			X	151	4.1
9		X	X		111	3.0
10		X		X	60	1.6
11			X	X	6	.2
12	X	X	X		58	1.6
13	X	X		X	33	.9
14	X		X	X	9	.2
15		X	X	X	11	.3
16	X	X	X	X	14	.4
					Total = 3,689	100.0

Note: Xs denote the use of individual policy instruments, and the blanks signify the absence of individual policy instruments.

TABLE 6.7 Most Frequently Used Propaganda Policy Items

Values and Categories			N	%
(a) Variable Name: PROPITEM				
145 Explain policy or future position			342	20.1
148 Comment on situation—neutral			164	9.7
152 Comment on situation—pessimistic			157	9.2
171 Criticize, charge, blame, disapprove			155	9.1
141 Offer proposal			107	6.2
139 Comment on situation—optimistic			83	4.9
105 Give verbal support			58	3.4
143 Urge action or policy			55	3.2
113 Promise economic support			54	3.2
114 Promise military support			45	2.7
179 Give warning			42	2.5
155 Reject or turn down proposal			41	2.4
173 Denounce, denigrate, abuse			41	2.4
118 Assure, reassure			32	1.9
122 Agree to future action or procedure			32	1.9
101 Praise, hail, applaud			30	1.8
163 Express concerns			29	1.7
111 Promise support without specification			23	1.4
183 Threaten with specific economic negative sanctions			23	1.4
177 Issue order or command			20	1.2
Other valid categories			166	9.8
	Total	=	1,699	100.1
(b) Positive, neutral, and negative propaganda items				
101-139 Positive propaganda items			432	25.4
141-148 Neutral or ambiguous propaganda items			671	39.5
152-186 Negative propaganda items			596	35.1
	Total	=	1,699	100.0
(c) Single-word grouping of propaganda items				
137,139, 145,146,147,148,152	Comment		750	44.1
171,173,174	Accuse		214	12.6
111-118	Promise		163	9.6
141,143	Propose		162	9.5
101,105	Approve		88	5.2
163,179	Warn		71	4.2
155,157	Reject		59	3.5
181-184	Threaten		55	3.2
121,122	Agree		51	3.0
126-131	Request		40	2.4
177	Demand		20	1.2
167,169	Deny		17	1.0
	Other Categories		9	.5
	Total	=	1,699	100.0

Propaganda Instruments

The variable for primary item of propaganda instruments used is labeled PROPITEM. Table 6.7.a lists the top 20 most frequently used propaganda items. "Explaining policy" has the highest occurrence, appearing in one of every five propaganda items adopted (N = 342, 20.1%). "Comment on situation—neutral" is in the second place (N = 164), "Comment on situation—pessimistic" is in the third place (157), and "Comment on situation—optimistic" is in the sixth place (83). Making comments on situations occurs in nearly one-fourth of the propaganda items used (N = 395, 23.8%). Criticizing is in the fourth place, with a total of 155 cases, while offering a proposal comes next, with a total of 107 cases.

Table 6.7.b regroups individual propaganda items based on their positive, neutral and negative nature. The frequency distribution is relatively even across the categories. Neutral (or ambiguous) propaganda constitutes 39.5% (N = 671) of cases, negative propaganda 35.1% (N = 596), and positive propaganda 25.4% (N = 432). In my design, any of the neutral or ambiguous policy instruments can transcend positive, neutral or negative affect toward the target, depending upon the whole context of the event under consideration. Therefore, Table 6.7.b does not provide much information about the correspondence between propaganda items and their actual affect toward the receiver when propaganda is the only type of statecraft used.

The WEIS category system of international events consists of 22 basic types of acts, where cue words are utilized as summarized representation (Kegley 1973, 24-5; McClelland and Hoggard). Adopting a similar strategy, I regrouped and transformed the propaganda items into 12 categories to have a fresh look at how words are used in the

realm of U.S. foreign policy. As shown in Table 6.7.c, among the most often used types of propaganda, "Comment" was used in 44.1% (N = 750) of cases, "Accuse" in 12.6% (N = 214), "Promise" in 9.6% (N = 163), and "Propose" in 9.5% (N = 162). Other less popular types include "Approve" (N = 88, 5.2%), "Warn" (N = 71, 4.2%), "Reject" (N = 59, 3.5%), "Threaten" (N = 55, 3.2%), "Agree" (N = 51, 3.0%), and "Request" (N = 40, 2.4%). The least frequently used types are "Demand" (N = 20, 1.2%), "Deny" (N = 17, 1.0%), and the residual category (N = 9, .5%).

Here I focus on the most often used types of propaganda. The "Comment" category is the most widely used propaganda of the Unites States. Its purpose is to state positions on situations or problems and to announce or explain U.S. policies under various circumstances. In showing Americans' affect toward other targets, "Accuse" sounds more dramatic, and is more often used than "Approve" or "Agree," as described above. This would suggest that the United States tends to use harsh words. But, when adding substance (i.e., policy initiatives involving rewards or punishments) to words, "Promise" seems to be preferable to "Threaten." Certainly, the United States as a superpower is much more capable of backing up its promises or threats than are most other nations. The evidence here indicates that when it comes to substantive or physical action, the United States is likely to show kindness toward other nations more often than not. And yet, as a world leader, the United States must propose policy initiatives to solve constant problems or alleviate crisis situations. It is not surprising that the "Propose" category plays quite an important part in U.S. foreign policy.

TABLE 6.8 Most Frequently Used Diplomatic Policy Items

Values and Categories			N	%
(a) Variable Name: DIPLITEM				
216 Sign accords or agreements			217	9.7
221 Visit, go to (nonhead of state)			190	8.5
224 Hold formal meeting with agreement, results or progress			186	8.3
241 Simply hold formal meeting			178	8.0
220 Visit, go to (head of state)			169	7.6
222 Receive visit, host (head of state)			133	6.0
225 Hold summit or annual bilateral meeting between leaders			122	5.5
231 Senate and/or House vote for the target			82	3.7
262 Senate and/or House vote against the target			54	2.4
226 Confer, consult, meet with leaders or high-level officials			51	2.3
261 Have a trial or court decision unfavorable to the target			47	2.1
265 Vote unfavorably in UNSC			44	2.0
260 Hold formal meeting with no results or no progress			38	1.7
233 Vote favorably in UNSC			35	1.6
214 Participate in diplomatic activities			34	1.5
223 Receive visit, host (nonhead of state)			34	1.5
289 Expel personnel, order persons out of country			31	1.4
256 Work through UN in general			29	1.3
211 Receive or admit persons, e.g. refugees			28	1.2
258 Seek support from allies or other nations			27	1.2
Other valid categories			503	22.5
		Total =	2,232	100.0
(b) Positive, neutral, and negative diplomatic items				
201-240	Positive diplomatic items		1,487	66.6
241-259	Neutral or ambiguous diplomatic items		332	14.9
260-296	Negative diplomatic items		413	18.5
		Total =	2,232	100.0
(c) Regrouping of diplomatic items				
224-27,241,242,244,260	Hold meeting/talk		587	26.3
219,220,221.222,223	Visit		527	23.6
215,216,217,218	Make agreement (formal)		266	11.9
233-35,252-56,265-67	Work through IOs		169	7.6
(233,252,265	Vote in UNSC		101	4.5)
231,248,249,250,262	Vote in Senate/House		160	7.2
277-81,284,285,293,294	Reduce relations		86	3.9
230,246,247,261	Work through courts/commissions		74	3.3
236,258	Initiate diplomacy with third party		53	2.4
289,290,291	Expel/detain persons		52	2.3
228,282,283	Apply diplomacy to dissidents		43	1.9
210,211,212	Receive/return persons		42	1.9
205-8,213,229	Grant privilege/recognition		42	1.9
214	Participate in activities		34	1.5
257,269,275,276	Issue formal announcement		31	1.4
237-40,271-74	Engage in exchange (cultural, etc.)		21	.9
	Other categories		45	2.0
		Total =	2,232	100.0

Diplomatic Instruments

The variable representing the primary item of diplomatic instruments used is designated DIPLITEM. Table 6.8.a illustrates the top 20 most frequently used diplomatic items. "Sign accords or agreements" has the most appearances (N = 217, 9.7%) as a single diplomatic tool, followed by "Visit by nonhead of state" (N = 190, 8.5%), "Hold meeting with results" (N = 186, 8.3%), "Hold meeting only" (N = 178, 8.0%), "Visit by head of state" (N = 169, 7.6%), "Receive visit of head of state" (N = 133, 6.0%), and "Hold summit or annual meeting" (N = 122, 5.5%). As can be seen from these data, no single diplomatic tool was used in more than 10% of cases, nor did any dominate U.S. diplomatic action. The distribution of individual diplomatic instruments is quite wide. For less popular diplomatic tools, see the bottom half of Table 6.8.a.

Individual policy items of diplomacy can be regrouped according to their positive, neutral and negative nature. As revealed in Table 6.8.b, positive diplomatic instruments were used in 1,487 cases (66.6%), negative diplomatic instruments were used in 413 cases (18.5%), while neutral diplomatic instruments were used in 332 cases (14.9%). As mentioned earlier, neutral instruments may be characterized as positive or negative, depending on their context in an event. Thus, at least two-thirds of diplomatic instruments used by the United States were likely to express positive affect toward other nations.

In Table 6.8.c, similar diplomatic items are grouped into categories that can be characterized by a single cue word or a short phrase, as in the WEIS project. "Meet" and "Visit" are the two most commonly used types of diplomacy (N = 587, 26.3%; N = 527, 23.6%). Half of all the diplomatic instruments used belong to these two groups. The

category "Agreement," which means the signing and carrying out of agreements, is in third place (N = 266, 11.9%). The roles of "Senate/House" (N = 160, 7.2%) and "International Organizations (IOs)" (N = 169, 7.6%) are crucial. Notably, more than half (N = 101, 4.5%) of the IOs cases were involved with the voting in the UN Security Council (UNSC). The remainder of Table 6.8.c shows that the courts or arbitrary commissions were involved in 74 cases (3.3%). When relations between the United States and another nation were strained or intense, the policy item "Reduce diplomatic relations" was used 86 times (3.9%), and the item "Expel/detain persons" was initiated 52 times (2.3%). "Diplomacy with third-party nations" is another important policy type, occurring in 53 cases (2.4%).

To sum up, the business-as-usual part of American diplomacy involved a tireless effort to maintain and promote bilateral relations (e.g., through visiting), a constant need to resolve issues and strike deals (e.g., through meeting), and a formal process to show results and check on progress (e.g., through making, executing, and verifying agreements). Working through international organizations, especially the UNSC, played quite a significant role in U.S. foreign policy. In addition to the executive branch, the legislative and judicial branches were also sources of U.S. foreign policy behavior, even though they were involved in merely 10% of all acts. Note that the proportion of acts the legislative branch contributed to U.S foreign policy may be slightly understated. For instance, the category "Visit by nonhead of state" makes no distinction between visiting activities to foreign countries by ministerial-level officials and those by representatives in the Congress or Senate.

TABLE 6.9 Most Frequently Used Economic Policy Items

Values and Categories			N	%
(a) Variable Name: ECONITEM				
321 Provide aid in the form of grants or loans			96	23.9
337 End, lift, or suspend sanctions			21	5.2
306 Grant licenses of import/export of particular goods			19	4.7
373 Suspend aid			19	4.7
335 Provide emergency aid for disaster relief			17	4.2
334 Grant preferential treatment to loans or debt repayment			15	3.7
362 Deny licenses to import or export particular goods			15	3.7
302 Grant most-favored-nation status			13	3.2
382 Apply positive economic tools to the rebels or dissidents			13	3.2
385 Impose overall sanctions			13	3.2
328 Implement joint venture			12	3.0
340 Ease, relax trade or financial restrictions			12	3.0
360 Ban on doing business with firms			10	2.5
332 Resolve the settlement of financial claims			9	2.2
381 Interfere through investment or other financial instruments			9	2.2
353 Increase tariffs on import from the target nation			7	1.7
304 Implement direct purchase or direct sale			5	1.2
313 Establish transportation agreement			5	1.2
336 Resume economic aid			5	1.2
375 End or terminate aid			5	1.2
Other valid categories			81	20.2
	Total	=	401	100.3
(b) Positive, neutral, and negative economic items				
301-347	Positive economic items		269	67.1
350	Neutral or ambiguous economic items		1	.2
351-387	Negative economic items		131	32.7
	Total	=	401	100.0
(c) Distinction between trade and capital				
301-314	Positive trade sanctions		57	14.2
321-334	Positive capital sanctions		144	35.9
335-347	Miscellaneous positive sanctions		68	17.0
350	Neutral or ambiguous economic actions		1	.2
351-368	Negative trade sanctions		54	13.5
371-381	Negative capital sanctions		43	10.7
382-387	Miscellaneous negative sanctions		34	8.5
	Total	=	401	100.0

Economic Instruments

The variable representing the primary item among economic instruments used is designated ECONITEM. Table 6.9 summarizes the use of economic instruments. Table 6.9.a describes the most widely applied economic policies. The item "Provide aid in the form of grants or loans" is the most frequently adopted (N = 96, 23.9%). Remarkably, its frequency is three times higher than those of the other most frequently used economic policy items, e.g., "End/lift/suspend sanctions" (N = 21, 5.2%), "Grant licenses to import or export particular goods" (N = 19, 4.7%), "Suspend aid" (N = 19, 4.7%), and "Provide emergency aid for disaster relief" (N = 17, 4.2%). Less frequently used economic policy items include "Grant preferential loans or debt treatment" (N = 15, 3.7%), "Deny licenses to import or export particular goods" (N = 15, 3.7%), "Grant most-favored-nation status" (N = 13, 3.2%), "Supply aid to rebels or dissidents" (N = 13, 3.2%), "Impose overall sanction" (N = 13, 3.2%), "Implement joint venture" (N = 12, 3.0%), and "Ease/relax trade or financial restrictions" (N = 12, 3.0%).

As can be seen in Table 6.9.b, while individual instruments may be of a positive, neutral or negative nature, the use of positive economic items (N = 269, 67.1%) occurs twice as often as the use of negative economic items (N = 131, 32.7%). If a distinction is made between trade and capital, Table 6.9.c shows that positive-capital sanctions (N = 144, 35.9%) were more often employed than positive-trade, negative-trade or negative-capital sanctions (N = 57, 54, and 43, respectively). My results are consonant with the fact that the United States has been the principal donor of foreign aid since the end of World War II. Foreign aid policy is an indispensable element in U.S. dealings with other nations. Negative economic sanctions are perhaps more newsworthy or salient than

positive economic sanctions. As shown in both Tables 6.9.b and 6.9.c, however, positive sanctions occurred twice as frequently as negative sanctions. The common focus on negative economic sanctions to make inferences about U.S. foreign economic policy appears to be based on serious selection biases and leads to misrepresenting U.S. economic relations to other nations.

Military Instruments

The variable for primary item of military instruments used is designated MILIITEM. As illustrated in Table 6.10.a, the most frequently used military item is "Sell/send arms" (N = 75, 17.9%), followed by "Provide/grant military aid" (N = 39, 9.3%), and "Set up task force in the region" (N = 23, 5.5%). Other frequently applied military policies include "Supply military aid to the rebels or dissidents" (N = 19, 4.5%), "Reject/suspend specific arms sales" (N = 18, 4.3%), "Take joint military action" (N = 17, 4.1%), "Send troops for assistance, e.g., peacekeeping" (N = 15, 3.6%), "Sell/send highly advanced technology" (N = 15, 3.6%), "Provide air/naval/land facilities for use" (N = 14, 3.3%), and "Launch air-strike/fire missiles" (N = 12, 2.9%).

Here I concentrate on the military policies most frequently used by the United States. Because the United States is a top arms producer in both quality and quantity, it is not surprising that it has exported arms or advanced technology and provided military aid when such actions were in line with its strategic interests. The deprivation of such exports and aid also served as a useful tool in exerting its influence. Sometimes this type of military aid was extended to the opponents of ruling regimes—the rebels or dissidents—when the legitimacy of the ruling regimes was deemed questionable or

unfavorable. Moreover, from time to time the United States exercised its military power by exhibiting force, sending troops to alleviate crisis situations, and when necessary, initiating physical action, such as launching strikes.

In Table 6.10.b, individual military instruments are regrouped based upon their positive, neutral, and negative nature. As can be seen, for every employment of a negative military item, there are almost two employments of positive military items (N = 145, 34.6%; N = 265, 63.2%). The use of neutral military items accounts for only 2.1% (N = 9) of the total. From Tables 6.9.b and 6.10.b, it is apparent that in applying economic or military policy, the U.S. stance tends to be clear-cut—positive or negative, but rarely neutral.

Table 6.10.c makes rough distinction between the levels of military cooperation and conflict, based upon the categories of COPDAB. "Military support" is most frequently seen (N = 257, 61.3%), followed by "Military hostile actions" (N = 106, 25.3%). The levels of military conflict beyond hostile actions—"Small scale military acts" (N = 12, 2.9%), "Limited war acts" (N = 22, 5.3%), and "Extensive war" (N = 5, 1.2%)—account for approximately one of ten military acts. In brief, given that the United States is one of the world's major arms manufacturers, its most important military instruments involved arms sales and military aid. Force is often regarded as the last resort. Not only is force expensive, but the effect of force is destructive. Some have argued that the utility of force has drastically declined. The discussion above suggests, however, that the use of force still plays an important role in U.S. foreign policy.

TABLE 6.10 Most Frequently Used Military Policy Items

Values and Categories			N	%
(a) Variable Name: MILIITEM				
425 Sell or send arms			75	17.9
433 Provide or grant military aid			39	9.3
466 Set up task force in the region or at nearby high sea			23	5.5
451 Apply positive military tools to the rebels or dissidents			19	4.5
456 Reject or suspend specific arms sales or technology transfers			18	4.3
432 Take joint military action for specific purposes			17	4.1
416 Send troops for assistance, e.g., peacekeeping			15	3.6
423 Sell or send highly advanced technology			15	3.6
413 Provide air, naval, or land facilities for use			14	3.3
480 Launch air-strike, fire missiles			12	2.9
412 Provide air or naval assistance for emergency relief			11	2.6
414 Use air, naval, or land facilities of the target nation			9	2.1
411 Provide air or naval assistance to transport or evacuate troops			8	1.9
403 Conduct joint military maneuvers or exercises			7	1.7
422 Train military personnel for the target nation			7	1.7
431 Engage in joint R & D of military technology			7	1.7
458 Suspend military aid			7	1.7
471 Engage in limited air, naval or border skirmishes			7	1.7
417 Withdraw troops from regions close to the target nation			6	1.4
439 Apply negative military tools to the rebels or dissidents			6	1.4
454 Ban all arms sales (arms embargo)			6	1.4
462 Reduce or cut back military relations			6	1.4
482 Bomb military or industrial areas			6	1.4
Other valid categories			79	18.9
	Total	=	419	100.0
(b) Positive, neutral, and negative military items				
401-439 Positive military items			265	63.2
441-444 Neutral or ambiguous military items			9	2.1
451-492 Negative military items			145	34.6
	Total	=	419	99.9
(c) Levels of military cooperation and conflict				
401-403 Military alliance			8	1.9
411-439 Military support			257	61.3
441-444 Neutral or ambiguous military action			9	2.1
451-469 Military hostile actions			106	25.3
471-476 Small scale military acts			12	2.9
480-484 Limited war acts			22	5.3
486-492 Extensive war			5	1.2
	Total	=	419	100.0

6.2.3 Affect toward Targets and a New Cooperation/Conflict Scale

The variables related to U.S. affect toward its targets are the following:

GESTURE: the nature of action with regard to the primary instrument used, where 1 = positive, 2 = neutral, 3 = negative, and 4 = mixed;

AFFECT: affect toward the target, transformed from the GESTURE variable, where -1 = negative, 0 = neutral or ambiguous, and 1 = positive; and

FACINDEX: the cooperation/conflict scale = STACRAFT × AFFECT, where its values range from -4 to 4, representing foreign policy behavior from the most hostile to the most cooperative.

Every foreign policy act from the sender transmits a message to the target. The variable GESTURE is used to classify the intentions behind the message into four groups: positive, neutral, negative, and mixed. The difficulties associated with the coding of this variable lie with the problem of interpretation. A single act may be subject to multiple interpretations. A good intention from the sender might be interpreted by the target as evil. More often than not, when ambiguities arise, the summarized event records do not contain information with regard to either the intentions of the sender nation or interpretations by the target nation. To facilitate objective evaluations during the coding process, I classified, in advance, individual foreign policy instruments into three groups—positive, neutral or ambiguous, and negative. When a coder spotted the primary use of a positive or negative instrument, there was no uncertainty with regard to the underlying gesture of the act: a positive instrument signifies a positive gesture, and a negative instrument represents a negative gesture. Thus the coder's burden of evaluation was narrowed down to the use of neutral or ambiguous instruments: a neutral or

ambiguous instrument may imply a positive, neutral, negative, or mixed gesture, depending upon the context of the event.

As can be seen in Table 6.11.a, "Positive action" (N = 2,044, 55.4%) occurred more frequently than "Negative action" (N = 1,166, 31.6%), or "Neutral action" (N = 474, 12.9%). Mixed positive and negative action is possible but was rare (N = 5, .1%). By a slight transformation of GESTURE, i.e., treating the "mixed" category as "neutral," I obtained the variable AFFECT with an ordinal level of measurement. Table 6.11.b displays the frequency distribution of AFFECT, which is almost identical to that of GESTURE.

By multiplying STACRAFT by AFFECT, a new cooperation/conflict scale—the variable FACINDEX—was generated. The scale containing scores from -4 to 4 covers situations from most hostile to most cooperative. Each value, except 0, signifies cooperation or conflict at an ordinal level for propaganda, diplomacy, economics, or force. For example, the category "Very hostile" (value = -3) denotes conflict at the level of economics. In Table 6.11.c, about one-third of events appear to be "Quite cooperative" (value = 2, N = 1,302, 35.3%). The less frequently seen situations are "Least hostile" (value = -1, N = 489, 13.3%), "Neutral or ambiguous" (value = 0, N = 479, 13.0%), and "Quite hostile" (value = -2, N = 410, 11.1%). Among the least frequently occurring situations, "Most hostile" (value = -4, N = 148, 4.0%) surprisingly appears more often than "Very hostile" (value = -3, N = 119, 3.2%). A similar contrast can be found between "Most cooperative" (value = 4, N = 269, 7.3%) and "Very cooperative" (value = 3, N = 242, 6.6%).

TABLE 6.11 Frequencies of GESTURE, AFFECT, and FACINDEX

Values and Categories		N	%
(a) Variable Name: GESTURE			
1 Positive action		2,044	55.4
2 Neutral action		474	12.9
3 Negative action		1,166	31.6
4 Mixed action		5	.1
	Total =	3,689	100.0
(b) Variable Name: AFFECT			
-1 Negative		1,166	31.6
0 Neutral or ambiguous		479	13.0
1 Positive		2,044	55.4
	Total =	3,689	100.0
(c) Variable Name: FACINDEX			
-4 Most hostile		148	4.0
-3 Very hostile		119	3.2
-2 Quite hostile		410	11.1
-1 Least hostile		489	13.3
0 Neutral or ambiguous		479	13.0
1 Least cooperative		231	6.3
2 Quite cooperative		1,302	35.3
3 Very cooperative		242	6.6
4 Most cooperative		269	7.3
	Total =	3,689	100.1

Accordingly, in either conflict or cooperation, the use of military instruments was no less popular than the use of economic instruments. In summary, the results above seem to be contradictory to the positions of some extreme realists, who believe that the international system is basically anarchic and chaotic, close to what Hobbes describes as the state of nature, or more precisely, "a war of all against all." My evidence suggests that there are more positive actions than negative actions in U.S. foreign policy, and that cooperation at the level of diplomacy exceeds cooperation or conflict at other levels in American relations to other countries.

6.3 ISSUES

6.3.1 Classifying Issues

Issues may be classified by using the following variables:

NEGOTIAB: the degree of negotiability or value instillation of the primary issue involved, where 1 = low negotiability/transcendent, 2 = medium negotiability/symbolic, and 3 = high negotiability/substantive;

ISUTYPE1: COPDAB issue-type for the primary issue involved, where 1 = symbolic/political relations, 2 = economic relations, 3 = military/strategic relations, 4 = cultural/scientific relations, 5 = relations of physical environment/natural resources, 6 = relations of human/demographic/ethnic issues, 7 = political order/law/organization, and 8 = missing;

ISUTYPE2: COPDAB issue-type for the secondary issue involved, where the categories are the same as in ISUTYPE1; and

MULISSUE: the presence of multiple issue types, where 1 = only one issue type involved, and 2 = two and possibly more issue types involved.

TABLE 6.12 Frequencies of NEGOTIAB, ISUTYPE1, and ISUTYPE2

Values and Categories		N	%
(a) Variable Name: NEGOTIAB (negotiability of the primary issue involved)			
1	Low negotiability/transcendent issue-type	540	14.6
2	Medium negotiability/symbolic issue-type	2,538	68.8
3	High negotiability/substantive issue-type	611	16.5
	Total =	3,689	99.9
(b) Variable Name: ISUTYPE1 (primary issue type)			
1	Symbolic/political relations	95	2.6
2	Economic relations	573	15.5
3	Military/strategic relations	1,528	41.4
4	Cultural/scientific relations	33	.9
5	Relations regarding physical environment/natural resources	12	.3
6	Relations regarding human/demographic/ethnic issues	296	8.0
7	Political order/law/organization	1,152	31.2
8	Missing	0	0
	Total =	3,689	100.0
(c) Variable Name: ISUTYPE2 (secondary issue type)			
1	Symbolic/political relations	0	0
2	Economic relations	162	4.4
3	Military/strategic relations	262	7.1
4	Cultural/scientific relations	13	.4
5	Relations regarding physical environment/natural resources	8	.2
6	Relations regarding human/demographic/ethnic issues	60	1.6
7	Political order/law/organization	237	6.4
8	Missing	2,947	79.9
	Total =	3,689	100.0
(d) Without the distinction between primary and secondary issue types			
1	Symbolic/political relations	95	2.1
2	Economic relations	735	16.6
3	Military/strategic relations	1,790	40.4
4	Cultural/scientific relations	46	1.0
5	Relations regarding physical environment/natural resources	20	.5
6	Relations regarding human/demographic/ethnic issues	356	8.0
7	Political order/law/organization	1,389	31.4
	Total =	4,431	100.0
(e) Variable Name: MULISSUE			
1	Only one issue-type involved	2,947	79.9
2	Two or more issue-types involved	742	20.1
	Total =	3,689	100.0

By using the results of measuring issues based upon their negotiability and value instillation (see Chapter 3), I could convert individual issue items into the ordinal variable NEGOTIAB. As shown in Table 6.12.a, medium negotiability/symbolic issue-type has the highest percentage of all observations, 68.8% (N = 2,538), while high negotiability/substantive issue-type accounts for 16.5% (N = 611), and low negotiability/transcendent issue-type accounts for 14.6% (N = 540).

In Tables 6.12.b-d, I list the frequency distribution of issue types based upon COPDAB categories. As depicted in Table 6.12.b, the most frequently involved primary issue types were "Military/strategic relations" (N = 1,528, 41.4%), "Political order/law/organization" (N = 1,152, 31.2%), and "Economic relations" (N = 573, 15.5%). It seems that for the United States, military and political dimensions of foreign affairs drew more frequent, and perhaps greater, attention than the economic dimension did.

The less frequently involved primary issue types were "Relations regarding human/demographic/ethic issues" (N = 296, 8.0%) and "Symbolic/political relations" (N = 95, 2.6%). "Cultural/scientific relations" (N = 33, .9%) and "Relations regarding physical environment/natural resources" (N = 12, .3%) were involved in only a minuscule percentage of all events. One possible explanation is that events involving cultural and scientific interactions or environmental issues are often underreported.

Table 6.12.c shows the frequency distribution of secondary issue types when more than one issue type was present in an event. As can be seen, about 80% of all 3,689 valid cases did not involve secondary issue types. Among the other 20%, the most frequently seen issue types were "Military/strategic relations" (N = 262, 7.1%), "Political order/law/organization" (N = 237, 6.4%), and "Economic relations" (N = 162, 4.4%).

To examine the distribution of issue types without the distinction between primary and secondary issues, I constructed Table 6.12.d by adding Tables 6.12.b and 6.12.c together. Notably, with or without the distinction between the primary and secondary issues, the top most frequently involved issue types follow a descending order from "Military/strategic relations" to "Political order/law/organization" to "Economic relations." These three issue types together represent almost 90% of all cases. In a broad sense, political, military and economic aspects are the most important dimensions of U.S. foreign policy. In addition, as displayed in Table 6.12, the frequency distribution of the MULISSUE variable indicates that 80% of all events (N = 2,947) contained only one issue type, and the remaining 20% (N = 742) had two or more issue types involved.

6.3.2 Specifying Issues

The following variables specify the issue items in primary and secondary issues:

ISUITEM1: specific item of the primary issue; and

ISUITEM2: specific item of the secondary issue, where categories are the same as in ISUITEM1. (See Appendix I for detailed categories of both variables.)

Table 6.13 illustrates the frequency distribution of the primary issue items. A top-ten list of agendas for U.S. foreign-policy decision makers includes "Diplomatic relations/overall bilateral relations" (N = 586, 15.9%), "Conflict resolution/cease-fire negotiation" (N = 217, 5.9%), "Arms control on nuclear weapons" (N = 187, 5.1%), "Trade and tariffs" (N = 184, 5.0%), "Human rights" (N = 131, 3.6%), "Invasion or intervention at a large scale" (N = 129, 3.5%), "Military cooperation in general" (N =

126, 3.4%), "Peacekeeping/enforcing cease-fire" (N = 122, 3.3%), "Macroeconomic policy coordination" (N = 108, 2.9%), and "Terrorism, e.g., hijacking, bombing" (N = 98, 2.7%). All of these ten top issues together account for only 51.3% of all items.

If a threshold of 20 observations is considered as a criterion of saliency, there are another 32 important issues items, as shown in Table 6.13. That is to say, the overall frequency distribution of the primary issue items is scattered widely. This illustrates the *rich* and *diverse* list of agendas that constitute U.S. foreign policy.

On the right side of Table 6.13, I list the frequency of the secondary issue items and the sum of both the primary and secondary issue items when blurring the distinction between them. In doing so, I could evaluate possible biases in using only the primary issue items to construct the key independent variable, NEGOTIAB, for later use. As can be seen in Table 6.13, there are only slight changes in frequency ordering after adding the column of secondary issue items to the column of primary issue items.

6.4 MULTIPLE TARGETS AND LOCATION OF PROBLEM

Variables concerning the number of targets, the problem location, and whether or not the problem has a direct relationship to the sender in terms of geographical proximity, are identified as follows:

> MULTAR: the number of target nations involved, literally, except that the value of '8' signifies that there are multiple targets, but no more than 7 are identifiable;
>
> LOCATION: the location of the problem, where values = 1 to 12 (See Appendix I for detailed description of categories.); and
>
> DIRECT: the direct or indirect relationship of the problem to the sender, transformed from LOCATION, where 0 = not direct and 1 = direct.

TABLE 6.13 Most Frequently Seen Issue Items

Values and Categories	N_1	(%)	N_2	N_{1+2}
701 Diplomatic relations or overall bilateral relations	586	(15.9)	34	620
341 Conflict resolution or cease-fire negotiation	217	(5.9)	23	240
301 Control of nuclear weapons	187	(5.1)	31	218
201 Trade and tariffs	184	(5.0)	33	217
604 Human rights	131	(3.6)	42	173
333 Invasion or intervention at a large scale	129	(3.5)	14	143
323 Military cooperation in general	126	(3.4)	14	140
342 Peacekeeping or enforcing cease-fire	122	(3.3)	21	143
203 Macroeconomic policy coordination	108	(2.9)	23	131
713 Terrorism, e.g., hijacking, bombing	98	(2.7)	19	117
334 Military involvement in the third world	97	(2.6)	17	114
332 Isolated military incidents	87	(2.4)	8	95
103 Negative symbolic expression of hostility	84	(2.3)	0	84
220 Overall economic relations	64	(1.7)	2	66
211 Positive economic sanctions	61	(1.7)	18	79
606 Delivery or relief of individuals	61	(1.7)	4	65
337 Military activities within a nation	59	(1.6)	5	64
727 Occupied territories, where status is undecided	57	(1.5)	3	60
302 Nonproliferation of nuclear weapons	55	(1.5)	24	79
718 Legitimacy of regime	54	(1.5)	3	57
307 Control of conventional arms sales	46	(1.2)	5	51
726 Independence or self-determination	46	(1.2)	7	53
708 Espionage or spying	44	(1.2)	8	52
205 Oil and energy	42	(1.1)	10	52
212 Negative economic sanctions	42	(1.1)	38	80
321 Access to military facilities in other countries	41	(1.1)	3	44
705 War on drugs and crimes	41	(1.1)	8	49
324 Military alliance or mutual defense treaty	40	(1.1)	11	51
601 Refugee assistance	39	(1.1)	3	42
204 Financial transaction	38	(1.0)	17	55
331 International war or border war	37	(1.0)	6	43
314 Security or balance-of-power in Europe	34	(.9)	6	40
731 Unification	33	(.9)	0	33
336 Civil war	31	(.8)	1	32
339 Security alert, e.g., military mobilization on border	31	(.8)	2	33
721 Democratization or liberalization	30	(.8)	17	47
723 Containment of communism	30	(.8)	8	38
305 Chemical or biological weapons	29	(.8)	10	39
304 R & D and production of new weapons system	28	(.8)	5	33
312 Arms race or military build-up	22	(.6)	6	28
206 International debt crisis	21	(.6)	15	36
303 Nuclear test ban	20	(.5)	4	24
Other valid categories	357	(9.7)	214	571
Total =	3,689	(99.8)	742	4,431

Note: N_1 and (%) are for primary issue items (ISUITEM1); N_2 = frequencies of secondary issue items (ISUITEM2); N_{1+2} = frequencies of issue items without distinguishing between primary and secondary issue items.

TABLE 6.14 Frequencies of MULTAR, LOCATION, and DIRECT

Values and Categories	N	%
(a) Variable Name: MULTAR (the number of target nations involved)		
1 Only one target nation involved	2,289	62.1
2 Two target nations involved	506	13.7
3 Three target nations involved	195	5.3
4 Four target nations involved	168	4.6
5 Five target nations involved	125	3.4
6 Six target nations involved	288	7.8
7 Seven target nations involved	77	2.1
8 Multiple targets, but no more than 7 are identifiable	41	1.1
Total =	3,689	100.0
(b) Variable Name: LOCATION (the problem location)		
1 Within the sender's boundary	2	.1
2 Within the target's boundary	156	4.2
3 Between the sender and the target.	1,895	51.4
4 Between the targets.	89	2.4
5 Within a region next to or nearby the sender.	26	.7
6 Within a region next to or nearby the target.	691	18.7
7 Within a region neither close to the sender nor the target.	108	2.9
8 Within common space, e.g., high sea, Antarctica.	56	1.5
9 Throughout the globe.	25	.7
10 Symbolic relationships or ideas, e.g., human rights.	575	15.6
11 Intergovernmental organization.	66	1.8
12 Non-governmental transnational organization.	0	0
Total =	3,689	100.0
(c) Variable Name: DIRECT (direct or indirect relation of the problem to the sender)		
0 Not direct	1,766	47.9
1 Direct	1,923	52.1
Total =	3,689	100.0

Table 6.14 illustrates the frequencies of these three variables. In the coding process, when an event contained multiple (i.e., more than one) targets for U.S. foreign policy action, it was separated into one-sender versus one-target cases depending on the number of targets involved. The variable MULTAR keeps track of this aspect of foreign policy. Table 6.14.a shows that in 2,289 of 3,689 cases (= 62.1%), there was only one target nation involved. This is equivalent to saying that there were 2,289 events involving the United States as the sender and another nation as the only target. There are 506 cases (= 13.7%) with two receiving nations. I obtained the actual number of events by dividing the frequency counts by the value of MULTAR. For instance, the actual number of events involving two target nations is 506/2 = 253. The category "Six target nations involved," is in the third place, with a total of 288 cases (= 7.8%). This may be attributed to the frequent meetings of G-7 nations (Group of Seven, including the United States, Canada, Britain, France, (W.) Germany, Italy, and Japan).

In the subsequent analysis, I treated MULTAR as a variable with an interval level of measurement. There is a slight problem with this treatment, specifically in the eighth category "There are multiple target, but not more than 7 are identifiable (value = 8)." For example, in an event, the actual number of multiple targets involved could be 125, 20, or 5, although only three target nations are identified in the record. Since the frequency of such cases (= 41, 1.1%) is relatively small, and most of them involve more than a dozen target nations, my coding of these cases as '8' is likely to be an underestimate, rather than an overestimate, of the actual number of target nations. Therefore, the treatment of MULTAR as an interval-level variable is not as biased as it may seem to be at first glance.

Table 6.14.b illustrates the frequency pertaining to the problem location. This context variable is adopted from Hermann and Coate (1982, 84), where it is defined as "the location in physical space on the globe (if applicable) or the relational space in which the change that precipitates the problem occurs." The original classifying scheme includes eight categories. Among them, five geographical items are "within the actor's political boundaries, within another political unit's boundaries, within a geographical region, within common space (for example, high seas, Antarctica), or throughout the globe." The other three nongeographical items are "(1) symbolic relationships or ideas, (2) intergovernmental organization, and (3) nongovernmental transnational organizations."

To provide a more detailed description, I expanded the geographical items as shown in Table 6.14.b. Slightly more than 50% of all cases (N = 1,895) fall into the category of "Between the sender and the target." The less frequently seen categories include the following: "Within a region next to or nearby the target" (N = 691, 18.7%), "Symbolic relationships or ideas" (N = 575, 15.6%), "Within the target's boundary" (N = 156, 4.2%), and "Within a region neither close to the sender nor to the target" (N = 108, 2.9%). Only 2 cases are "Within the sender's boundary." This highlights the "foreign" emphasis of U.S. foreign policy. The category "Non-governmental transnational organization" scores 0. It is likely that either this category is in fact insignificant or it is greatly underreported.

To make the LOCATION variable analytically useful, I divided it into two groups: the problem has a direct relationship to the sender (1 = direct), or otherwise (0 = not direct). The categories of "Within the sender's boundary," "Between the sender and

the target," and "Within a region next to or nearby the sender" are coded as 1 in the DIRECT variable, while the remaining categories are coded as 0. Table 6.14.c shows that the frequency of "Direct" (N = 1,923, 52.1%) is slightly higher than "Not direct" (N = 1,766, 47.9%).

CONCLUSION

This chapter presents the basic results of coding the events recorded in *Foreign Affairs Chronology*. In doing so, it provides a summarized description of what happened in U.S. foreign policy behavior during the seventeen-year period from 1978 to 1994. American foreign policy indeed revealed some selective patterns. The most obvious is the distribution of the receiving targets toward which U.S. foreign policy actions were directed. To be brief, I found that U.S. foreign policy was likely to be a product of both constancy and contingency; that is, the United States frequently interacted with major players, friends and enemies alike, and it promptly responded to key actors in the crisis situations which were perceived as vital to its national interest. The detailed illustration of individual issue items and policy instruments supplies valuable information about what usually concerns the United States and how it goes about its business. To sum up, on one hand, the data exhibits a great potential for subsample analyses of prominent issues such as human rights and terrorism, of severe policy measures such as economic sanctions and the use of force, or of key targets such as the U.S.-USSR and U.S.-China relations. On the other hand, my attempt to establish links between actors, issues, and foreign policy behavior, might narrow the gap between research and the practice of foreign policy.

CHAPTER SEVEN

RESULTS III: ONE-ON-ONE RELATIONSHIPS

In the previous chapter, individual variables are illustrated in their frequency distributions. I now turn to the construction of contingency tables to explore and analyze the relationships between variables. In the two-way tables, I will explore the relationships between two variables and generate new hypotheses. Because there are more than a dozen variables involved, three groups of two-way tables are presented using three major dependent variables: PHYSICAL, AFFECT, and STACRAFT. The considerations of other dependent variables, MULTOOLS (an event count variable) and FACINDEX (an interval variable), are discussed in the next chapter, where more appropriate modeling techniques are at work. In the analysis of three-way tables, I attempt to investigate the causal relationships between actor (FOURPOW), issue (NEGOTIAB), and the selection of statecraft (STACRAFT), and between the two dependent variables just mentioned and the sender's affect toward the target (AFFECT).

To make appropriate use of cross-tabulation analysis, I adopted a four-fold classification of nations (FOURPOW = superpowers, great powers, middle powers, and small powers; see Chapter 5) to represent the actor (or target) dimension. The major consequence of collapsing relative capability scores (RCAPFRA2) into clusters of nations is a loss of information. There are, however, several reasons for doing so. First, as articulated in Chapter 5, the four-fold classification provides a useful vehicle for conceptualizing international relations. Second, such transformation may be conducive to

acquiring direct, empirical insight into a sending nation's behavior toward different clusters of nations. For interpretation, the four-fold classification of nations has the advantage of simplicity and comprehensibility over the hard numbers of relative capability scores. Third, I can determine whether or not such treatment results in conclusions different from the ones using the original scores of relative capability in the multivariate analysis of the next chapter.

To better understand the underlying causal structure among key variables, I will apply the loglinear and logit modeling techniques that are most useful when all the variables are categorical. Finally, I will conduct subsample analysis based upon different target nations or specific issue items.

7.1 CONTINGENCY TABLE ANALYSIS

7.1.1 Merits of and Problems with Contingency Table Analysis

The merits of simple contingency table analysis in principle reside in its "simplicity and understandability" (Hanushek and Jackson 1977, 17). The tabular-form exhibition of the joint distribution across categories between two variables gives readers a clearer sense of what the data looks like, in spite of the absence of raw data. The approach of row-percentage interpretation (placing dependent variables in a row instead of in a column) as explicated in Rosenberg (1968) does not require a strong statistical background or training, and reading the full table or its subtables often provides both information and insight. When measures of association (single summary numbers for

two-way tables) are properly used, they provide a useful description of the relationship between two variables, analogous to the application of correlation coefficients.[48]

There are, however, limitations to contingency table analysis. When more than three variables are involved, displaying or interpreting the multiway tables often becomes difficult. Moreover, from the causal-modeling perspective, the two-way or three-way tables are very likely to be underspecified (Hanushek and Jackson 1977, 18). Although two-dimensional cross-tabulation analysis yields some insight into the bilateral relationships among a group of variables, as Fienberg points out, this simple technique

> (a) confuses the marginal relationship between a pair of categorical variables with the relationship when other variables are present,
>
> (b) does not allow for the simultaneous examination of these pairwise relationships,
>
> (c) ignores the possibility of three-factor and higher-order interactions among the variables (1980, 1).

Despite the shortcomings stated above, measures of association remain useful tools for exploring the relationships between variables, or a communicative vehicle to summarize findings. Bishop et al. (1975, 374) classify measures of association into four groups. Their sources include (1) ordinary chi square statistic, (2) cross-product ratio, (3) proportional reduction of error, and (4) proportion of explained variance. Literally, there exist many measures, such as Q, ϕ, T, V, C, D, d, γ, τ, λ, α, ∇, χ^2, and others (Blalock

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[48] The term *correlation* is often referred to as a relationship between interval or ratio level variables, while *association* is a relationship between nominal variables. Both terms are used with ordinal variables (Buchanan 1974, 631). With reference to ordinal variables, the terms will be used interchangeably in this project.

1979, 315; Buchanan 1974, 625). Bishop et al. (1975) explain why so many measures exist and the intrinsic difficulties of choosing one among them:

> The measures differ in the way in which they define perfect and intermediate stages of association. Except in the 2 × 2 table case, a single function (and hence a single measure of association) cannot reflect the large variety of ways in which a table can depart from independence. It is this fundamental mathematical fact that leads to the variety of measures and to the difficulty inherent in choosing a single measure on any given occasion (p. 375).

Despite the efforts of Bruner (1976) and Weisberg (1964) to make contrasts between measures of association, the issue of selecting a suitable measure seems far from being resolved definitely.

7.1.2 Criteria for Evaluating Measures of Association

In this project, one of my primary concerns was to receive wider audience and limit computational costs. As in common practice, the results of chi-square statistic are reported. Chi-square statistic is well known as one of the tests of significance concerning the inference of observed association (or independence) from the sample to the population.[49] If the chi-square statistic between two variables fails to meet the

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[49] The chi-square test is devised for the situations when categories of the row and column variables are unordered. When categories of either or both variables are ordered, it remains valid, but less powerful than other nonparametric procedures such as the rank correlations, Mann-Whitney, and Kruskal-Wallis tests (Denenberg 1987, 87). The sample size poses certain problems for an efficient chi-square test. On one hand, the sample size must be large enough for the sampling distribution of chi-square to approximate the true distribution in the table. Denenberg proposes a simple formula of 5 × I × J as the minimal total sample size for an I × J table (p. 86). On the other hand, the resulting significance level depends upon two factors: the strength of the relationship and the sample size. As Blalock (1979, 301) makes clear, "Significance [of a chi-square test] can be obtained with a very strong relationship and very small samples, or with a very

conventional significance test at a .05/.01 level, then that relationship does not deserve further attention.[50] If the chi-square statistic indicates some relationship, the inquiry then is shifted to the strength of the relationship. In this regard, the analysis below adopts the practitioner's view of Buchanan (1974). *Gamma* is used as a measure of association when both variables (possibly one dummy) are ordinal, and *Cramer's V* is employed when at least one of the two variables is nominal. The results of asymmetric *Somers' d* and *Lambda* (with dependent variables specified) are listed for reference, accompanying their counterparts in terms of the level of measurement.[51] In determining whether the relationship between two ordinal variables is strong, moderate or weak, I follow Buchanan's suggestion that "A gamma of .6 or above is high, and one below .2 is not worth attention unless the data fall into some particularly meaningful pattern" (p. 638). In the nominal case, I assume that the same criterion applies, i.e., a Cramer's V of .6 or higher is regarded as a strong association, one between .2 and .6 as moderate, and one below .2 as weak. Significance tests of these measures of association are included

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weak relationship and large samples." My data set, containing 3,689 valid observations, apparently satisfies the minimal sample size criterion, but is vulnerable to the deceptions of weak relationships. Relying solely on the chi-square test would be a dubious practice.

[50] Sometimes it is helpful to look into chi-square values of the subtables. For techniques for decomposing the chi-square tests, see Allison (1980) and Iversen (1979).

[51] Buchanan (1974) prefers *Gamma* to *Somers' d*, and *Cramer's V* to *Lambda*. Bohrnstedt and Knoke (1988, 309; 325) have the opposite view.

whenever available.[52] They give me some idea about whether or not I should feel confident about the resulting number of a given measure.

The following tables, unless otherwise indicated, contain all 3,689 valid cases. Throughout the chapter, only the raw frequencies are presented in the tables. In order to fit the findings on a page, the marginal subtotals are omitted. Row percentages are compared on a case-by-case basis, in particular when doing so adds extra information to my investigation.

7.1.3 PHYSICAL versus Other Independent Variables

PHYSICAL is a dummy variable that was transformed from the four-level STACRAFT, resulting in a crude distinction between verbal and physical action. Table 7.1 describes the relationships between PHYSICAL and ordinal independent variables. By evaluating the chi-square test scores at a .01 level, significant relationships were found in the cases of FOURPOW, AFFECT, PCOLDWAR, MULTAR, and MULTOOLS.

In terms of the degree of correlation, MULTOOLS vs. PHYSICAL had the highest score of gamma, close to .9, as shown in Table 7.1.i. This is no surprise, because MULTOOLS and PHYSICAL are both transformed variables of STACRAFT. It is obvious that the use of multiple types of policy tools is more likely to occur when the policy involves severe measures beyond verbal responses.

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[52] In the contingency table analysis, I used the computer package SPSS for Windows. For detailed formulas for calculating *Gamma*, *Cramer's V*, *Somers' d*, and *Lambda*, see Norusis (1995a).

TABLE 7.1 PHYSICAL versus Ordinal Independent Variables

Row = PHYSICAL: 0 = Verbal action , 1 = Physical action

(a) NEGOTIAB

	low 1	medium 2	high 3
0	435	2,006	468
1	105	532	143

	Value	Sig.
Chi-square	2.8584	.2395
Gamma	.0659	.0981
Somers' d	.0221	.0981

(b) FOURPOW

	small 1	middle 2	great 3	super 4
0	1,239	410	665	595
1	427	151	139	63

	Value	Sig.
Chi-square	91.3134	.0000
Gamma	- .2739	.0000
Somers' d	- .0898	.0000

(c) AFFECT

	negative -1	neutral 0	positive 1
0	899	477	1,533
1	267	2	511

	Value	Sig.
Chi-square	143.7954	.0000
Gamma	.1327	.0007
Somers' d	.0421	.0007

(d) PCOLDWAR

	before 0	after 1
0	2,294	615
1	579	201

	Value	Sig.
Chi-square	7.6471	.0057
Gamma	.1285	.0079
Somers' d	.0448	.0079

(e) ELECTION

	no 0	yes 1
0	2,327	582
	623	157

	Value	Sig.
Chi-square	.0056	.9401
Gamma	.0038	.9402
Somers' d	.0013	.9402

(f) PARTY

	Republican 0	Democrat 1
0	1,913	996
1	524	256

	Value	Sig.
Chi-square	.5517	.4576
Gamma	- .0318	.4550
Somers' d	- .0106	.4550

TABLE 7.1 (cont'd)

(g) MULTAR (number of target nations involved)

	one	two	three	four	five	six	seven	8 or more
	1	2	3	4	5	6	7	8
0	1,720	420	150	132	111	267	75	34
1	569	86	45	36	14	21	2	7

	Value	Sig.
Chi-square	81.4548	.0000
Gamma	- .2884	.0000
Somers' d	- .0897	.0000

(h) DIRECT

	not direct	direct
	0	1
0	1,409	1,500
1	357	423

	Value	Sig.
Chi-square	1.7527	.1855
Gamma	.0535	.1849
Somers' d	.0178	.1849

(i) MULTOOLS (multiple tools)

	one	two	three	four
	1	2	3	4
0	2,548	361		
1	218	437	111	14

	Value	Sig.
Chi-square	1,298.89	.0000
Gamma	.8988	.0000
Somers' d	.5268	.0000

(j) MULISSUE (multiple issues)

	one	two/more
	0	1
0	2,310	599
1	637	143

	Value	Sig.
Chi-square	1.9516	.1624
Gamma	- .0720	.1520
Somers' d	- .0234	.1520

TABLE 7.2 PHYSICAL versus Nominal Independent Variables

Row = PHYSICAL: 0 = Verbal action, 1 = Physical action

(a) LOCATION (location of the problem)

1=within the sender; 2=within the target;
3=between sender and target; 4=between the targets;
5=close to sender; 6=close to target; 7=far away from both;
8=within common space; 9=throughout the globe;
10=symbolic relations/ideas; 11=intergovernmental organization

	1	2	3	4	5	6	7	8	9	10	11
0	2	92	1,477	72	21	613	98	31	25	417	61
1		64	418	17	5	78	10	25		158	5

	Value	Sig.
Chi-square	134.5311	.0000
Cramer's V	.1910	.0000
Lambda	.0000	NA (not available)

(b) ADMINIST (various administrations)

	Carter	ReaganI	ReaganII	Bush	Clinton
	1	2	3	4	5
0	801	881	552	510	195
1	173	215	156	153	83

	Value	Sig.
Chi-square	23.7701	.0001
Cramer's V	.0803	.0001
Lambda	.0000	NA (not available)

(c) REGIONS (geographical regions)

0=North & Central America; 1=South America; 2=Western Europe;
3=Eastern Europe; 4=Central & Western Africa;
5=Southern & Eastern Africa; 6=Middle East & North Africa;
7=East & South Asia; 8=South Eastern Asia; 9=the Pacific

	0	1	2	3	4	5	6	7	8	9
0	371	88	362	754	51	150	653	335	117	28
1	141	39	66	120	15	51	185	117	39	7

	Value	Sig.
Chi-square	66.9534	.0000
Cramer's V	.1347	.0001
Lambda	.0000	NA (not available)

As shown Table 7.1.g, a gamma score of .28 signifies a moderate, positive relationship between MULTAR and PHYSICAL. This is contrary to my expectation that the cost of foreign policy would be positively associated with the number of targets involved. It seems reasonable to believe that the sender is less likely to take severe measures, i.e., physical action, as the number of targets increases. As will be explained later, however, the distinction between verbal and physical action might not have been properly drawn.

Table 7.1.b shows a moderate, negative relationship (gamma = -.27) between FOURPOW and PHYSICAL. That is to say, the more powerful the target nation, the more likely the United States was to adopt physical action. As revealed in Table 7.1.d, a gamma value of .13 indicates a weak association between PCOLDWAR and PHYSICAL. This implies that the United States is more likely to take physical action in the post-Cold War period than in earlier periods.

Table 7.1.c shows a weak correlation between AFFECT and PHYSICAL (gamma = .13), suggesting that when the United States chose to show positive affect, it tended to adopt physical action more often than verbal action. Additional information can be gained from looking at the row percentages of Table 7.1.c. When the United States showed a positive or a negative affect toward another nation, about 75% of the time it tended to take verbal measures. Moreover, to show a neutral or ambiguous attitude, verbal measures seemed to be the choice almost all the time.

Table 7.2 illustrates the relationships between PHYSICAL and nominal independent variables. Based on highly significant chi-square test scores, there might be a relationship between PHYSICAL and LOCATION, ADMINIST, or REGIONS. As

shown in Table 7.2.a, a borderline score of .19 in the Cramer's V measure indicates a moderate relationship between LOCATION and PHYSICAL. Based upon row percentages, the United States was more likely to take physical action in the problem-location categories "Within common space," "Within the target's boundary," and "Symbolic relations/ideas" (44.64%, 41.03%, and 27.48%, respectively). In other words, disputes in the air or on the high seas tended to provoke the United States to take severe measures. Moreover, the United States, as a superpower or world leader, was likely to carry out interventions, positive or negative, beyond its territorial boundaries. Symbolic relations or ideas were also one of the sources of U.S. physical action. Recall that as shown in Table 7.1.h, DIRECT, a dummy transformed from LOCATION, has no significant relationship with PHYSICAL. This is an example of the loss of valuable information in collapsing the categories of an original variable.

Table 7.2.b shows that the percentages of applying physical action in every presidential term of the administration slightly increased over time, but the frequencies of physical actions dropped. A .08 score of Cramer's V denotes a rather negligible relationship between ADMINIST and PHYSICAL. Table 7.2.c reveals that the association between REGIONS and PHYSICAL (Cramer's V = .13) is not impressive. A further look at the table suggests that the United States was not inclined to take physical action toward the European nations (= 14.29%) as toward other American nations (= 28.17%). Without knowing the positive or negative nature of those physical actions, however, I cannot say much about the geographical preferences shown in U.S. foreign policy.

TABLE 7.3 AFFECT versus Ordinal Independent Variables

Row = AFFECT: -1 = Negative, 0 = Neutral, 1 = Positive

(a) NEGOTIAB(ility)

	low 1	medium 2	high 3
-1	324	732	110
0	63	361	56
1	153	1,445	446

	Value	Sig.
Chi-square	297.4494	.0000
Gamma	.4540	.0000
Somers' d	.2678	.0000

(b) FOURPOW

	small 1	middle 2	great 3	super 4
-1	541	230	96	299
0	173	65	84	157
1	952	266	624	202

	Value	Sig.
Chi-square	379.1338	.0000
Gamma	-.0727	.0014
Somers' d	-.0431	.0014

(c) STACRAFT (costliness)

	least 1	second 2	third 3	most 4
-1	489	410	119	148
0	244	233		2
1	231	1,302	242	269

	Value	Sig.
Chi-square	626.7789	.0000
Gamma	.3729	.0000
Somers' d	.2284	.0000

(d) PCOLDWAR

	before 0	after 1
-1	993	173
0	409	70
1	1,471	573

	Value	Sig.
Chi-square	93.0558	.0000
Gamma	.3418	.0000
Somers' d	.1897	.0000

(e) ELECTION

	no 0	yes 1
-1	938	228
0	398	81
1	1,614	430

	Value	Sig.
Chi-square	4.3695	.1125
Gamma	.0492	.1873
Somers' d	.0280	.1873

(f) PARTY

	Republican 0	Democrat 1
-1	818	348
0	277	202
1	1,342	702

	Value	Sig.
Chi-square	23.3424	.0000
Gamma	.0562	.0652
Somers' d	.0326	.0652

TABLE 7.3 (cont'd)

(g) MULTAR (number of target nations involved)

	one	two	three	four	five	six	seven	8 or more
	1	2	3	4	5	6	7	8
-1	864	175	47	17	15	24	15	9
0	308	85	27	16	15	22	1	5
1	1,117	246	121	135	95	242	61	27

	Value	Sig.
Chi-square	251.8610	.0000
Gamma	.3421	.0000
Somers' d	.1926	.0000

(h) DIRECT

	not direct	direct
	0	1
-1	776	390
0	260	219
1	730	1,314

	Value	Sig.
Chi-square	291.9975	.0000
Gamma	.4743	.0000
Somers' d	.2901	.0000

(i) MULTOOLS (multiple tools)

	one	two	three	four
	1	2	3	4
-1	909	230	22	5
0	443	36		
1	1,414	532	89	9

	Value	Sig.
	128.1477	.0000
	.2522	.0000
	.1382	.0000

(j) MULISSUE (multiple issues)

	one	two/more
	0	1
-1	996	200
0	410	69
1	1,571	473

	Value	Sig.
Chi-square	27.7346	.0000
Gamma	.1742	.0000
Somers' d	.0974	.0000

TABLE 7.4 AFFECT versus Nominal Independent Variables

Row = AFFECT: -1 = Negative, 0 = Neutral, 1 = Positive

(a) LOCATION (location of the problem)

1=within the sender; 2=within the target;
3=between sender and target; 4=between the targets;
5=close to sender; 6=close to target; 7=far away from both;
8=within common space; 9=throughout the globe;
10=symbolic relations/ideas; 11=intergovernmental organization

	1	2	3	4	5	6	7	8	9	10	11
-1	1	75	377	41	12	255	26	26	6	329	18
0		18	217	19	2	142	19	4	2	51	5
1	1	63	1,301	29	12	294	63	26	17	195	43

	Value	Sig.
Chi-square	434.6175	.0000
Cramer's V	.2427	.0000
Lambda	.0961	NA (not available)

(b) ADMINIST (various administrations)

	Carter	ReaganI	ReaganII	Bush	Clinton
	1	2	3	4	5
-1	299	415	245	158	49
0	176	147	76	54	26
1	499	534	357	451	203

	Value	Sig.
Chi-square	131.5364	.0000
Cramer's V	.1335	.0000
Lambda	.0000	NA (not available)

(c) REGIONS (geographical regions)

0=North & Central America; 1=South America; 2=Western Europe;
3=Eastern Europe; 4=Central & Western Africa;
5=Southern & Eastern Africa; 6=Middle East & North Africa;
7=East & South Asia; 8=South Eastern Asia; 9=the Pacific

	0	1	2	3	4	5	6	7	8	9
-1	194	32	71	319	18	73	294	107	53	5
0	46	10	48	169	10	24	111	39	17	5
1	272	85	309	386	38	104	433	306	86	25

	Value	Sig.
Chi-square	169.3341	.0000
Cramer's V	.1515	.0000
Lambda	.0000	NA (not available)

7.1.4 AFFECT versus Other Independent Variables

The variable AFFECT denotes the sending nation's overall expression or orientation toward another nation in response to an event. It is an ordinal variable comprising three categories: negative, neutral, and positive. Tables 7.3 and 7.4 indicate that only ELECTION fails the chi-square test at a .01 level. This implies that nearly all the independent variables under consideration have some relationship, other than independence, with AFFECT.

Among ordinal independent variables, NEGOTIAT (gamma = .45) and DIRECT (.47) have the highest scores of correlation with AFFECT, as displayed in Tables 7.3.a and 7.3.h. The former implies that the more negotiable the issue, the more likely the United States was to show positive affect. The latter suggests that when the problem had a direct relationship to the United States in terms of geographical proximity, the United States was predisposed to be positive.

Next, as revealed in Table 7.3.c, there is a moderate, positive relationship between STACRAFT and AFFECT (gamma = .37). This indicates that when the United States adopted more costly policy options, it was inclined to express positive affect. In Table 7.3.d, a gamma score of .34 represents a moderate, positive correlation between PCOLDWAR and AFFECT. To put it simply, the United States was more apt to make friendly gestures in the post-Cold War era than in earlier periods.

As illustrated in Table 7.3.g, there is a moderate, positive relationship between MULTAR and AFFECT (gamma = .34). It is clear that the greater the number of target nations involved in an event, the more likely the United States was to make positive gestures. From Table 7.3.i, there is a moderate, positive association between

MULTOOLS and AFFECT (gamma = .25). That is to say, when the United States used more types of foreign policy instruments in response to an event, it was more likely to express positive affect.

Table 7.3.j shows that a gamma score of .17 indicates a weak, although nearly moderate, relationship between MULISSUE and AFFECT. This implies that when more than one issue was involved, the United States tended to express positive affect. A quick glance at the row percentages of Table 7.3.j will ascertain the nature of the association between MULISSUE and AFFECT. When the circumstances involve multiple issues, rather than one issue, the percentage of positive expression increases about 10%. In contrast, the corresponding percentage drop is quite evenly distributed over the categories of negative and neutral expression. This implies only a weak connection between MULISSUE and AFFECT.

As shown in Table 7.3.b, the relationship between FOURPOW and AFFECT is significant, but rather weak, with a gamma score of -.07. Still, this would suggest that the more powerful the target nation, the more likely the United States was to make hostile gestures. As can be seen in Table 7.3.f, the observed significance level of the gamma value exceeds the conventional threshold of .05; therefore, I assert that there is no relationship between PARTY and AFFECT. The same can be said about the connection between ELECTION and AFFECT, because, as shown in Table 7.3.e, it fails even the chi-square test.

Table 7.4 examines the relationships between AFFECT and three nominal-level independent variables. In Table 7.4.a, a score of .24 in the Cramer's V measure indicates a moderate association between LOCATION and AFFECT. In row percentages, the

focus is on the three largest categories of LOCATION. The percentages, in the order of positive, neutral, and negative affect, are 19.89%, 11.45%, and 68.65% for the category "Between the sender and target"; 36.90%, 20.55%, and 42.55% for the category "Close to the target"; 57.22%, 8.87%, and 33.91% for the category "Symbolic relations/ideas." It should be noted that the discrepancies between positive and negative affect are quite significant. This supports a moderate association between LOCATION and AFFECT.

As shown in Table 7.4.b, there is a weak association between ADMINIST and AFFECT (Cramer's V = .13). The negative expressions in the two-term Reagan administration on average constituted about 37 percent of all expressions. This is twice as high as the percentage of negative expressions in the Clinton administration (= 18%). This pattern is consistent with the results shown in Table 7.3.d, where a moderate, positive relationship is found between PCOLDWAR and AFFECT. Beyond this, there are no other remarkable percentage shifts with respect to positive, neutral and negative affect among various administrations. Given the unimpressive score of Cramer's V, I tend to believe that the relationship between AFFECT and ADMINIST is rather weak.

I will now turn to Table 7.4.c. As suggested, there is a weak association between REGIONS and AFFECT (Cramer's V = .15). By calculating the row percentages, I found that about 15% of the U.S. action toward the Pacific or Western Europe was intended as a negative expression, while slightly more than 33% of the U.S. foreign policy acts toward North and Central America, Eastern Europe, Southern and Eastern Africa, Middle East and Northern Africa, or South East Asia, had negative affect.

At first glance, I was tempted to conclude that American foreign policy behavior showed some regional preferences. This conclusion, however, should be viewed with

caution. Any geographical classifying system tends to have limited utility because the within-group differences may exceed the between-group differences. For example, if one is speaking of foreign policy in Europe, it is important not to overlook the remarkable differences between the American foreign policy orientation toward Western Europe and the one toward Eastern Europe. Given the weak score of Cramer's V, I therefore concede that the relationship between REGIONS and AFFECT is indeed not impressive.

7.1.5 STACRAFT versus Other Independent Variables

Tables 7.5 and 7.6 illustrate the relationships between STACRAFT and other independent variables. Notably, in these two tables, only ELECTION fails the chi-square test. It is not surprising that, among ordinal independent variables in Table 7.5, MULTOOLS has the strongest correlation with STACRAFT (gamma = .87). These two variables seem to concurrently measure the extent to which the United States exhibited its commitment to another nation, with respect to a specific issue, by allocating available resources. The more salient an event, the more likely the United States was to adopt expensive policy options or multiple types of instruments.

In Table 7.5.c, a moderate, positive relationship is shown between AFFECT and STACRAFT (gamma = .37). Accordingly, I could infer that when the United States tended to show positive affect, it was more likely to employ costly foreign policies.

TABLE 7.5 STACRAFT versus Ordinal Independent Variables

Row = STACRAFT: 1=Least costly, 2=Second least costly, 3=Second most costly, 4=Most costly

(a) NEGOTIAB(ility)

	low 1	medium 2	high 3
1	182	712	70
2	253	1,294	398
3	50	183	128
4	55	349	15

	Value	Sig.
Chi-square	239.8937	.0000
Gamma	.1627	.0000
Somers' d	.1027	.0000

(b) FOURPOW

	small 1	middle 2	great 3	super 4
1	417	139	90	318
2	822	271	575	277
3	163	74	77	47
4	264	77	62	16

	Value	Sig.
Chi-square	366.7960	.0000
Gamma	-.1960	.0000
Somers' d	-.1246	.0000

(c) AFFECT

	negative -1	neutral 0	positive 1
1	489	244	231
2	410	233	1,302
3	119		242
4	148	2	269

	Value	Sig.
Chi-square	626.7789	.0000
Gamma	.3729	.0000
Somers' d	.2502	.0000

(d) PCOLDWAR

	before 0	after 1
1	844	120
2	1,450	495
3	257	104
4	322	97

	Value	Sig.
Chi-square	74.4995	.0000
Gamma	.2319	.0000
Somers' d	.1451	.0000

(e) ELECTION

	no 0	yes 1
1	782	182
2	1,545	400
3	294	67
4	329	90

	Value	Sig.
Chi-square	2.1815	.5356
Gamma	.0283	.4087
Somers' d	.0178	.4087

(f) PARTY

	Republican 0	Democrat 1
1	691	273
2	1,222	723
3	245	116
4	279	140

	Value	Sig.
Chi-square	23.2236	.0000
Gamma	.0710	.0129
Somers' d	.0445	.0129

TABLE 7.5 (cont'd)

(g) MULTAR (number of target nations involved)

	one	two	three	four	five	six	seven	8 or more
	1	2	3	4	5	6	7	8
1	626	186	53	35	26	21	9	8
2	1,094	234	97	97	85	246	66	26
3	260	24	26	27	10	9	1	4
4	309	62	19	9	4	12	1	3

	Value	Sig.
Chi-square	259.3906	.0000
Gamma	- .0372	.0844
Somers' d	- .0228	.0844

(h) DIRECT

	not direct	direct
	0	1
1	621	343
2	788	1,157
3	137	224
4	220	199

	Value	Sig.
Chi-square	165.8136	.0000
Gamma	.2216	.0000
Somers' d	.1433	.0000

(i) MULTOOLS (multiple tools)

	one	two	three	four
	1	2	3	4
1	964			
2	1,584	361		
3	83	220	58	
4	135	217	53	14

	Value	Sig.
Chi-square	1,505.44	.0000
Gamma	.8707	.0000
Somers' d	.6538	.0000

(j) MULISSUE (multiple issues)

	one	two/more
	0	1
1	820	144
2	1,490	455
3	290	71
4	347	72

	Value	Sig.
Chi-square	31.3756	.0000
Gamma	.0770	.0189
Somers' d	.0474	.0189

TABLE 7.6 STACRAFT versus Nominal Independent Variables

Row = STACRAFT: 1=Least costly, 2=Second least costly, 3=Second most costly, 4=Most costly

(a) LOCATION (location of the problem)

1=within the sender; 2=within the target; 3=between sender and target; 4=between the targets; 5=close to sender; 6=close to target; 7=far away from both; 8=within common space; 9=throughout the globe; 10=symbolic relations/ideas; 11=intergovernmental organization

	1	2	3	4	5	6	7	8	9	10	11
1	1	49	322	56	20	267	37	14	6	180	12
2	1	43	1,155	16	1	346	61	17	19	237	49
3		19	221	4	3	17				97	
4		45	197	13	2	61	10	25		61	5

	Value	Sig.
Chi-square	501.3277	.0000
Cramer's V	.2128	.0000
Lambda	.0419	.0000

(b) ADMINIST (various administrations)

	Carter	ReaganI	ReaganII	Bush	Clinton
	1	2	3	4	5
1	239	418	164	109	34
2	562	463	358	401	161
3	75	79	81	85	41
4	98	136	75	68	42

	Value	Sig.
Chi-square	178.1250	.0000
Cramer's V	.1269	.0000
Lambda	.0000	NA (not available)

(c) REGIONS (geographical regions)

0=North & Central America; 1=South America; 2=Western Europe; 3=Eastern Europe; 4=Central & Western Africa; 5=Southern & Eastern Africa; 6=Middle East & North Africa; 7=East & South Asia; 8=South Eastern Asia; 9=the Pacific

	0	1	2	3	4	5	6	7	8	9
1	136	21	50	339	12	41	247	76	40	2
2	235	67	312	415	39	109	406	259	77	26
3	60	25	40	87	5	29	37	55	22	1
4	81	14	26	33	10	22	148	62	17	6

	Value	Sig.
Chi-square	320.1732	.0000
Cramer's V	.1701	.0000
Lambda	.0000	NA (not available)

Based upon Table 7.5.d, a moderate, positive association can be found between PCOLDWAR and STACRAFT (gamma = .23). That is to say, Americans were more apt to adopt costly policy options in the post-Cold War period than in earlier periods. Note that without knowing whether those expensive instruments were rewards or punishments, I can say little about whether or not the United States has become more conflict-prone in the post-Cold War years.

Table 7.5.h shows a moderate, positive relationship between DIRECT and STACRAFT (gamma = .22). In other words, when the problem location was close to the United States, American foreign-policymakers tended to select more costly options. Moreover, in Table 7.5.b, a moderate but negative relationship can be seen between FOURPOW and STACRAFT (gamma = -.20). This implies that the more powerful the receiving nation, the less likely the United States was to choose expensive policies.

As depicted in Table 7.5.a, the relationship of NEGOTIAB vs. STACRAFT has a gamma score of .16, which is close to the .20 necessary for a moderate association. The row percentages in the upper half of Table 7.5.a also show that the United States tended to adopt more costly tools, for example, diplomacy rather than propaganda, when the issue became more negotiable. In the lower half of the table, however, this pattern does not hold. When the issue was substantive (or the most negotiable), the United States had a relatively strong tendency to adopt economic options, but was less inclined to use military tools. The relationship between NEGOTIAB and STACRAFT appears to be neither moderate nor strong, but indeed weak, as indicated by its gamma score below .20.

As portrayed in Table 7.5.j, a weak, positive association can be found between MULISSUE and STACRAFT (gamma = .08). This suggests that when more than one

issue was present in an event, the United States was more likely to opt for costly policy tools. As shown in Table 7.5.f, there is a weak, positive relationship between PARTY and STACRAFT (gamma = .07). That is to say, when there was a Democratic president in the White House, the United States tended to use more costly policy instruments. As is clear from Table 7.5.g, the relationship of MULTAR vs. STACRAFT neither exhibits an impressive gamma score (= -.04), nor meets the conventional criterion of .05 in its corresponding significance level (= .08). And as mentioned earlier, the relationship of ELECTION vs. STACRAFT fails even the chi-square test. Simply put, there is no relationship between MULTAR and STACRAFT, or between ELECTION and STACRAFT.

Table 7.6 shows the relationships between STACRAFT and three explanatory variables at the nominal level. Tables 7.6.a shows a moderate association between LOCATION and STACRAFT (Cramer's V = .21). The row percentages illustrate the use of diplomacy. In the category "Intergovernmental organization," the United States engaged in diplomatic action, rather than using other types of policy instruments, in 75% of events. The percentages for using diplomacy are 60.95%, 50.07%, and 41.22%, for the categories "Between the sender and target," "Close to the target," and "Symbolic relations/ideas," respectively. It is also noteworthy that in disputes "Within common space," the United States elected to apply military instruments 44.64 % of the time. In short, across the categories of LOCATION, some of the percentage differences in the use of various policy instruments are quite remarkable. This is in support of the assertion of a moderate association between LOCATION and STACRAFT.

The relationships between ADMINIST and STACRAFT (Cramer's V = .12), and between REGIONS and STACRAFT (.17) are significant but weak. As shown in Tables 7.6.b and 7.6.c, across different administrations and regions, the use of diplomacy has the highest percentage as compared to other types of policy options. The percentage changes across different administrations or regions indicate only a weak association. It should be pointed out that Table 7.6.c shows three regions to which the United States most frequently applied military instruments: the Middle East and North Africa (N = 148), North and Central America (81), and East and South Asia (62).

7.1.6 A Summary of Two-Way Tables

One of the aims of this chapter is to generate new hypotheses. Table 7.7 summarizes the results from the previous bivariate analysis. The comparison between PHYSICAL and STACRAFT illustrates the consequences of collapsing data. There are some inconsistencies in their correlational results with respect to the same independent variable. For instance, there is a moderate, positive relationship between DIRECT and STACRAFT, but it disappears when STACRAFT is replaced by the dummy variable, PHYSICAL. By contrast, there is no relationship between MULTAR and STACRAFT, while there is a moderate, negative relationship between MULTAR and PHYSICAL. Collapsing categories together may lead to no relationship or a significant one, regardless of what may be found originally. It will become apparent in the next chapter that there is a need for reformulating PHYSICAL to refine the bifurcation between verbal and physical action.

TABLE 7.7 Summary of Bivariate Relationships

Independent Variables	Propositions	Summary
NEGOTIAB	There is no relationship between NEGOTIAB and PHYSICAL in U.S foreign policy.	No
	The United States tends to show more positive affect when the issue is more negotiable.	Moderate
	The United States tends to use more costly tools when the issue is more negotiable.	Weak
FOURPOW	The United States tends to take verbal action when dealing with more powerful nations.	Moderate
	The United States tends to show more negative affect when dealing with more powerful nations.	Weak
	The United States tends to use less costly tools when dealing with more powerful nations.	Moderate
PCOLDWAR	The United States tends to take physical action after the end of the Cold War era than before.	Moderate
	The United States tends to show more positive affect after the end of the Cold War era than before.	Moderate
	The United States tends to use more costly tools after the end of the Cold War era than before.	Moderate
ELECTION	There is no relationship between ELECTION and PHYSICAL.	No
	There is no relationship between ELECTION and AFFECT.	No
	There is no relationship between ELECTION and STACRAFT.	No
PARTY	There is no relationship between PARTY and PHYSICAL.	No
	There is no relationship between PARTY and AFFECT.	No
	The United States tends to use more costly tools when the president is a Democrat.	Weak
MULTAR	The United States tends to take verbal action when more targets are involved.	Moderate
	The United States tends to show more positive affect when more targets are involved.	Moderate
	There is no relationship between MULTAR and STACRAFT.	No
DIRECT	There is no relationship between DIRECT and PHYSICAL.	No
	The United States tends to show more positive affect when the issue is more directly related to the United States.	Moderate
	The United States tends to use more costly tools when the issue is more directly related to the United States.	Moderate

TABLE 7.7 (cont'd)

Independent Variable	Hypothesis	Summary
MULTOOLS	The United States tends to take physical action when more types of policy tools are preferred.	Strong
	The United States tends to show more positive affect when more types of policy tools are preferred.	Strong
	The United States tends to adopt more costly instruments when more types of policy tools are preferred.	Strong
MULISSUE	There is no relationship between MULISSUE and PHYSICAL.	No
	The United States tends to show more positive affect when more than one issue is involved.	Weak
	The United States tends to use more costly tools when more than one issue is involved.	Weak
LOCATION	There is a weak relationship between LOCATION and PHYSICAL.	Weak
	There is a moderate relationship between LOCATION and AFFECT.	Moderate
	There is a moderate relationship between LOCATION and STACRAFT.	Moderate
ADMINIST	There is a weak relationship between ADMINIST and PHYSICAL.	Weak
	There is a weak relationship between ADMINIST and AFFECT.	Weak
	There is a weak relationship between ADMINIST and STACRAFT.	Weak
REGIONS	There is a weak relationship between REGIONS and PHYSICAL.	Weak
	There is a weak relationship between REGIONS and AFFECT.	Weak
	There is a weak relationship between REGIONS and STACRAFT.	Weak
AFFECT	The United States tends to take physical action when it wants to show more positive affect.	Weak
AFFECT	The United States tends to use more costly tools when it wants to show more positive affect.	Moderate
STACRAFT	The United States tends to show more positive affect when it chooses to use more costly tools.	Moderate

My primary concerns are with the effects of issue-type and actor on the selection of foreign policy. In terms of costliness, FOURPOW exhibits a moderate, negative relationship with both STACRAFT and PHYSICAL; but NEGOTIAB has a weak, positive relationship with STACRAFT and no significant relationship with PHYSICAL. In terms of the overall expression, NEGOTIAB displays a moderate, positive relationship with AFFECT, while FOURPOW shows only a weak, negative relationship. In addition, a moderate, positive relationship is found between AFFECT and STACRAFT. I regard this relationship as reciprocal. The hypothesis can be stated in two ways: (1) The United States tends to use more costly tools when it wants to show more positive affect; and (2) The United States tends to show more positive affect when it chooses to use more costly tools.

In assessing the relative importance of explanatory variables, I used the following criterion: based upon the results in Table 7.7, the existence of "at least a moderate relationship" indicates some importance in explaining U.S. foreign policy behavior. Accordingly, the important variables in explaining this behavior are NEGOTIAB, FOURPOW, PCOLDWAR, MULTAR, DIRECT, MULTOOLS and LOCATION. The less important, perhaps irrelevant, variables are ELECTION, PARTY, MULISSUE, ADMINIST, REGIONS. This conclusion based on the bivariate analysis, however, is merely tentative, because the inclusion of more variables may lead to a different result, as argued earlier. To have a better understanding of the hypotheses in Table 7.7, I will extend the scope of inquiry to multiple dimensional tables in the remainder of this chapter, and to multivariate analysis in the next chapter.

TABLE 7.8 Three-way Contingency Tables: Actor, Issue, and Statecraft

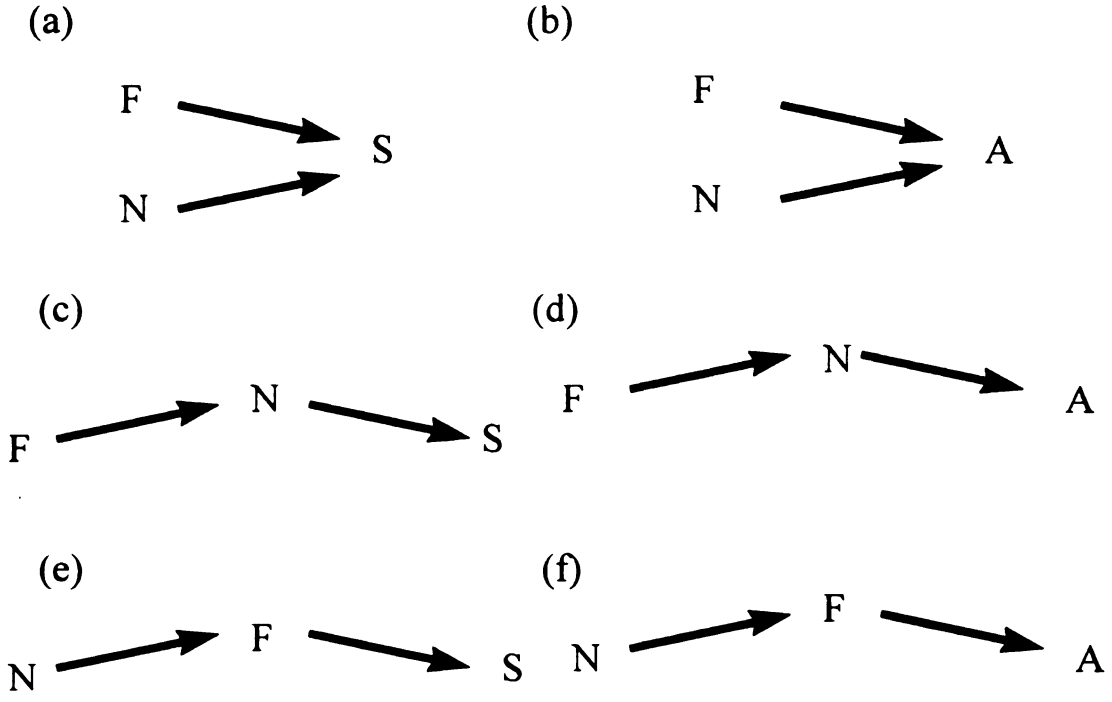
Row = STACRAFT Column = FOURPOW	Sig. of χ^2	Gamma	Sig. of gamma	Cases
Without Control	.0000	-.1960	.0000	3,689
With Control on NEGOTIAB:				
1 = low negotiability /transcendental issues	.0000	-.0839	.1323	540
2 = medium negotiability /symbolic issues	.0000	-.2911	.0000	2,538
3 = high negotiability /substantive issues	.0000	.0340	.6384	611
Row = STACRAFT Column = NEGOTIAB				
Without Control	.0000	.1627	.0000	3,689
With Control on FOURPOW:				
1 = small powers	.0000	.1400	.0017	1,666
2 = middle powers	.0000	.1509	.0121	561
3 = great powers	.0000	.0230	.7208	804
4 = superpower(s)	.0000	.3465	.0000	658
Row = NEGOTIAB Column = FOURPOW				
Without Control	.0000	.2921	.0000	3,689

7.2 ANALYSIS OF THREE-WAY TABLES

7.2.1 Causality between Issue, Actor, and Statecraft

As shown in Table 7.7, there is a moderate, negative relationship (gamma = -.20) between STACRAFT and FOURPOW, and a weak, positive relationship (= .16) between STACRAFT and NEGOTIAB. As shown in Table 7.8, the inclusion of NEGOTIAB as a controlling variable strengthens the relationship between STACRAFT and FOURPOW (= -.29) when the issue is symbolic, but that relationship disappears when the issue is transcendent or substantive. Using FOURPOW as an intervening variable, the relationship between STACRAFT and NEGOTIAB is slightly reduced when the target nation is a small or middle power. Furthermore, the relationship between STACRAFT and NEGOTIAB vanishes when a great power is the target but it is magnified with the involvement of a superpower.

According to Jaccard et al. (1990, 7-9), and Johnson and Joslyn (1986, 320), the relationships in both cases are indeed *specified* or *moderated* ones. Figure 7.1.a is the default model illustrating the causal effects of FOURPOW and NEGOTIAB on STACRAFT. The default model assumes that there is no three-factor interaction, and no correlation (i.e., independence) between FOURPOW and NEGOTIAB. As shown in Table 7.8, the casual relationship is in fact specified, existing only when controlling for a certain level of the other explanatory variable. Figures 7.1.c and 7.1.e depict the specified relationship between FOURPOW, NEGOTIAB and STACRAFT.



S = STACRAFT; A = AFFECT; F = FOURPOW; N = NEGOTIAB

FIGURE 7.1 Causal Connections in Three-Variable Situations

TABLE 7.9 Three-way Contingency Tables: Actor, Issue, and Affect

Row = AFFECT Column = FOURPOW	Sig. of χ^2	Gamma	Sig. of gamma	Cases
Without Control	.0000	-.0727	.0014	3,689
With Control on NEGOTIAB:				
1 = low negotiability /transcendental issues	.0008	-.1913	.0031	540
2 = medium negotiability /symbolic issues	.0000	-.1878	.0000	2,538
3 = high negotiability /substantive issues	.0000	.1154	.1358	611
Row = AFFECT Column = NEGOTIAB				
Without Control	.0000	.4540	.0000	3,689
With Control on FOURPOW:				
1 = small powers	.0000	.3489	.0000	1,666
2 = middle powers	.0000	.5279	.0000	561
3 = great powers	.0000	.2567	.0007	804
4 = superpower(s)	.0000	.4443	.0000	658
Row = NEGOTIAB Column = FOURPOW				
Without Control	.0000	.2921	.0000	3,689

7.2.2 Causality between Issue, Actor, and Affect

In Table 7.9, STACRAFT is replaced with AFFECT. There is a weak, negative relationship between FOURPOW and AFFECT. By including NEGOTIAB as a controlling variable, some nearly moderate, negative relationships between FOURPOW and AFFECT are found when the issue has low or medium negotiability. If the issue is highly negotiable, the sign changes from negative to positive and the gamma value fails to meet the conventional significance level.

Originally, the relationship between NEGOTIAB and AFFECT was a moderate, positive one. That is, when the issue becomes more negotiable, the United States is more likely to show positive affect. This a relationship still holds but varies with different clusters of target nations. The tendency is stronger with a middle power as the target, remains unchanged with a superpower as the target, and is weaker with a small or great power as the target.

These results appear to be similar to the previous ones; that is, they indicate a specified or moderated relationship underlying the causal structure of FOURPOW, NEGOTIAB and AFFECT. Figure 7.1.b portrays the default model, assuming the independence between two explanatory variables. Figures 7.1.d and 7.1.f illustrate the causal paths of a specified relationship between FOURPOW, NEGOTIAB and AFFECT, based on the results shown in Table 7.9.

7.3 LOGLINEAR AND LOGIT MODELING

Loglinear modeling, as an analytic technique for categorical data, has experienced diverse and growing development in the past few decades.[53] A major advantage of loglinear modeling is that it makes the analysis and interpretation of the multi-dimensional tables easier. Not only does it go beyond the traditional contingency-table analysis focusing on two-dimensional marginal totals, but it also allows for analyzing the interaction effects that are often hard to estimate and interpret.

I begin this section with a short introduction to loglinear and logit modeling. Logit modeling, as a special case of loglinear modeling, is applicable for cross-classified data with a distinction between the dependent and independent variables. Next I will proceed to examine the relationship between FOURPOW, NEGOTIAB, and STACRAFT, using these techniques. Finally, by adding AFFECT to the three-variable situation, I seek to explore a more complex causal structure underlying U.S foreign policy behavior. The purpose of applying loglinear and logit models is to ascertain whether or not the causal relationship between FOURPOW, NEGOTIAB, and STACRAFT asserted previously still holds. Moreover, I hope that the loglinear and logit modeling will bring new light to the causal structure of key variables in this study.

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[53] Comprehensive introductions to the loglinear models can be found in standard textbooks such as Agresti (1990), Bishop et al. (1975), Everitt (1992), and Fienberg (1980). For practice, Knoke and Burke (1980), Norusis (1995b), and Rice (1992) provide excellent expositions on the nuts and bolts of loglinear modeling.

7.3.1 Introduction to the Loglinear and Logit Models

In the general loglinear model, the array of cell frequencies of a multidimensional table are regarded as the dependent variable. The ensuing task is to estimate the expected frequencies by fixing various sets of marginal totals, depending on the types of models of interest. To introduce a glossary of basic notations for general loglinear analysis, I employ the most complex situation, containing four variables, in my applications as an example. A saturated loglinear model of S (= STACRAFT), A (= AFFECT), F (= FOURPOW) and N (= NEGOTIAB) can be presented as

$$\begin{aligned}\ln E(f_{ijkl}) = \ln F_{ijkl} = \theta &+ \lambda_i^S + \lambda_j^A + \lambda_k^F + \lambda_l^N \\ &+ \lambda_{ij}^{SA} + \lambda_{ik}^{SF} + \lambda_{il}^{SN} + \lambda_{jk}^{AF} + \lambda_{jl}^{AN} + \lambda_{kl}^{FN} \\ &+ \lambda_{ijk}^{SAF} + \lambda_{ijl}^{SAN} + \lambda_{ikl}^{SFN} + \lambda_{jkl}^{AFN} + \lambda_{ijkl}^{SAFN},\end{aligned} \tag{7.1}$$

where f_{ijkl} is the observed frequency in cell (i, j, k, l), F_{ijkl} is the expected frequency, θ is the grand mean of the logs of frequencies across all cells, and the λ's satisfy the usual constraints—individually, having a sum of zero. An effect (or interaction) is often indexed only by superscript, e.g., SA represents the parameters λ_{ij}^{SA} for all i and j.

In addition, loglinear analysis, more often than not, manifests a hierarchical feature, where a model containing a higher order term automatically implies the inclusion of lower order terms. Accordingly, notations for representing various models are greatly simplified. A single term, [SAFN], suffices to denote the saturated model in Equation 7.1. In another example, an unsaturated model of [SA][FN] will consist of λ_{ij}^{SA}, λ_{kl}^{FN}, all the first-order λ's, and θ. Technically, [SA] or [FN] belongs to *the generating class*,

which is not marginal to any other terms in the model (Edwards and Kreiner 1983, 554). Any loglinear model can be denoted by direct specification of the generating class.

When the nature of the data permits a distinction between the dependent and independent variables, i.e., in the asymmetric case, logit models rather than general loglinear models are appropriate. By necessary calculations, a direct transformation between the parameters of both loglinear and logit models can be attained. In this example, S (i.e., costliness of foreign policy tool used) can be viewed as the dependent variable. Then, the left hand side of Equation 7.1 can be converted to a form of log odds as

$$\ln \frac{f_{1jkl}}{f_{4jkl}} = (\lambda_1^S - \lambda_4^S) + (\lambda_{1j}^{SA} - \lambda_{4j}^{SA}) + (\lambda_{1k}^{SF} - \lambda_{4k}^{SF})$$

$$+ (\lambda_{1l}^{SN} - \lambda_{4l}^{SN}) + (\lambda_{1jk}^{SAF} - \lambda_{4jk}^{SAF}) + (\lambda_{1jl}^{SAN} - \lambda_{4jl}^{SAN})$$

$$+ (\lambda_{1kl}^{SFN} - \lambda_{4kl}^{SFN}) + (\lambda_{1jkl}^{SAFN} - \lambda_{4jkl}^{SAFN}). \qquad (7.2)$$

This is part of a baseline-category logit model, where the last category of S is used as the baseline (or reference) category for comparisons among multiple categories.[54] By reformulation, the above equation can be expressed as

$$\Phi_{jkl}^{S} = \beta^S + \beta_j^{SA} + \beta_k^{SF} + \beta_l^{SN} + \beta_{jk}^{SAF}$$

$$+ \beta_{jl}^{SAN} + \beta_{kl}^{SFN} + \beta_{jkl}^{SAFN}, \qquad (7.3)$$

where Φ_{jkl}^{S} is the log of the conditional odds of S, and the betas and lambdas have a corresponding relationship such as $\beta^S = \lambda_1^S - \lambda_4^S$, $\beta_j^{SA} = \lambda_{1j}^{SA} - \lambda_{4j}^{SA}$, and so on. In a special

[54] For other logit models such as adjacent-categories, continuation-ratio, and cumulative logits, see Agresti (1990, 307-46).

case of binary response, the betas and lambdas have a relationship such as $\beta^{S} = 2\lambda_{1}^{S}$, $\beta_{j}^{SA} = 2\lambda_{1j}^{SA}$, and so forth. This property is useful for interpreting the loglinear models concerning binary outcomes.

In addition, loglinear models can be used in modeling rates, and thus related to the Poisson models. Equation 7.1 is equivalent to

$$predicted\ count = E(f_{ijkl}) = e^{\theta+\sum\lambda}, \tag{7.4}$$

where the summation is over the λ's of a particular cell. If the dependent variable has something to do with the number of events, and it tends to follow a Poisson distribution, then the rate in a particular cell can be expressed as

$$\frac{predicted\ count}{number\ at\ risk} = e^{\theta+\sum\lambda}. \tag{7.5}$$

By taking the logarithm of both sides, Equation 7.5 is transformed to

$$\ln(predicted\ count) - \ln(number\ at\ risk) = \theta + \sum\lambda, \tag{7.6}$$

where the term, $\ln(number\ at\ risk)$, is also called an *offset* (Norusis 1995b, 198). As shown above, a transformation between the loglinear, logit, and Poisson (or multiplicative) models can be achieved, resting upon the types of models in which a researcher is interested.

A general loglinear analysis for a three-variable case involves19 possible models. In the case of four variables there are over 100 possible models, while with five variables the model counts can reach as many as several thousands (Rice 1992, 29). Model selection is an integral part of loglinear modeling. Generally, the chi-square or likelihood-ratio statistic is employed to evaluate fits among models. More efficient

techniques such as the screening method, are proposed by Benedetti and Brown (1978), and Brown (1976).[55] The basic principles of model selection are summarized as follows:

> *Parsimony* refers to the choice of a model that contains the fewest number of terms and yields a nonsignificant test-of-fit.
>
> A model with a *simple interpretation* of the effects may have more terms than a parsimonious model, but be less complicated to interpret. For example, a three-way interaction may be easier to interpret than three two-way effects.
>
> A hierarchical model that contains *all significant effects* is one for which the change in the test-of-fit due to the addition of any single term is non-significant, which the change due to the deletion of any single effect is significant. For a given data set several disjoint models may satisfy the criterion of all significant effects.
>
> With very large sample sizes, as in census data, tests of all effects are likely to be significant even when the effect is very small, but nonzero. Then a possible criterion is the *percent of* χ^2 relative to a baseline model; that is, the ratio of the likelihood ratio chi-square test of a model to that of a baseline model, such as one containing only main effects (Benedetti and Brown 1978, 681; Italics in original).

In particular, the Pearson chi-square statistic and the likelihood-ratio statistic are utilized in assessing fits among models. Following the notations of Equation 7.1, both statistics can be represented as

---

[55] Another technique for fitting loglinear models is the graphical method which utilizes the concept of conditional independence. Lucid introductions to the graphical method can be found in Edwards and Havranek (1985), Edwards and Kreiner (1983), and Havranek (1984). Since the saturated model is the best fitted model, as will be shown later, in the three-variable or four-variable scenario of this study, the graphical method is less useful here.

$$\chi^2 = \sum \frac{(f_{ijkl} - F_{ijkl})^2}{F_{ijkl}}, \tag{7.7}$$

$$L^2 = 2\sum f_{ijkl} \ln\left(\frac{f_{ijkl}}{F_{ijkl}}\right), \tag{7.8}$$

where $F_{ijkl} = E(f_{ijkl})$, namely, the expected cell frequencies.

The reasons for adopting L^2 rather than χ^2 are "(1) the expected frequencies are estimated by maximum likelihood methods and (2) L^2 can be partitioned uniquely for more powerful tests of conditional independence in multiway tables" (Knoke and Burke 1980, 30). Suppose that there are two models, M_1 and M_2, such that the marginal terms fitted by M_1 are a subset of those marginal terms fitted by M_2. Then, according to Brown (1976, 39), the additive property of the L^2 tests under partitioning can be expressed as

$$L^2(M_1) = L^2(M_1 | M_2) + L^2(M_2). \tag{7.9}$$

This additive property, however, does not hold for the χ^2 goodness-of-fit tests. In general, a large L^2 indicates that the hypothesized model does not provide a good fit to the data and should be rejected as a poor representation of the underlying relationship. In judging whether or not a model fits the data, a widely applied criterion for accepting a model is: the probability of a Type I error should range from .10 to .35 (Knoke and Burke 1980, 31).

TABLE 7.10 Formulas to Compute Expected Values and Degrees of Freedom

Model Type	Expected Frequency	Degrees of Freedom
[ ]	n/(I×J×K)	(I×J×K) - 1
[S]	f_{i++}/(J×K)	(I×J×K) - 1 - (I - 1)
[S] [F]	$(f_{i++} \times f_{+j+})$/(n×K)	(I×J×K) - 1 - (I - 1) - (J - 1)
[S] [F] [N]	$(f_{i++} \times f_{+j+} \times f_{++k})/n^2$	(I×J×K) - 1 - (I - 1) - (J - 1) - (K - 1)
[SF]	f_{ij+}/K	(I×J×K) - 1 - (I - 1) - (J - 1) - (I - 1)×(J - 1)
[SF] [N]	$(f_{ij+} \times f_{++k})$/n	(I×J×K) - 1 - (I - 1) - (J - 1) - (I - 1)×(J - 1) - (K - 1)
[SF] [SN]	$(f_{ij+} \times f_{i+k})/f_{i++}$	(I×J×K) - 1 - (I - 1) - (J - 1) - (K -1) - (I - 1)×(J - 1) - (I - 1)×(K - 1)
[SF] [SN] [FN]	iteration	(I×J×K) - 1 - (I - 1) - (J - 1) - (K - 1) - (I - 1)×(J - 1) - (I - 1)×(K - 1) - (J - 1)×(K - 1)
[SFN]	f_{ijk}	0

Source: Rice (1992, 17).

Note: Some would prefer to denote f_{i++} as $f_{i..}$. This is a matter of aesthetic taste in notations.

TABLE 7.11 Goodness-of-Fit Tests for All Loglinear Models in the Three-Variable Case

#	Model	L^2	*d.f.*	*Prob.*	χ^2	*d.f.*	*Prob.*
1	[ ]	5622.909	47	.000	8512.872	47	.000
2	[S]	3973.154	44	.000	5124.960	44	.000
3	[F]	4875.166	44	.000	6375.965	44	.000
4	[N]	3688.104	45	.000	4932.028	45	.000
5	[S] [F]	3225.411	41	.000	3506.966	41	.000
6	[S] [N]	2038.349	42	.000	2331.983	42	.000
7	[F] [N]	2940.360	42	.000	4006.647	42	.000
8	[S] [F] [N]	1290.605	39	.000	1601.493	39	.000
9	[SF]	2849.434	32	.000	2796.318	32	.000
10	[SN]	1785.319	36	.000	1933.347	36	.000
11	[FN]	2322.703	36	.000	2343.732	36	.000
12	[N] [SF]	914.628	30	.000	1046.022	30	.000
13	[F] [SN]	1037.575	33	.000	1154.178	33	.000
14	[S] [FN]	672.947	33	.000	681.471	33	.000
15	[SF] [SN]	661.598	24	.000	694.221	24	.000
16	[SF] [FN]	296.970	24	.000	353.335	24	.000
17	[SN] [FN]	419.917	27	.000	410.582	27	.000
18	[SF][SN][FN]	101.269	18	.000	103.495	18	.000
19	[SFN]	.000	0	1.000	.000	0	1.000

Note: The results are based upon the HILOGLINEAR commands in SPSS for Windows. The preference of the likelihood-ratio test (L^2) over the Pearson chi-square test (χ^2) is confirmed here. The exact partitioning rule holds for the calculation of L^2, but not for the calculation of χ^2. For example, in terms of L^2, Model #2 plus #3 minus #1 equals #5.

Another issue is the calculation of degrees of freedom. Table 7.10 shows how this calculation is done in the three-variable situation. For situations with more than three variables, the classic book of Bishop et al. (1975) on modeling cross-classified data provides further details about the calculation of degrees of freedom. Next, I will apply loglinear and logit modeling techniques to the three-variable situation related to the central question of this study.

7.3.2 A General Loglinear Analysis in the Three-Variable Situation

The primary concerns of this project are with the relationships between issues, actors, and the selection of statecraft. Here, I consider a general loglinear model containing S (STACRAFT), F (FOURPOW), and N (NEGOTIAB). To assess fits among loglinear models of a three-variable case, I can simply list results of all the possible scenarios, as shown in Table 7.11.[56]

Among 19 possible models, only the saturated model, # 19, provides a good fit to the data, according to the L^2 tests. Some have pointed out that the model-selection results of a saturated loglinear model often occur with large data sets (more than 1,500 cases). This seems to be the case with my data set, which contains 3,689 observations. Some scholars have elaborated on this large-sample-size problem regarding the model selection procedure in loglinear modeling as follows:

> The problem in judging best-fitting models is that L^2 is proportional to N. Hence, with potential samples in the hundreds of thousands or millions, virtually the only

[56] In the three-variable situation, other model-fitting techniques, such as the screening, method lead to the same final model, and those results are not reported here.

> model which will be found to fit the data is the saturated model, even when some of the higher order interactions are very small (Knoke and Burke 1980, 40).
>
> In very large samples, virtually any restricted model would be rejected as statistically untenable in favor of a less restricted model even though the discrepancies between the predicted cell frequencies under the competing models are trivial. ... Sample size also has an undesirable effect on exploratory analyses when the formal test is the only criterion for model selection; overrestricted models tend to be selected in very small samples and underrestricted models tend to be selected in very large samples (Bonett and Bentler 1983, 156).

The solution to the L^2 tests for large samples is to select a baseline model, and adopt an R^2 analog[57] which is formulated as:

$$\frac{(L^2\ Baseline\ Model) - (L^2\ Alternative\ Model)}{(L^2\ Baseline\ Model)}. \qquad (7.10)$$

A general criterion is that if the R^2 analog reaches at least 90%, then the alternative model is regarded as having a satisfactory fit to the data. After considering the nature of the data in which S is the dependent variable, and F and N are the independent variables, i.e., the logit model, [S] [FN] (Model # 14), is naturally the best choice for the baseline model. A meaningful comparison using the R^2 analog, then, can be made between the baseline model and more complex models such as [SF] [FN], [SN] [FN] and [SF] [SN] [FN] (Models # 16-18). The best alternative model to [S] [FN] is [SF] [SN] [FN], but its R^2 analog (= 84.95%) still fails to satisfy the 90% criterion. Consequently, the saturated model, [SFN], remains the best model fitting the data in general loglinear analysis.

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[57] Alternative formulas to address the large-sample-size problem with respect to the improvement likelihood-ratio chi-square test can be found in Bonett and Bentler (1983), and Raftery (1986).

7.3.3 A Logit Analysis in the Three-Variable Situation

The distinction between the dependent and independent variables (S vs. F or N) leads from the general loglinear model to the logit model. As will be shown, I could convert a saturated loglinear equation to a saturated logit equation and go on to interpret the findings. The saturated loglinear model containing S, F, and N, can be expressed as

$$\ln(E(f_{ijk})) = \ln(F_{ijk}) = \theta + \lambda_i^S + \lambda_j^F + \lambda_k^N + \lambda_{ij}^{SF} + \lambda_{ik}^{SN} + \lambda_{jk}^{FN} + \lambda_{ijk}^{SFN}. \quad (7.11)$$

The saturated logit model using the last category (i.e., = 4) of the dependent variable, S, as the baseline for comparison can be expressed as follows:

$$\ln\frac{f_{1jk}}{f_{4jk}} = (\lambda_1^S - \lambda_4^S) + (\lambda_{1j}^{SF} - \lambda_{4j}^{SF}) + (\lambda_{1k}^{SN} - \lambda_{4k}^{SN}) + (\lambda_{1jk}^{SFN} - \lambda_{4jk}^{SFN}),$$

$$\ln\frac{f_{2jk}}{f_{4jk}} = (\lambda_2^S - \lambda_4^S) + (\lambda_{2j}^{SF} - \lambda_{4j}^{SF}) + (\lambda_{2k}^{SN} - \lambda_{4k}^{SN}) + (\lambda_{2jk}^{SFN} - \lambda_{4jk}^{SFN}),$$

$$\ln\frac{f_{3jk}}{f_{4jk}} = (\lambda_3^S - \lambda_4^S) + (\lambda_{3j}^{SF} - \lambda_{4j}^{SF}) + (\lambda_{3k}^{SN} - \lambda_{4k}^{SN}) + (\lambda_{3jk}^{SFN} - \lambda_{4jk}^{SFN}), \quad (7.12)$$

or equivalently,

$$\ln\frac{f_{1jk}}{f_{4jk}} = \beta_1^S + \beta_{1j}^{SF} + \beta_{1k}^{SN} + \beta_{1jk}^{SFN},$$

$$\ln\frac{f_{2jk}}{f_{4jk}} = \beta_2^S + \beta_{2j}^{SF} + \beta_{2k}^{SN} + \beta_{2jk}^{SFN},$$

$$\ln\frac{f_{3jk}}{f_{4jk}} = \beta_3^S + \beta_{3j}^{SF} + \beta_{3k}^{SN} + \beta_{3jk}^{SFN}. \quad (7.13)$$

Note that some parameters in Equation 7.11, such as θ, λ_j^F, λ_k^N, and λ_{jk}^{FN}, have become irrelevant to the logit model because they are canceled out during the transformation. On the left-hand side of Equation 7.12 or Equation 7.13 are the log odds. For a better interpretation, odds ratios are often preferred over the log odds. A multiplicative form of Equation 7.13, after applying the antilogarithm to both sides, can be expressed as

$$\frac{f_{ijk}}{f_{4jk}} = e^{\beta_i^S + \beta_{ij}^{SF} + \beta_{ik}^{SN} + \beta_{ijk}^{SFN}}. \qquad (7.14)$$

Then the odds change on the left-hand side can be evaluated based upon the exponential rates with different combinations of β's on the right-hand side in Equation 7.14.

An inherent problem in estimating a loglinear model is overparameterization, that is, the number of parameters exceeds the number of observations. In my case, there are 100 lambda parameters but only 48 cells of frequencies. (See Tables 7.12 and 7.13.) To solve this problem, some types of constraints must be imposed on the coefficients. One common solution is to apply regression-like constraints—zeros are assigned to the omitted (redundant) parameters, resulting in dummy-coded coefficients. The other is to apply anova-like constraints—the parameter of an omitted category equals -1 times the sum of the remaining parameters in the pertinent group, leading to effect-coded coefficients.

Here I focus on the results with effect-coded coefficients only. To be exact, the anova-like constraints placed on Equation 7.11 are

$$\sum_i \lambda_i^S = 0, \quad \sum_j \lambda_j^F = 0, \quad \sum_k \lambda_k^N = 0,$$

$$\sum_i \lambda_{ij}^{SF} = \sum_j \lambda_{ij}^{SF} = 0, \quad \sum_i \lambda_{ik}^{SN} = \sum_k \lambda_{ik}^{SN} = 0, \quad \sum_j \lambda_{jk}^{FN} = \sum_k \lambda_{jk}^{FN} = 0, \text{ and}$$

$$\sum_i \lambda_{ijk}^{SFN} = \sum_j \lambda_{ijk}^{SFN} = \sum_k \lambda_{ijk}^{SFN} = 0. \qquad (7.15)$$

Table 7.12 lists both the observed and expected frequencies for the three-variable, saturated loglinear model. Note that there are no discrepancies between these two sets of numbers, i.e., residuals are equal to zeroes, because a saturated model is applied.

Table 7.13 presents parameter estimation of the saturated loglinear equation by the STATA program, the corresponding logit equation by direct calculations, and the similar results of the logit equation that can be obtained by running SPSS for Windows. All the coefficients in Table 7.13 are effect-coded. A simple procedure for verifying the accuracy of estimated parameters is to insert actual values on both sides of Equations 7.11 and 7.13. After a dozen or so trials, my calculations support the accuracy of parameter estimates by both computer packages as shown in Table 7.13. To exemplify how this can be done, the calculations regarding the log odds of f_{332} vs. f_{432} are provided below:

The left-hand side	*The right-hand side*
$\ln \frac{f_{332}}{f_{432}}$	$\beta_3^S + \beta_{33}^{SF} + \beta_{32}^{SN} + \beta_{332}^{SFN}$
= ln (27.50/51.50)	= .4104 - .6742 - .9676 + .6041
= -.6273958	= -.6273

(7.16)

TABLE 7.12 Observed and Expected Frequencies in the Three-Variable Situation

STACRAFT (costliness)	FOURPOW (power)	NEGOTIAB (negotiability)	Observed Frequency	Expected Frequency
least	small	low	94.50 (33.75)	94.50 (33.75)
least	small	medium	301.50 (23.39)	301.50 (23.39)
least	small	high	22.50 (21.84)	22.50 (21.84)
least	middle	low	48.50 (33.68)	48.50 (33.68)
least	middle	medium	80.50 (22.93)	80.50 (22.93)
least	middle	high	11.50 (15.97)	11.50 (15.97)
least	great	low	7.50 (17.05)	7.50 (17.05)
least	great	medium	60.50 (15.13)	60.50 (15.13)
least	great	high	23.50 (6.42)	23.50 (6.42)
least	super	low	33.50 (41.88)	33.50 (41.88)
least	super	medium	271.50 (53.66)	271.50 (53.66)
least	super	high	14.50 (18.59)	14.50 (18.59)
second least	small	low	126.50 (45.18)	126.50 (45.18)
second least	small	medium	649.50 (50.39)	649.50 (50.39)
second least	small	high	47.50 (46.12)	47.50 (46.12)
second least	middle	low	56.50 (39.24)	56.50 (39.24)
second least	middle	medium	180.50 (51.42)	180.50 (51.42)
second least	middle	high	35.50 (49.31)	35.50 (49.31)
second least	great	low	27.50 (62.50)	27.50 (62.50)
second least	great	medium	260.50 (65.13)	260.50 (65.13)
second least	great	high	288.50 (78.83)	288.50 (78.83)
second least	super	low	44.50 (55.63)	44.50 (55.63)
second least	super	medium	205.50 (40.61)	205.50 (40.61)
second least	super	high	28.50 (36.54)	28.50 (36.54)
second most	small	low	21.50 (7.68)	21.50 (7.68)
second most	small	medium	116.50 (9.04)	116.50 (9.04)
second most	small	high	26.50 (25.73)	26.50 (25.73)
second most	middle	low	28.50 (19.79)	28.50 (19.79)
second most	middle	medium	27.50 (7.83)	27.50 (7.83)
second most	middle	high	19.50 (27.08)	19.50 (27.08)
second most	great	low	.50 (1.14)	.50 (1.14)
second most	great	medium	27.50 (6.88)	27.50 (6.88)
second most	great	high	50.50 (13.80)	50.50 (13.80)
second most	super	low	1.50 (1.88)	1.50 (1.88)
second most	super	medium	13.50 (2.67)	13.50 (2.67)
second most	super	high	33.50 (42.95)	33.50 (42.95)
most	small	low	37.50 (13.39)	37.50 (13.39)
most	small	medium	221.50 (17.18)	221.50 (17.18)
most	small	high	6.50 (6.31)	6.50 (6.31)
most	middle	low	10.50 (7.29)	10.50 (7.29)
most	middle	medium	62.50 (17.81)	62.50 (17.81)
most	middle	high	5.50 (7.64)	5.50 (7.64)
most	great	low	8.50 (19.32)	8.50 (19.32)
most	great	medium	51.50 (12.88)	51.50 (12.88)
most	great	high	3.50 (.96)	3.50 (.96)
most	super	low	.50 (.63)	.50 (.63)
most	super	medium	15.50 (3.06)	15.50 (3.06)
most	super	high	1.50 (1.92)	1.50 (1.92)

Note: A value of .50 is added to each cell for estimation purposes.

TABLE 7.13 Parameter Estimates of the Saturated Loglinear Model

#	λ's/β's [superscript, subscript]	Loglinear Effect coded by STATA	Logit Effect coded by calculation	Logit Effect coded by SPSS
1	Const.	3.3930**		
2	S, 1	.3736**	1.3603	1.3560
3	S, 2	1.1894**	2.1761	2.1761
4	S, 3	- .5763**	.4104	.4104
5	S, 4	(.9867)	(- 3.9468)	(- 3.9425)
6	SF, 11	- .1160	- .5183	- .5312
7	SF, 12	- .2476*	- .5199	- .5157
8	SF, 13	- .4232**	- .7136	- .7093
9	SF, 14	(.7868)	(1.7518)	(1.7562)
10	SF, 21	- .3470**	- .7493	- .7493
11	SF, 22	- .3677**	- .6400	- .6401
12	SF, 23	.5166**	.2262	.2262
13	SF, 24	(.1981)	(1.1631)	(1.1632)
14	SF, 31	.0607	- .3416	- .3416
15	SF, 32	.3430*	.0707	.0707
16	SF, 33	- .3838	- .6742	- .6742
17	SF, 34	(- .0199)	(.9451)	(.9451)
18	SF, 41	(.4023)	(1.6092)	(1.6221)
19	SF, 42	(.2723)	(1.0892)	(1.0851)
20	SF, 43	(.2904)	(1.1616)	(1.1573)
21	SF, 44	(- .9650)	(- 3.8600)	(- 3.8645)
22	SN, 11	.4069**	.2861	.2775
23	SN, 12	.0417	- .4638	- .4596
24	SN, 13	(- .4486)	(.1777)	(.1821)
25	SN, 21	.0850	- .0358	- .0358
26	SN, 22	- .0851	- .5906	- .5906
27	SN, 23	(.0001)	(.6242)	(.6264)
28	SN, 31	- .6127**	- .7335	- .7335
29	SN, 32	- .4621**	- .9676	- .9677
30	SN, 33	(1.0748)	(1.7011)	(1.7012)
31	SN, 41	(.1208)	(.4832)	(.4918)
32	SN, 42	(.5055)	(2.0220)	(2.0179)
33	SN, 43	(- .6263)	(- 2.5052)	(- 2.5097)

TABLE 7.13 (cont'd)

#	λ's/β's [superscript, subscript]	Loglinear Effect coded by STATA	Logit Effect coded by calculation	Logit Effect coded by SPSS
34	SFN, 111	- .0975	- .1523	- .1780
35	SFN, 112	- .1763	- .0698	- .0568
36	SFN, 113	(.2738)	(.2221)	(.2348)
37	SFN, 121	- .0555	.4038	.4124
38	SFN, 122	- .0377	- .1233	- .1276
39	SFN, 123	(.0932)	(- .2805)	(- .2848)
40	SFN, 131	- .0364	- 1.0580	- 1.0494
41	SFN, 132	- .1197	- .0218	- .0261
42	SFN, 133	(.1561)	(1.0798)	(1.0755)
43	SFN, 141	(.1894)	(.8065)	(.8150)
44	SFN, 142	(.3337)	(.2149)	(.2105)
45	SFN, 143	(- .5231)	(- 1.0214)	(- 1.0255)
46	SFN, 211	- .1204	- .1752	- .1752
47	SFN, 212	.1330	.2395	.2395
48	SFN, 213	(- .0126)	(- .0643)	(- .0643)
49	SFN, 221	- .2768*	.1825	.1825
50	SFN, 222	.2008*	.1152	.1151
51	SFN, 223	(.0760)	(- .2977)	(- .2976)
52	SFN, 231	- .1709	- 1.1925	- 1.1925
53	SFN, 232	- .2886*	- .1907	- .1907
54	SFN, 233	(.4595)	(1.3832)	(1.3832)
55	SFN, 241	(.5681)	(1.1852)	(1.1852)
56	SFN, 242	(- .0452)	(- .1640)	(- .1639)
57	SFN, 243	(- .5229)	(- 1.0212)	(- 1.0213)
58	SFN, 311	.1631	.1083	.1084
59	SFN, 312	.1498	.2563	.2563
60	SFN, 313	(- .3129)	(- .3646)	(- .3647)
61	SFN, 321	.7916**	1.2509	1.2510
62	SFN, 322	- .2487	- .3343	- .3344
63	SFN, 323	(- .5429)	(- .9166)	(- .9166)
64	SFN, 331	- .8143	- 1.8359	- 1.8359
65	SFN, 332	.5062	.6041	.6041
66	SFN, 333	(.3081)	(1.2318)	(1.2318)
67	SFN, 341	(- .1404)	(.4767)	(.4765)
68	SFN, 342	(- .4073)	(- .5261)	(- .5260)
69	SFN, 343	(.5477)	(.0494)	(.0495)

TABLE 7.13 (cont'd)

#	λ's/β's [superscript, subscript]	Loglinear Effect coded by STATA	Logit Effect coded by calculation	Logit Effect coded by SPSS
70	SFN, 411	(.0548)	(.2192)	(.2448)
71	SFN, 412	(- .1065)	(- .4260)	(- .4390)
72	SFN, 413	(.0517)	(.2068)	(.1942)
73	SFN, 421	(- .4593)	(- 1.8372)	(- 1.8459)
74	SFN, 422	(.0856)	(.3424)	(.3469)
75	SFN, 423	(.3737)	(1.4948)	(1.4990)
76	SFN, 431	(1.0216)	(4.0864)	(4.0778)
77	SFN, 432	(- .0979)	(- .3916)	(- .3873)
78	SFN, 433	(- .9237)	(- 3.6948)	(- 3.6905)
79	SFN, 441	(- .6171)	(- 2.4684)	(- 2.4767)
80	SFN, 442	(.1188)	(.4752)	(.4794)
81	SFN, 443	(.4983)	(1.9932)	(1.9973)
82	F, 1	.8236**		
83	F, 2	.0518		
84	F, 3	- .2519*		
85	F, 4	(- .6235)		
86	N, 1	- .6714**		
87	N, 2	1.1427**		
88	N, 3	(- .4713)		
89	FN, 11	.4880**		
90	FN, 12	.2265**		
91	FN, 13	(- .7145)		
92	FN, 21	.6309**		
93	FN, 22	- .3291**		
94	FN, 23	(- .3018)		
95	FN, 31	- .7757**		
96	FN, 32	- .0535		
97	FN, 33	(.8292)		
98	FN, 41	(- .3432)		
99	FN, 42	(.1561)		
100	FN, 43	(.1871)		

Note: 1. Blanks indicate that there are no values for parameters.
2. Within the parentheses are calculated values for redundant parameters.
3. The results of the loglinear model are based upon the *loglin.ado* program written by Dr. Dean H. Hudson, University of Nevada, Reno, for STATA users.

TABLE 7.14 Logit Differences and Odds Ratios in the Three-Variable Situation

(a) Propaganda vs. Military Instruments

Logit Difference

FOURPOW		NEGOTIAB	
F = 1	-2.270	N = 1	.108
F = 2	-2.272	N = 2	- .897
F = 3	-2.465	N = 3	0*
F = 4	0*		

Odds Ratio

FOURPOW		NEGOTIAB	
F = 1	.1033	N = 1	1.115
F = 2	.1031	N = 2	.4080
F = 3	.0850	N = 3	1*
F = 4	1*		

FOURPOW × NEGOTIAB

	F = 1	F = 2	F = 3	F = 4
N = 1	-1.293	- .738	-2.394	1.936
N = 2	-1.960	-2.015	-2.107	.595
N = 3	-1.027	-1.531	- .364	0*

FOURPOW × NEGOTIAB

	F = 1	F = 2	F = 3	F = 4
N = 1	.2746	.4780	.0913	6.933
N = 2	.1409	.1333	.1216	1.813
N = 3	.3582	.2164	.6948	1*

(b) Diplomacy vs. Military Instruments

Logit Difference

FOURPOW		NEGOTIAB	
F = 1	-1.912	N = 1	- .662
F = 2	-1.803	N = 2	-1.217
F = 3	- .937	N = 3	0*
F = 4	0*		

Odds Ratio

FOURPOW		NEGOTIAB	
F = 1	.1477	N = 1	.5157
F = 2	.1648	N = 2	.2961
F = 3	.3918	N = 3	1*
F = 4	1*		

FOURPOW × NEGOTIAB

	F = 1	F = 2	F = 3	F = 4
N = 1	-1.729	-1.262	-1.770	1.544
N = 2	-1.869	-1.884	-1.323	- .360
N = 3	- .956	-1.080	1.468	0*

FOURPOW × NEGOTIAB

	F = 1	F = 2	F = 3	F = 4
N = 1	.1775	.2832	.1703	4.684
N = 2	.1543	.1520	.2662	.6978
N = 3	.3846	.3397	4.338	1*

(c) Economic vs. Military Instruments

Logit Difference

FOURPOW		NEGOTIAB	
F = 1	-1.287	N = 1	-2.435
F = 2	- .874	N = 2	-2.669
F = 3	-1.619	N = 3	0*
F = 4	0*		

Odds Ratio

FOURPOW		NEGOTIAB	
F = 1	.2762	N = 1	.0876
F = 2	.4171	N = 2	.0693
F = 3	.1980	N = 3	1*
F = 4	1*		

FOURPOW × NEGOTIAB

	F = 1	F = 2	F = 3	F = 4
N = 1	-3.662	-2.108	-5.939	-2.007
N = 2	-3.749	-3.927	-3.733	-3.244
N = 3	-1.701	-1.840	- .437	0*

FOURPOW × NEGOTIAB

	F = 1	F = 2	F = 3	F = 4
N = 1	.0257	.1215	.0026	.1344
N = 2	.0236	.0197	.0239	.0390
N = 3	.1826	.1588	.6460	1*

Note: *'s denote reference points (here, the last categories) for the remaining odds ratios.

Basically, my results support Alba's (1987) assertion that through direct calculations, a general loglinear model with effect-coded coefficients can be converted to a logit model with effect-coded coefficients. Moreover, as shown in Table 7.13, the logit outcome generated by the STATA program is consistent with the one produced by SPSS for Windows.[58]

For interpretation, I follow Alba's (1987) approach instead of delving into more complicated techniques proposed by Clogg and Eliason (1987), Elliott (1988), Kaufman and Schervish (1986), and Swafford (1980). Accordingly, a simple way to interpret the logit results is to translate the logit differences into odds ratios, as illustrated in Table 7.14.[59]

First, I used the last categories of each variable, not the geometric average across the cells, as the reference points. Moreover, because STACRAFT as the dependent variables has four levels, there are six distinctive odds, based on the formula (k[k-1]/2) suggested by Alba (1987, 70).

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[58] SPSS for Windows provides additional statistics for the dispersion (i.e., spread) in the dependent variable. In the saturated logit model, I obtain the following test scores: Entropy = .076, and Concentration = .063. These measures seem relatively small if their functions are regarded as analogous to R^2. Some scholars have pointed out, however, that this may be misleading. Small values in the Entropy or Concentration index do not preclude the possibility that the variables in question are highly correlated (Norusis 1995b, 215-6).

[59] Long (1984) examines the estimability of individual parameters, differences of parameters, and functions of parameters in the loglinear model. He explicates the meaning of estimability: "A linear function of parameters is estimable if its value is invariant to the particular solution [to the problem of overparameterization] that is used" (p. 10). While the odds ratios (i.e., differences of parameters) in the loglinear model are always estimable, individual parameters may not be so. For the complex and often highly problematic nature of interpreting nonestimable functions, I go straight to the discussions of odds ratios.

Table 7.14 lists only the results of three distinctive odds: propaganda, diplomacy, or economic vs. military instruments, converted from the logit equation by the STATA program in Table 7.13. Because of limited space, my interpretations will focus in particular on the odds ratios of propaganda vs. military instruments shown in Table 7.14.a.

Under the heading of FOURPOW in Table 7.14.a, the odds ratios imply that the United States was about 10 times more likely to launch propaganda than to apply military tools when the counterpart was a superpower, as compared to a small, middle, or great power. Furthermore, under the heading of NEGOTIAB in Table 7.14.a, the odds of employing propaganda instead of military policy were about the same, when the primary issues were either transcendent or substantive. By contrast, the odds ratios of adopting propaganda vs. military instruments doubled when the primary issues were symbolic.[60]

As to the higher-order interaction of FOURPOW and NEGOTIAB, I do not see a specific pattern in the odds ratios of propaganda vs. military instruments. The probability of adopting propaganda instead of military policy when the target was a superpower and the issue was substantive was generally higher, by 1.4 to 10 times, than under other circumstances. The only two exceptions occurred when the opponent was a superpower.

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[60] Theoretically, the odds ratios derived here should be the same as those generated by the observed data. Through direct calculations based on Table 7.5.a, the odds ratios of propaganda vs. military instruments are .080 for F = 1, .091 for F = 2, .073 for F = 3, if F = 4 is used as the reference point. Moreover, based on the results shown in Table 7.5.b, the calculated odds ratios of propaganda vs. military instruments are .709 for N = 1, .437 for N = 2, if N = 3 is used as the reference point. There are some discrepancies between the odds ratios in Table 7.14.a and those calculated from Tables 7.5.a and 7.5.b, but they are not great.

The odds ratio was 7 times higher when the issue was transcendent, and nearly 2 times higher when the issue was symbolic, than when the issue was substantive.

7.3.4 A Loglinear Analysis in the Four-Variable Situation

The dependent variable, STACRAFT, concerns the costliness of various foreign policy options. It does not provide any hint, however, about whether a certain action was a reward or a punishment. This shortcoming can be overcome by adding AFFECT to the previous three-variable model. As complex as a four-variable loglinear model would be, I could apply certain screening procedures to selecting the best fitting model. In doing so, I may shed some light on the causal structure of the four-variable model.

In contrast to 19 possible hierarchical models in the three-variable situation, the four-variable scenario has 166 possible hierarchical models (Brown 1976, 38). It would be burdensome to list all the possible models with their corresponding χ^2 and L^2 statistics. In the face of problems like this, I utilized the improvement chi-square tests to first determine the appropriate level of complexity that should be included in the model at hand, and then to explore the importance of each individual term that contributes to the model.

Table 7.15.a presents the results of testing the null hypothesis that K-order and higher-order effects are zero. The entry K = 4 is the goodness-of-fit statistic for a model without the fourth-order interaction. In a similar fashion, the entry K = 3 is the goodness-of-fit statistic for a model without the third- and fourth-order interaction.

TABLE 7.15 Testing the Effect of Interaction Terms of a Particular Order

Four-Variable Case: STACRAFT, AFFECT, FOURPOW, and NEGOTIAB

(a) Tests that K-way and higher order effects are zero.

K	*d.f.*	L^2	*Prob.*	χ^2	*Prob.*	Iteration
4	36	64.632	.0024	61.199	.0055	5
3	96	298.713	.0000	322.458	.0000	6
2	133	2636.756	.0000	3538.270	.0000	2
1	143	8019.264	.0000	16825.009	.0000	0

(b) Tests that K-way effects are zero.

K	*d.f.*	L^2	*Prob.*	χ^2	*Prob.*	Iteration
1	10	5382.508	.0000	13286.738	.0000	0
2	37	2338.043	.0000	3215.812	.0000	0
3	60	234.081	.0000	261.259	.0000	0
4	36	64.632	.0024	61.199	.0055	0

Note: L^2 is the likelihood-ratio statistic, and χ^2 is the Pearson chi-square statistic. Degrees of freedom (*d.f.*) used for these tests have not been adjusted for structural or sampling zeros. Therefore, tests using these degrees of freedom may be conservative.

A small value of the observed significance level implies a rejection of the null hypothesis that K-order and higher-order effects are zero. In other words, small observed significance levels suggest that terms of a particular order should not be excluded in the subsequent modeling. As can be seen in Table 7.15.a, all levels of terms should be included.

Table 7.15.b presents the results of testing the null hypothesis that the effects of a particular order are zero. The likelihood-ratio chi-square test scores signify the improvement of model fit when the effects of a particular order are included. Again, the outcome shown in Table 7.15.b suggests an inclusion of terms across all levels.

The previous two tables examine the collective importance of terms of the same order. They do not provide information about the importance of individual terms. To address this problem, Brown (1976) proposes the use of marginal and partial association. Both procedures utilize the improvement chi-square statistics (Rice 1992, 32).

In a simplified fashion, partial association tests the difference between the most complex model of the K-th order and a specific model in which the targeted term is excluded. For instance, the partial association for [SA] can be obtained by comparing the model [SA] [SF] [SN] [AF] [AN] [FA] to the model [SF] [SN] [AF] [AN] [FN].[61] Or the partial association for [SAF] requires a comparison between the model [SAF] [SAN] [SFN] [AFN] and the model [SAN] [SFN] [AFN].

[61] The other formula for calculating the partial association of [SA] is to compare the model [SA] [SFN] [AFN] and the model [SFN] [AFN]. The formula suggested in the text is preferable because of the principle of parsimony (Brown 1976, 39).

TABLE 7.16 Partial and Marginal Association in the Four-Variable Case

	Partial Association			*Marginal Association*		
Term	*Chi Square*	*d.f.*	*Prob.*	*Chi Square*	*d.f.*	*Prob.*
S	1649.756	3	.0000			
A	1050.202	2	.0000			
F	747.743	3	.0000			
N	1934.806	2	.0000			
SA	540.423	6	.0000	724.904	6	.0000
SF	186.845	9	.0000	375.979	9	.0000
SN	175.048	6	.0000	253.030	6	.0000
AF	187.789	6	.0000	399.312	6	.0000
AN	188.320	4	.0000	288.692	4	.0000
FN	512.634	6	.0000	617.657	6	.0000
SAF	63.959	18	.0000	47.381	18	.0002
SAN	47.426	12	.0000	43.598	12	.0000
SFN	107.036	18	.0000	101.269	18	.0000
AFN	31.867	12	.0015	38.343	12	.0001
SAFN				64.632	36	.0024

Note: The results were obtained by following the definitions of Brown (1976) and using SPSS for Windows. Under the heading *Chi Square* are likelihood ratio improvement statistics. The command used for one-by-one calculations is HILOGLINEAR. The LOGLINEAR command is not suitable for such calculations. The resulting numbers on the left-hand side can also be obtained by using the built-in program for partial association under HILOGLINEAR.

Marginal association makes a comparison between the most complex model of the K-th order and the most complex model of the (K-1)th order. For example, the marginal association for [SAF] can be sought by comparing the model [SAF] to the model [SA] [SF] [AF].

Table 7.16 presents both the partial and marginal associations of a four-variable model, consisting of S (STACRAFT), A (AFFECT), F (FOURPOW), and N (NEGOTIAB). As can be seen in Table 7.16, all observed significance levels are small; this means that no individual terms should be deleted. That is to say, a saturated loglinear model is the final choice that has survived the model selection procedure. Again, the results of a saturated model may be ascribed to the large-sample-size problem with regard to the improvement chi-square statistics.

The same techniques of logit modeling in Table 7.14 are applicable here as well.[62] Nevertheless, I forgo the attempt to interpret the four-variable, saturated logit model. The involvement of a great number (hundreds) of parameters would make the calculations a laborious and unwieldy task. Moreover, the outcome of a saturated logit model would not shed much light on the causal structure.

Goodman (1973) has made some efforts in establishing the loglinear or logit analysis as an analogy to path analysis for categorical data in causal modeling.[63] The

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[62] In fitting a logit model (with two dependent variables, S and A, and two independent variables, F and N), the baseline model is [SA] [FN] as a starting point for comparison. See Brown et al. (1983), for an application of the loglinear modeling techniques to the two-dependent-variable structure.

[63] Another line of inquiry utilizes the techniques of standardization to explore the causal structure of cross-classified data. Davis (1984) provides a lucid introduction and a list of reference for applications of such techniques.

limitations of the loglinear or logit models to achieving a parallel status as the path analysis are

(i) there is no calculus for path coefficients;

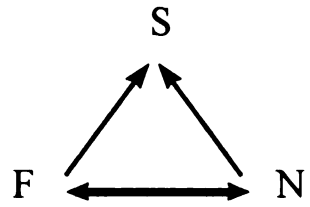
(ii) because there is no calculus for path coefficients, there is no formal way to decide what values to assign to arrows not explicitly accounted for by a system of logit models, except by incomplete analogy with the regular path analysis techniques;

(iii) multiple categories for a variable lead to multiple coefficients to be associated with a given arrow in the diagram;

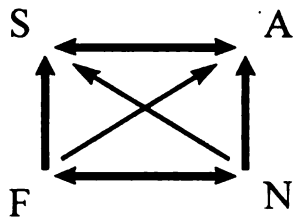
(iv) the existence of three-factor and higher-order interaction terms in a loglinear model lead to a complexity that cannot be handled without resorting to a more involved diagrammatic representation (Fienberg 1980, 120).

Figure 7.2 is a graphical representation to sum up the previous results of loglinear and logit modeling. Figure 7.2.a depicts the causal diagram of the three-variable, saturated logit model, while Figure 7.2.b illustrates the causal mechanism resulting from the four-variable, saturated logit model with two dependent variables. Figure 7.2.c contains two alternative models for the four-variable, saturated logit model. On the left side, one actor's (the target's) national capability (FOURPOW) and the issue at hand (NEGOTIAB) stimulate the other actor's (the sender's) positive or negative reaction (AFFECT), and the sender then chooses among probable policy instruments in terms of costs (STACRAFT). On the right side, the questions "Who (which nation) is involved?" and "What (which issue) is at stake?" determine the sender's choice among viable policy options, and that choice reflects to the sender's affect toward the target.

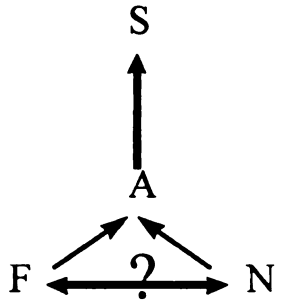
(a) A Three-Variable Saturated

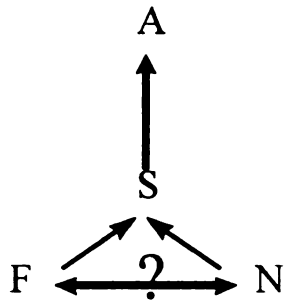


(b) A Four-Variable Saturated



(c) Alternative Causal Models to the Four-Variable Saturated





S=STACRAFT; A=AFFECT; F=FOURPOW; N=NEGOTIAB

FIGURE 7.2 Graphical Representation of the Saturated Logit Models

The left-hand-side model seems to provide a more plausible explanation than the right-hand-side model. Note that variants of the two alternative models above can be constructed, if one takes into account the relationships between two explanatory variables. That is, the underlying effect caused by two explanatory variables may be spurious, moderated or interactive. Both plausible alternative explanations in Figure 7.2.c can be further simplified, if one adopts some aggregate indices, such as FACINDEX (= STACRAFT × AFFECT), to sum up the sender's foreign policy behavior.

7.4 SUBSAMPLE ANALYSIS

The contingency table analysis can be conducted in a more microscopic way. Many subtables can be derived by controlling for individual target nations or for the primary issues involved. By singling out a specific target nation, I could investigate the relationships between NEGOTIAB and STACRAFT, and between NEGOTIAB and AFFECT. From this I learned about the impact of issue-types on the behavioral pattern in a bilateral relation. Moreover, by isolating a specific issue item, I can examine the connections between FOURPOW and STACRAFT, and between FOURPOW and STACRAFT. Through this I can determine if the sender followed a discriminating path toward different clusters of nations, in lieu of a certain issue.

The same criteria applied earlier for interpreting measures of association in the two-way tables are adopted in the following subsample analysis. Since only ordinal variables are concerned, the gamma scores will be used as primary vehicles for assessment. A gamma score larger than .6 is regarded as an indication of a "strong"

relationship, one between .2 and .6 as a "moderate" relationship, and one smaller than .2 as a "weak" relationship. Because of limited space, I will not deal with the problems of incomplete or sparse tables (with many zero cells) that occur in some of the subtables below.

7.4.1 Subtables Grouped by Individual Target Nations

Table 7.17 contains several subtables grouped by individual target nations (TARGET). Here I focus on only a few bilateral relations: U.S.-USSR, U.S.-Israel, and U.S.-China, for their importance in U.S. foreign policy.

As shown in Table 7.17.a, there is a moderate, positive relationship (gamma = .33) between NEGOTIAB and STACRAFT in U.S.-USSR relations. The United States tended to use more costly foreign policies toward the Soviet Union when the issue was more negotiable or substantive.

Moreover, as can be seen in Table 7.17.b, an even stronger, but still moderate, positive relationship (gamma = .53) can be found between NEGOTIAB and AFFECT. In U.S.-USSR relations, the more negotiable the issue, the more likely the United States was to show positive affect. As shown in the numbers within parentheses in these two tables, the results are similar if U.S.-Russian relations are included.

Table 7.17.c indicates that for U.S.-Israel relations, there is no significant relationship between NEGOTIAB and STACRAFT. There is a moderate positive relationship, however, between NEGOTIAB and AFFECT (gamma = .43), as shown in Table 7.17.d. In its dealings with Israel, the United States tended to exhibit positive affect when the issue was more negotiable.

TABLE 7.17 Contingency Table Analysis Grouped by Individual Target Nations

Row = NEGOTIAB: 1 = Low negotiability, 2 = Medium, 3 = High
Column = STACRAFT: 1 = Propaganda instruments, 2 = Diplomatic, 3 = Economic, 4 = Military
AFFECT: -1 = Negative, 0 = Neutral, 1 = Positive

(a) USSR (+ Russia) [Code = 365, 363]

STACRAFT

	1	2	3	4
1	33 (34)	44 (47)	1 (1)	
2	269 (277)	199 (218)	10 (17)	15 (18)
3	6 (6)	10 (11)	31 (33)	1 (1)

	Value	Sig.
Chi-square	284.6140 (263.4096)	.0000 (.0000)
Gamma	.3286 (.3423)	.0002 (.0000)
Somers' d	.2177 (.2274)	.0002 (.0000)
Total cases	619 (663)	

(b) USSR (+ Russia) [Code = 365, 363]

AFFECT

	-1	0	1
1	58 (59)	7 (9)	13 (14)
2	214 (214)	141 (143)	138 (173)
3	10 (10)	6 (6)	32 (35)

	Value	Sig.
Chi-square	61.9263 (60.0065)	.0000 (.0000)
Gamma	.5260 (.5250)	.0000 (.0000)
Somers' d	.3372 (.3385)	.0000 (.0000)
Total cases	619 (663)	

(c) Israel [Code = 666]

STACRAFT

	1	2	3	4
1	5	8		1
2	73	118	5	19
3	3	4	3	

	Value	Sig.
Chi-square	23.7483	.0006
Gamma	.1345	.4663
Somers' d	.0817	.4663
Total cases	239	

(d) Israel [Code = 666]

AFFECT

	-1	0	1
1	9	4	1
2	65	36	114
3	4		6

	Value	Sig.
Chi-square	13.3353	.0098
Gamma	.4348	.0156
Somers' d	.2847	.0156
Total cases	239	

(e) China [Code = 710]

STACRAFT

	1	2	3	4
1	1	7		1
2	19	47	3	19
3	2	12	20	

	Value	Sig.
Chi-square	59.0142	.0000
Gamma	.3062	.0056
Somers' d	.2227	.0056
Total cases	131	

(f) China [Code = 710]

AFFECT

	-1	0	1
1	9		
2	14	10	64
3	6	2	26

	Value	Sig.
Chi-square	34.8782	.0000
Gamma	.4659	.0093
Somers' d	.2440	.0093
Total cases	131	

TABLE 7.18 Contingency Table Analysis Grouped by Individual Issue Items

Row = FOURPOW: 1 = Small power, 2 = Middle, 3 = Great, 4 = Superpower
Column = STACRAFT: 1 = Propaganda instruments, 2 = Diplomatic, 3 = Economic, 4 = Military
AFFECT: -1 = Negative, 0 = Neutral, 1 = Positive

(a) Diplomatic relations [Code = 701]

STACRAFT

	1	2	3	4
1	21	224	50	18
2	5	68	15	4
3	4	122	5	10
4	8	29	2	1

	Value	Sig.
Chi-square	34.0039	.0001
Gamma	- .2004	.0076
Somers' d	- .0798	.0076
Total cases	586	

(b) Diplomatic relations [Code = 701]

AFFECT

	-1	0	1
1	29	15	269
2	8	3	81
3	5		136
4	3	6	31

	Value	Sig.
Chi-square	23.9917	.0005
Gamma	.1725	.1078
Somers' d	.0362	.1078
Total cases	586	

(c) Conflict resolution [Code = 341]

STACRAFT

	1	2	3	4
1	62	107	3	2
2	7	13		
3	4	7	3	
4	3	6		

	Value	Sig.
Chi-square	20.1868	.0168
Gamma	.1090	.4909
Somers' d	.0559	.4909
Total cases	217	

(d) Conflict resolution [Code = 341]

AFFECT

	-1	0	1
1	19	41	114
2	6	1	13
3		2	12
4	2	2	5

	Value	Sig.
Chi-square	11.9407	.0633
Gamma	.0266	.8666
Somers' d	.0131	.8666
Total cases	217	

(e) Control of nuclear weapons [Code = 301]

STACRAFT

	1	2	3	4
1		6		
2		2	1	
3	2	14	2	1
4	84	73		2

	Value	Sig.
Chi-square	49.4161	.0000
Gamma	- .8313	.0000
Somers' d	- .4906	.0000
Total cases	187	

(f) Control of nuclear weapons [Code = 301]

AFFECT

	-1	0	1
1			6
2	1		2
3	2	2	15
4	45	65	49

	Value	Sig.
Chi-square	28.5102	.0001
Gamma	- .7066	.0000
Somers' d	- .4743	.0000
Total cases	187	

TABLE 7.18 (cont'd)

(g) Trade and tariffs [Code = 201]

STACRAFT

	1	2	3	4
1	2	5	11	
2	2	10	4	
3	14	60	28	
4	7	22	19	

	Value	Sig.
Chi-square	9.7471	.1357
Gamma	- .0404	.7313
Somers' d	- .0244	.7313
Total cases	184	

(h) Trade and tariffs [Code = 201]

AFFECT

	-1	0	1
1	10		8
2	5		11
3	32	5	65
4	15	5	28

	Value	Sig.
Chi-square	8.0712	.2329
Gamma	.0660	.5934
Somers' d	.0343	.5934
Total cases	184	

(i) Human rights [Code = 604]

STACRAFT

	1	2	3	4
1	25	24	6	3
2	15	18	15	1
3	2	5		2
4	10	4	1	

	Value	Sig.
Chi-square	22.9702	.0063
Gamma	.0237	.8400
Somers' d	.0159	.8400
Total cases	131	

(j) Human rights [Code = 604]

AFFECT

	-1	0	1
1	39	4	15
2	38	4	7
3	6	1	2
4	12	2	1

	Value	Sig.
Chi-square	4.4709	.6132
Gamma	- .1950	.1922
Somers' d	- .0840	.1922
Total cases	131	

(k) Terrorism [Code = 98]

STACRAFT

	1	2	3	4
1	21	14	2	6
2	19	14	6	4
3	2	3		
4	7			

	Value	Sig.
Chi-square	12.6584	.1787
Gamma	- .1549	.2798
Somers' d	- .0971	.2798
Total cases	98	

(l) Terrorism [Code = 98]

AFFECT

	-1	0	1
1	27	6	10
2	31	6	6
3	2		3
4	5		2

	Value	Sig.
Chi-square	7.3474	.2899
Gamma	- .0358	.8410
Somers' d	- .0182	.8410
Total cases	98	

TABLE 7.18 (cont'd)

(g) Trade and tariffs [Code = 201]

STACRAFT

	1	2	3	4
1	2	5	11	
2	2	10	4	
3	14	60	28	
4	7	22	19	

	Value	Sig.
Chi-square	9.7471	.1357
Gamma	- .0404	.7313
Somers' d	- .0244	.7313
Total cases	184	

(h) Trade and tariffs [Code = 201]

AFFECT

	-1	0	1
1	10		8
2	5		11
3	32	5	65
4	15	5	28

	Value	Sig.
	8.0712	.2329
	.0660	.5934
	.0343	.5934
	184	

(i) Human rights [Code = 604]

STACRAFT

	1	2	3	4
1	25	24	6	3
2	15	18	15	1
3	2	5		2
4	10	4	1	

	Value	Sig.
Chi-square	22.9702	.0063
Gamma	.0237	.8400
Somers' d	.0159	.8400
Total cases	131	

(j) Human rights [Code = 604]

AFFECT

	-1	0	1
1	39	4	15
2	38	4	7
3	6	1	2
4	12	2	1

	Value	Sig.
	4.4709	.6132
	- .1950	.1922
	- .0840	.1922
	131	

(k) Terrorism [Code = 98]

STACRAFT

	1	2	3	4
1	21	14	2	6
2	19	14	6	4
3	2	3		
4	7			

	Value	Sig.
Chi-square	12.6584	.1787
Gamma	- .1549	.2798
Somers' d	- .0971	.2798
Total cases	98	

(l) Terrorism [Code = 98]

AFFECT

	-1	0	1
1	27	6	10
2	31	6	6
3	2		3
4	5		2

	Value	Sig.
	7.3474	.2899
	- .0358	.8410
	- .0182	.8410
	98	

TABLE 7.18 (cont'd)

(m) Invasion [Code = 333]

STACRAFT

	1	2	3	4
1	9	21		12
2	3	14	2	4
3	1	20		2
4	18	15	5	3

	Value	Sig.
Chi-square	33.1294	.0001
Gamma	- .2752	.0246
Somers' d	- .1738	.0246
Total cases	129	

(n) Invasion [Code = 333]

AFFECT

	-1	0	1
1	14	4	24
2	12	6	5
3	1	7	15
4	33	6	2

	Value	Sig.
	48.6982	.0000
	- .4470	.0000
	- .3053	.0000
	129	

(o) Military cooperation [Code = 323]

STACRAFT

	1	2	3	4
1	6	1		56
2	9	5		23
3	2	4		18
4				2

	Value	Sig.
Chi-square	14.0872	.0287
Gamma	- .3038	.0373
Somers' d	- .1197	.0373
Total cases	126	

(p) Military cooperation [Code = 323]

AFFECT

	-1	0	1
1	7	1	55
2	8	5	24
3	2	2	20
4	1		1

	Value	Sig.
	11.4813	.0746
	- .2452	.1223
	- .0916	.1223
	126	

(q) Negative symbolic expression [Code = 103]

STACRAFT

	1	2	3	4
1	4	14	6	7
2	2	7		5
3	6	4	12	
4	7	7	3	

	Value	Sig.
Chi-square	31.2912	.0003
Gamma	- .2791	.0128
Somers' d	- .2087	.0128
Total cases	84	

(r) Negative expression [Code = 103]

AFFECT

	-1	0	1
1	28	1	2
2	14		
3	12	5	5
4	17		

	Value	Sig.
	21.8864	.0014
	.1580	.3860
	.0453	.3860
	84	

Tables 7.17.e and 7.17.f concern U.S.-China relations. As can be seen, the U.S. behavioral pattern toward China resembles the one in U.S.-USSR relations. That is, for U.S.-China relations, the more negotiable the issue, the more likely the United States was to adopt costly policy instruments or to show positive affect (gamma = .31 and .47, respectively).

7.4.2 Subtables Grouped by Individual Primary Issue Items

I selected a few of the most frequently seen primary issue items (ISUITEM1) as the controlling factors. According to Table 7.18.a, for diplomatic relations in general, there is a moderate, negative relationship (gamma = -.20) between FOURPOW and STACRAFT. The more powerful the target nation, the less costly policy tools the United States tended to employ. As can be seen in Table 7.18.b, there is no relationship between FOURPOW and AFFECT.

By isolating the issue of conflict resolution, Tables 7.18.c and 7.18.d suggest that FOURPOW has no significant relationship with STACRAFT or AFFECT. As to control of nuclear weapons, a strong, negative relationship can be found in both Table 7.18.e and Table 7.18.f (gamma = -.83 and -.71). Thus, for control of nuclear weapons, the more powerful the target nation, the less likely the United States was to use costly policy options or to shown positive affect. A caveat is in order, however. On a closer examination, control of nuclear weapons was predominantly an issue between superpowers (about 85%). This issue was often dealt with by propaganda and diplomacy (respectively, in 84 and 73 of 187 cases). In Table 7.18.f, the frequency counts of 45 for negative affect, 69 for neutral affect, and 49 for positive affect, do not show a

discriminating attitude of the United States toward its superpower counterpart in control of nuclear weapons.

As depicted in Tables 7.18.g and 7.18.h, for the "Trade and tariffs" issue, no significant relationship was found between FOURPOW and STACRAFT, or between FOURPOW and AFFECT. Moreover, as can be seen in the last column of Table 7.18.g, there was no involvement of the use of military instruments when "Trade and tariffs" was the primary issue.

The next four subtables, from Table 7.18.i to Table 7.18.l, reflect situations when controlling for the issue of human rights or terrorism. Since no significant relationships were found, I arrived at the conclusion that for human rights or terrorism, the target's relative capability had no impact on American's selection of statecraft or its affect toward that nation.

When controlling for the issue of invasion, there is a moderate, negative relationship between FOURPOW and STACRAFT (gamma = -.28), or between FOURPOW and AFFECT (-.45). Based upon the results shown in Table 7.18.m, the more powerful the receiving nation involved in an incident of invasion, the less likely the United States was to adopt costly foreign policies. As can be seen in Table 7.18.n, in the event of an invasion, the more powerful the target nation, the less likely the United States was to express positive affect. Although I did not directly specify the aggressors in my research design, it seems to be true under most circumstances that the aggressors are more powerful than the invaded countries. Based upon the previous assertions regarding Tables 7.18.m and 7.18.n, I can confidently infer that the United States tended to show negative affect toward the aggressors but used less costly instruments or pinstripe

operations. Did the "post-Vietnam-War syndrome" prevent the United States from rushing into armed conflicts? It is necessary to look further into the events involving invasion to assess the actual U.S. responses to the aggressors and the invaded countries.

As illustrated in Table 7.18.o, for military cooperation in general, there is a moderate, negative relationship (gamma = -.30) between FOURPOW and STACRAFT. In other words, the more powerful the target nation involved in the issue of military cooperation, the less likely the United States was to choose costly policy tools. Because there are zero cells in the third column and in the last row of Table 7.18.o, I may add that military cooperation between superpowers was rare, and that there was no use of economic instruments when the United States dealt with the issue of military cooperation. Moreover, Table 7.18.p shows no significant relationship between FOURPOW and AFFECT, controlling for the issue of military cooperation.

Finally, note that the broad category of "Symbolic/political relations" was devised to account for the situations in which some other nation first did something, often negative, to the United States, and the United States was provoked to take a stand. I am particularly interested in how the United States responded to negative gestures from other nations. Tables 7.18.q and 7.18.r reflect situations controlling for negative symbolic expression. According to the results shown in Table 7.18.q, there is a moderate, negative relationship (gamma = -.28) between FOURPOW and STACRAFT. In other words, the more powerful the target nation that provoked the United States by a negative act, the less likely the United States was to react with a costly policy instrument. Table 7.18.r shows that no significant relationship was found between FOURPOW and AFFECT. But it is apparent that 85% of U.S. responses were negative when it was provoked.

Among the issue items discussed above, "Trade and tariffs" belongs to the issue-type "High negotiability/substantive," "Human rights" and "Terrorism" to the issue-type "Low negotiability/transcendent," and the remaining items to the issue-type "Medium negotiability/symbolic." From previous analyses of the three-way tables, as in Tables 7.8 and 7.9, I learned that the relationships between FOURPOW and STACRAFT, or between FOURPOW and AFFECT are strengthened, when controlling for the issue-type "Medium negotiability/symbolic." Now I will consider only those issue items belonging to symbolic issues. In comparing the results above, the assertion with respect to the relationship between FOURPOW and STACRAFT still holds for the issue items "Diplomatic relationships," "Control of nuclear weapons," "Invasion," "Negative symbolic expression," and "Military cooperation," but not for "Conflict resolution." Only the issue items "Control of nuclear weapons" and "Invasion" support the connection between FOURPOW and AFFECT in the analysis of three-way tables. As a matter of fact, when controlling for symbolic issues, the relationship between FOURPOW and STACRAFT (gamma = -.29) is stronger than the one between FOURPOW and AFFECT (gamma = -.19). Overall, subsample analysis can provide some insights leading to more detailed assessments of various relationships, depending on the research interest in specific bilateral relations or individual issues.

CONCLUSION

Through contingency table analysis, I have not only explored the relationships between variables included in the coding scheme, but also gained some sense of the underlying causal structure among key variables. The resulting new propositions are

summarized in Table 7.7. In regard to the dependent variables, I found that the cost of policy instruments (STACRAFT) and the overall expression (AFFECT) are equally important in describing foreign policy behavior. Moreover, there are some inconsistencies in transforming STACRAFT into a raw bifurcation between verbal and physical action (PHYSICAL). As to the independent variables, NEGOTIAB, FOURPOW, PCOLDWAR, MULTAR, DIRECT, MULTOOLS, and LOCATION are relatively important for showing at least some moderate correlation with one of the dependent variables. Less important explanatory variables are ELECTION, PARTY, MULISSUE, ADMINIST, and REGIONS. Given the limitations of simple contingency table analysis, I should not emphasize these results too much. A more refined assessment will be carried out in the multivariate analysis of the next chapter.

The analysis of the three-way tables in Tables 7.8 and 7.9 has uncovered the existence of a specified or moderated causal relationship among key variables. An example is the relationships between actors, issues and the selection of statecraft in Table 7.8. The correlation between FOURPOW and STACRAFT is strengthened when the primary issue in dispute is symbolic (gamma scores: from -.20 to -.29), but is weakened or disappears when the issue is transcendent or substantive. Furthermore, the correlation between NEGOTIAB and FOURPOW is bolstered when the target is a superpower (gamma scores from .16 to .35), but is weakened when the target nation was another type.

Because of the large-sample-size problem associated with the improvement chi-square tests, my application of loglinear and logit modeling yielded merely saturated models. Not much light was cast on the causal mechanisms among key variables. As

demonstrated earlier, however, the construction of odds ratios from the logit equation can lead to detailed interpretations accounting for the interaction effects.

Finally, the subsample analysis controlling for individual target nations or issue items seems to be a fruitful area deserving more attention. More often than not, critics or pundits are quite skeptical about the morality of U.S. foreign policy. Assume for a moment that such criticisms are not purely normative or subjective, and that they are concerned with U.S. biases toward certain nations or discrimination against some issues. The subsample analysis allows us to examine the biases or discrimination in U.S. foreign policy. For instance, as suggested in Table 7.18, when controlling for the issues of trade and tariffs, human rights, or terrorism, the United States did not act differently toward different clusters of nations, in terms of the cost of policy instruments or overall expression. For some individual issues, such as diplomatic relations, invasion, and negative provocation, I did find the following pattern: (1) the United States tended to use less costly policies when the target was more powerful; and (2) the United States tended to show negative affect when the target was more powerful. Some would interpret this as evidence of immorality in U.S. foreign policy. Nevertheless, others would disagree, if they adopt a different definition of morality that admits the practical necessity of a state's egoistic (or rational) pursuit of its national interest (Oppenheim 1991). In this vein, some regularities (which may be seen as discriminations) in U.S. foreign policy behavior can be interpreted as evidence of being moral. The morality of foreign policy is an overarching issue, but difficult to define. I simply show here what and how the subsample analysis of actors, issues, and foreign policy behavior may contribute to the debate about morality in the international arena.

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SELECTION OF STATECRAFT: ISSUE-SPECIFIC OR ACTOR-SPECIFIC? THE AMERICAN CASE, 1978-1994

VOLUME II

By

Chin-Lung Chang

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CHAPTER EIGHT

RESULTS IV: MULTIPLE COMPARISONS

The previous three chapters primarily summarize the descriptive nature of individual variables, and secondarily touch on the relationships between two or three variables. Here I change my course to applying various methods to the full model. My focus is on making inferences, including hypothesis testing and effect assessment. It should be kept in mind that there is a correspondence between the levels of measurement and appropriate statistical methods. Misuse or abuse of statistics would lead to erroneous conclusions. The ensuing discussions cover all the qualified dependent variables, including PHYSICAL, AFFECT, STACRAFT, MULTOOLS, and FACINDEX. The methods applied are dummy Probit, ordered Probit, Poisson, and regressional analysis. Given that these methods fall within a unifying concept for identifying data structure—the Generalized Linear Model (Dobson 1990; McCullagh and Nelder 1989; Nelder and Wedderburn 1972), I will first briefly discuss the connections among models.

8.1 THE GENERALIZED LINEAR MODEL

In its simplest form, the generalized linear model can be formulated as follows:

(1) By using a linear model, the expected values of the random variable Y (with independent observations $y_1, \ldots, y_i$) can be expressed as a linear combination of K explanatory or independent variables through $E(y) = \mu = \Sigma\beta_k x_k$ (or simply, $x'\beta$), which covers the systematic component accounting for Y.

(2) Let the variable, η, be the linear predictor produced by $x_1, x_2, \ldots, x_k$, i.e., $\eta = \Sigma\beta_k x_k$, regardless of the type of model, such that η links the function $\Sigma\beta_k x_k$ to μ, namely, $\eta = g(\mu)$.

The modeling procedure involves "(a) choosing the relevant error distribution, (b) determining which variables to include in the systematic component, and (c) defining the link function $g(\mu)$" (Pregibon 1980, 15). A number of possible link functions distinguish between members of the generalized linear models. The candidates relevant to this project are listed below:

1. Classical linear models: $\eta = \mu$;
2. Logit: $\eta = \log[\mu/(1-\mu)]$;
3. Probit: $\eta = \Phi^{-1}(\mu)$, where Φ^{-1} is the inverse normal cumulative distribution function;
4. Poisson: $\eta = \log(\mu)$.

Liao (1994) sums up the principle of choosing among generalized linear models:

> The choice of link function, or statistical model, to use depends on the distribution of the data and theory, which enables the researcher to understand the nature of the data. Specifically, the distribution of the random component in *Y* (the part that cannot be systematically explained by *x* variables) determines the link function and the type of generalized linear model (p. 5).

Several computer packages include the feature of generalized linear models. For a list of these packages, see Long (1997, 257). The utility and precision of these programs remain to be seen. We often confront imperfect data (with ambiguous distributions) in this imperfect world. Moreover, there might be some inherent difficulties in discriminating between like models such as Logit and Probit. Despite these difficulties,

however, the approach of generalized linear models seems to provide a useful unifying framework that deserves further attention.

Most of this chapter is concerned with limited dependent variable models. A general introduction to this subject can be found in Amemiya (1981), Aldrich and Nelson (1984), King (1989a), Liao (1994), Long (1997), and Maddala (1983). In particular, Long (1997) provides a lucid and comprehensive account of both theoretical and practical issues with regard to categorical data analysis. When the dependent variable is categorical (or limited), Logit and Probit are the most popular among various suitable models. Empirical examples of using Logit or Probit can be found in Aldrich et al. (1989), Ostrom and Aldrich (1978), Ostrom and Job (1986), and Spector and Mazzeo (1980). To ensure a focus, I elected Probit as the primary analytical tool. For interpretation, King (1989a, 102-10) suggests four viable approaches: graphical methods, fitted values, first differences, and derivative methods. I emphasize the first-differences approach. In the subsequent analysis, I use the statistical package, STATA, because of its built-in flexibility and its inclusion of a great variety of user-contributed programs. I employ LIMDEP double-check the results. If not otherwise indicated, the results from both programs are in accord with each other, or do not differ at a discernible level.

8.2 BINARY RESPONSE MODELS—PHYSICAL

8.2.1 Problems with Applying OLS to Binary Response Data

The ordinary least squares regression (OLS) has a central place in the social sciences. "It is appealing because it provides a conceptually simple method for investigating functional relationships among variables" (Chatterjee and Price 1991, ix).

Problems may arise, however, when the data deviate from the assumptions underlying OLS. Among several potential problems, Aldrich and Nelson (1986) highlight this one:

> The central problem with OLS in the behavioral sciences is just this: OLS implicitly requires a continuous, interval-level, and unbounded dependent variable. In principle, that is, the dependent variable of OLS should be able to take on any value from negative to positive infinity (p. 115).

When the dependent variable is dichotomous, the OLS procedure takes on a form of the Linear Probability Model (LPM). According to Aldrich and Nelson (1984, 13-4), as a consequence of violating the assumption of a continuous dependent variable, the parameter estimates in OLS turn out to be "unbiased but not best (i.e., not have the smallest possible sampling variance)." In addition, "estimates of the sampling variances will not be correct, and any hypothesis tests (e.g., the t and F tests) or confidence intervals based on these sampling variances will be invalid, even for very large samples."[64] Still worse, the predicted probability for an event to occur may fall outside the range of (0, 1). This renders interpretations dubious (Maddala 1983, 16). Worst of all, according to Long, "In general, when the outcome is a probability, it is often *substantively* reasonable that the effects of independent variables will have diminishing returns as the predicted probability approaches 0 or 1" (1997, 39-40). The general linear interpretation—a unit change in a certain independent variable leads to a *constant* change in the probability of an event, other things being equal—might be problematic in many situations.

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[64] The violations will not affect the significance tests if "one makes the additional assumption that the explanatory variables have a multivariate normal distribution" (Maddala 1983, 16).

8.2.2 Alternative Models for Binary Response Data

The most widely applied alternatives to LPM are Weighted Linear Probability Model (WLPM), Linear Discriminant Model (LDM), Logit, and Probit. In this section, I will make a comparison between the results of these models.

The linear probability model can be expressed as

$$y_i = \sum \beta_k x_{ik} + \varepsilon_i . \qquad (8.1)$$

To construct the weighted linear probability model, Aldrich and Nelson (1984, 14) suggest using Goldberg's (1964, 250) formula:

$$w_i = \frac{1}{\sqrt{(\sum \beta_k x_{ik})(1-\sum \beta_k x_{ik})}} . \qquad (8.2)$$

The resulting new estimates, say $\tilde{\beta}_k$, are unbiased and have the smallest possible sampling variances.[65] As Long (1997, 39) points out, however, this application does not correct problems other than heteroscedasticity (i.e., the variance is not constant).

Another alternative to LPM is Linear Discriminant Model (LDM). Norusis (1995c, chapter 1) and Klecka (1980) provide a general introduction to this subject. Widely recognized as a powerful classification technique, particularly in the area of pattern recognition, LDM can be employed to distinguish among mutually exclusive groups, and to assess the importance of individual independent variables in

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[65] The second stage of applying weighted least squares here should not include intercept (Aldrich and Nelson 1984, 85, n. 6). The suggested weight, w_i, is undefined if the predicted value, $\Sigma\beta_k x_{ik}$, lies outside the range of (0,1). In my data, 402 of 3689 valid cases have predicted values smaller than zero, and 56 cases have predicted values larger than one. The ad hoc adjustment I will make is to replace with .000001 when $\Sigma\beta_k x_{ik} \leq 0$, and with .999999 when $\Sigma\beta_k x_{ik} \geq 1$.

discriminating the group memberships of interest. A general form of LDM can be expressed as

$$D_i = B_0 + B_1 x_{i1} + B_2 x_{i2} + \ldots + B_k x_{ik}, \qquad (8.3)$$

where the D's are the scores of the discriminant function, the x's are the values of discriminating (or independent) variables, and the B's are coefficients. The B's are estimated such that the discriminant scores differ as much as possible between two groups (in the dichotomous case). Norusis (1995c) sums up the basic assumptions about linear discriminant analysis as follows:

> For the linear discriminant function to be "optimal"—that is, to provide a classification rule that minimizes the probability of misclassification—certain assumptions about the data must be met. Each group must be a sample from a multivariate normal population, and the population covariance matrices must all be equal (p. 1).

The presence of discrete independent variables, as is exactly the case in my data set, often violates the assumption of multivariate normality such that the linear discriminant function is not optimal.[66] This is why the Logit or Probit model, which requires less stringent assumptions than LDM does, is usually preferred.

The binary Logit and Probit models assume that there is an underlying or latent variable y_i^*, which can be defined as

$$y_i^* = \sum \beta_k x_{ik} + \varepsilon_i. \qquad (8.4)$$

[66] Some have reported that the linear discriminant function works reasonably well despite violating the assumption of multivariate normality (Norusis 1995c, 36).

Given that y_i^* is unobservable but linked to the observed dummy variable y_i, a measurement equation can be formed as:

$$y_i = \begin{cases} 1 & if\ y_i^* > 0 \\ 0 & if\ y_i^* \le 0 \end{cases}. \tag{8.5}$$

From Equations 8.4 and 8.5, if replacing $\Sigma\beta_k x_{ik}$ with a simpler notation $x'\beta$, we obtain

$$\text{Prob}\,(y_i = 1) = \text{Prob}\,(y_i^* > 0) = \text{Prob}\,(\varepsilon_i > -x'\beta) = 1 - F(-x'\beta), \tag{8.6}$$

where F (also denoted as Φ) is the cumulative distribution function for ε_i. Therefore, the likelihood function is

$$L = \prod_{y_i=0} F(-x'\beta) \prod_{y_i=1} [1 - F(-x'\beta)], \tag{8.7}$$

depending upon what assumptions are made about the distribution of ε_i. In the Logit case, the cumulative distribution function can be derived as

$$F(-x'\beta) = \frac{\exp(-x'\beta)}{1+\exp(-x'\beta)} = \frac{1}{1+\exp(x'\beta)}, \tag{8.8}$$

and, in the Probit case,

$$F(-x'\beta) = \int_{-\infty}^{-x'\beta} \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{t^2}{2}\right) dt, \tag{8.9}$$

if assuming that ε_i is normal with zero mean and unit variance.

8.2.3 Descriptive Statistics of Pertinent Variables

Before proceeding with a comparison among the binary response models above, I summarized individual characteristics of all variables, as shown in Table 8.1. The descriptive statistics presented here include mean, standard deviation, variance, skewness,

kurtosis, minimum, and maximum. In particular, the measures of skewness and kurtosis provide some clues about how close the univariate distribution of each variable is to the normal distribution. Skewness is a measure for the symmetry of a distribution, while kurtosis is a measure for the peakedness of a distribution. The normal distribution has a skewness of 0 and kurtosis of 3. In terms of skewness, a negative value means that the distribution is "skewed left," while a positive value means that the distribution is "skewed right" (Stata Corporation 1997, 3: 371).

In Table 8.1, the variable NEGOTIAB has the best score of skewness, .0072, and MULTOOLS is the worst case of skewness, with a score of 1.8570. In terms of kurtosis, the larger the score of kurtosis, the steeper the distribution. As can be seen in Table 8.1, DIRECT has the flattest distribution, and MULTOOLS displays the steepest distribution. The variables STACRAFT and PHYSICAL have a score of kurtosis very close to 3. Overall, NEGOTIAB has a distribution (.0072 in skewness and 3.2045 in kurtosis) which is closest to the normal distribution, and MULTOOLS has a distribution (1.8570 in skewness and 6.3274 in kurtosis) which deviates most from the normal distribution.

8.2.4 Findings in Comparing Binary Response Models

Table 8.2 presents the results of five binary response models, including LPM, WLPM, LDM, Logit, and Probit. All the models are statistically significant. WLPM has a substantial improvement in R^2 (= .86, as compared to .38 in LPM and .36 in Logit/Probit).

TABLE 8.1 Descriptive Statistics for Variables Included in the Full Models

Variable	Mean	Std. Dev.	Variance	Skewness	Kurtosis	Minimum	Maximum
Candidates for the Dependent Variable							
PHYSICAL	.2144	.4084	.1668	1.4134	2.9976	0	1
AFFECT	.2380	.9021	.8137	– .4856	1.4048	–1	1
STACRAFT	2.0637	.8998	.8097	.8105	3.0622	1	4
FACINDEX	.6449	2.0799	4.3261	– .4193	2.3121	–4	4
Primary Independent Variables							
NEGOTIAB	2.0192	.5583	.3117	.0072	3.2045	1	3
RCAPFRA1	.1600	.2328	.0542	1.3727	3.7052	.0000	1.0403
RCAPFRA2	.2411	.3682	.1355	1.4845	3.5326	.0000	1.0980
RCAPFRA3	.1214	.2124	.0451	1.6131	3.8312	.0000	.6438
Control Variables							
PCOLDWAR	.2212	.4151	.1723	1.3435	2.8049	0	1
ELECTION	.2003	.4003	.1602	1.4975	3.2424	0	1
PARTY	1.3394	.4736	.2243	.6784	1.4602	1	2
MULTAR	2.1084	1.8223	3.3207	1.5932	4.2799	1	8
DIRECT	.5213	.4996	.2496	– .0852	1.0073	0	1
MULTOOLS	1.2879	.5367	.2880	1.8570	6.3274	1	4
MULISSUE	1.2011	.4009	.1607	1.4911	3.2235	1	2

Note: All variables have 3,689 valid cases. When the variables of AFFECT and STACRAFT are converted into a form of 0, 1, 2..., only their mean values are changed to 1.2380 and 1.0637, and other statistics are unchanged. In the subsequent analysis, RCAPFRA2 is adopted to measure relative capabilities. The listing of RCAPFRA1 and RCAPFRA3 here is only for reference. The variable of MULTOOLS is employed as the dependent variable in the Poisson analysis.

TABLE 8.2 Binary Response Models of PHYSICAL

Variable	LPM	WLPM	LDM	Logit	Probit
CONSTANT	- .2661**		- 2.4084	- 4.4894**	- 2.6494**
	(.0318)			*(.3311)*	*(.1772)*
AFFECT	- .0077	.0086*	- .0390	- .0714	- .0315
	(.0065)	*(.0035)*		*(.0616)*	*(.0335)*
NEGOTIAB	.0570**	.0827**	.2874	.4952**	.2999**
	(.0110)	*(.0055)*		*(.1105)*	*(.0593)*
RCAPFRA2	- .1131**	- .1288**	- .5705	- 1.3018**	- .6634**
	(.0152)	*(.0069)*		*(.1784)*	*(.0932)*
PCOLDWAR	.0663**	.0403**	.3344	.6137**	.3270**
	(.0136)	*(.0068)*		*(.1294)*	*(.0702)*
ELECTION	- .0168	- .0348**	- .0848	- .1817	- .0881
	(.0133)	*(.0053)*		*(.1321)*	*(.0717)*
PARTY	- .0072	- .0363**	- .0361	- .0426	- .0357
	(.0113)	*(.0046)*		*(.1117)*	*(.0609)*
MULTAR	- .0301**	- .0375**	- .1516	- .3245**	- .1772**
	(.0032)	*(.0013)*		*(.0373)*	*(.0198)*
DIRECT	- .0383**	- .0958**	- .1930	- .3586**	- .2406**
	(.0122)	*(.0054)*		*(.1232)*	*(.0670)*
MULTOOLS	.4436**	.3272**	2.2369	2.9122**	1.6685**
	(.0101)	*(.0034)*		*(.1060)*	*(.0572)*
MULISSUE	- .0816**	- .0963**	- .4117	- .8049**	- .4130**
	(.0137)	*(.0052)*		*(.1420)*	*(.0766)*
Observations	3,689	3,689	3,689	3,689	3,689
F(10, 3678)	225.90	2,217.46			
-2 × LLR / χ^2(10)			1,763.05	1,369.62	1,368.10
Prob > F	.0000	.0000			
Prob > χ^2(10)			.0000	.0000	.0000
R^2	.3805	.8577	.3805		
Pseudo R^2				.3599	.3595
Log Likelihood				- 1,218.19	- 1,218.95

Note: In regard to model names, LPM = Linear Probability Model, WLPM = Weighted Linear Probability Model, and LDM = Linear Discriminant Model. Within parentheses are standard errors. Moreover, * denotes significance level < .05, and ** signifies significance level < .01.

DISCRIMINANT

		PREDICTED 0	PREDICTED 1
ACTUAL	0	2,551	358
	1	219	561

Correctly predicted: 84.36%

LOGIT

		PREDICTED 0	PREDICTED 1
	0	2,734	175
	1	301	479

87.10%

PROBIT

		PREDICTED 0	PREDICTED 1
	0	2,727	182
	1	299	481

86.96%

Its parameter estimation, however, is not fully consistent with LPM, Logit or Probit. The coefficients of AFFECT, ELECTION, and PARTY are significant in WLPM, but not so in the other models. Additionally, the coefficient of AFFECT has a positive sign in WLPM but a negative sign in other models. This phenomenon casts doubt on the results of WLPM. Through standardization, the beta coefficients of WLPM exhibit the magnitudes of explanatory variables in the descending order of MULTOOLS, NEGOTIAB, MULTAR, MULISSUE, RCAPFRA2, DIRECT, and so forth.

LDM has a significant score of Wilk's Lambda (= .6195), which rejects the null hypothesis that there is no difference between the two group means (i.e., the means of physical and verbal action). The coefficients of LDM shown in Table 8.2 are unstandardized. Since the independent variables are assumed to be correlated to each other, it is impossible to pinpoint the relative importance of individual variables as in multiple regression. Although this caution should be kept in mind, the standardized coefficients of DLM suggest a descending order of relative importance in individual variables—MULTOOLS, MULTAR, RCAPFRA2, MULISSUE, NEGOTIAB, PCOLDWAR, etc.—which is identical to the results of applying standardization to LPM.

The prediction tables at the bottom of Table 8.2 show that LDM has a 84.36% success rate, Logit, 87.10%, and Probit, 86.96%. Nevertheless, in correctly predicting the U.S. adoption of physical action, LDM enjoys a success rate of 72%, 10% higher than either Logit or Probit. LDM does not perform as well as Logit or Probit, however, in predicting verbal action.

TABLE 8.3 Parameter Comparison between Binary Response Models

Dependent Variable: PHYSICAL (0 = Verbal, 1 = Physical)

Variable	LPM×5.04	DLM	Logit/1.6	Logit/1.8	Probit
CONSTANT	- 1.3411	- 2.4084	- 2.8059	- 2.4751	- 2.6494
AFFECT	- .0381	- .0390	- .0446	- .0393	- .0315
NEGOTIAB	.2873	.2874	.3095	.2730	.2999
RCAPFRA2	- .5700	- .5705	- .8136	- .7177	- .6634
PCOLDWAR	.3342	.3344	.3835	.3383	.3270
ELECTION	- .0847	- .0848	- .1135	- .1002	- .0881
PARTY	- .0363	- .0361	- .0266	- .0235	- .0357
MULTAR	- .1517	- .1516	- .2028	- .1789	- .1772
DIRECT	- .1930	- .1930	- .2241	- .1977	- .2406
MULTOOLS	2.2357	2.2369	1.8201	1.6056	1.6685
MULISSUE	- .4113	- .4117	- .5030	- .4437	- .4130

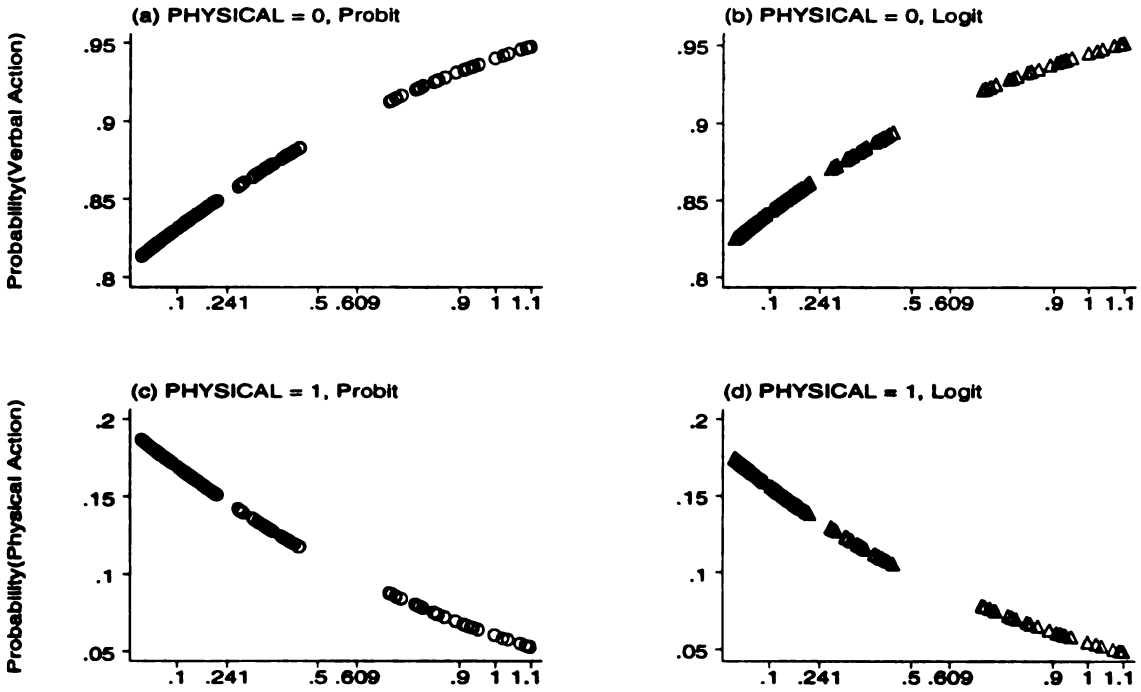

FIGURE 8.1 Probability Change of PHYSICAL versus Target's Relative Capability

TABLE 8.4 First-Difference Analysis of PHYSICAL

Dependent Variable: PHYSICAL (0 = Verbal, 1 = Physical)

Variable Names	Values	*PROBIT* Prob [y = 0]	*PROBIT* Prob [y = 1]	*LOGIT* Prob [y = 0]	*LOGIT* Prob [y = 1]
AFFECT	- 1	.8422	.1558	.8553	.1447
	0	.8516	.1484	.8639	.1361
	1	.8587	.1413	.8721	.1279
NEGOTIAB**	1	.9125	.0875	.9145	.0855
	2	.8546	.1454	.8670	.1330
	3	.7753	.2247	.7989	.2011
PCOLDWAR**	0	.8693	.1307	.8809	.1191
	1	.7870	.2130	.8002	.1998
ELECTION	0	.8492	.1508	.8616	.1384
	1	.8689	.1311	.8819	.1181
PARTY	1	.8505	.1495	.8642	.1358
	2	.8587	.1413	.8691	.1309
MULTAR**	1	.8035	.1965	.8184	.1816
	2	.8488	.1512	.8618	.1382
	3	.8866	.1134	.8961	.1039
	4	.9171	.0829	.9227	.0773
	5	.9410	.0590	.9429	.0571
	6	.9591	.0409	.9580	.0420
	7	.9724	.0276	.9693	.0307
	8	.9819	.0181	.9776	.0224
DIRECT**	0	.8226	.1774	.8427	.1573
	1	.8782	.1218	.8846	.1154
MULTOOLS**	1	.9371	.0629	.9372	.0628
	2	.4453	.5547	.4480	.5520
	3	.0355	.9645	.0423	.9577
	4	.0003	.9997	.0024	.9976
MULISSUE**	1	.8334	.1666	.8460	.1540
	2	.9163	.0837	.9247	.0753
RCAPFRA2**	.2411	.8533	.1467	.8659	.1341
	.6093	.9023	.0977	.9125	.0875
	.02	.8170	.1830	.8288	.1712
	.03	.8188	.1812	.8307	.1693
	.04	.8205	.1795	.8325	.1675
	.05	.8222	.1778	.8343	.1657
	.075	.8265	.1735	.8388	.1612
	.1	.8307	.1693	.8431	.1569
	.4	.8762	.1238	.8882	.1118
	.5	.8892	.1108	.9005	.0995
	.6	.9013	.0987	.9115	.0885
	.9	.9316	.0684	.9384	.0616
	1.0	.9399	.0601	.9455	.0545
	1.1	.9474	.0526	.9518	.0482

Note: * denotes significance level < .05, and ** signifies significance level < .01.

Table 8.3 displays the possible convergence between models. On the left side, the coefficients of LDM can be approximately calculated by multiplying the coefficients of LPM by a constant of proportionality, here, 5.04 (Norusis 1995c, 20). On the right side, the parameter estimates of Probit can be obtained by subtracting the parameter estimates of Logit by $\pi/\sqrt{3}$ (= 1.8) (Maddala 1983, 23) or 1.6 (Amemiya 1981). As shown in Table 8.3, the mixed results prevent me from judging which number, 1.8 or 1.6, provides a closer approximation in the link between Logit and Probit. The striking similarities between Logit and Probit are shown not only in the prediction tables mentioned above, but also in other aspects of analysis, such as the graphical comparison in Figure 8.1 and first differences in Table 8.4.[67] To avoid redundancy, I limited my inquiry to Probit when adopting the technique of first differences as a primary vehicle for interpretation.

8.2.5 Interpreting PHYSICAL by Probit

First I will examine the overall fit of the Probit model. In Table 8.2, a log-likelihood-ratio value of 1368.10 against a chi-square distribution (d.f. = 10) appears to be significant. The overall model fit is good. The value of Pseudo R^2 suggests that the model explains about 36% of the variance in the dependent variable.[68] A success rate of

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[67] As proposed by Nagler (1994), Scobit (Skewed Logit) is an alternative estimator to Logit and Probit, which relaxes the symmetry assumption imposed on the logistic and normal density functions.

[68] Cautions should be taken in interpreting pseudo R^2 in the Logit or Probit model. Hagle and Mitchell (1992, 782) recommend that researchers should not rely solely on the value of pseudo R^2 as the measure of model performance. McKelvey and Zavoina (1975, 112) have explicated the deficiencies regarding pseudo R^2 as an analog to the familiar OLS R^2. In particular, information about the latent dependent variable is

87% in correctly predicting the outcome is outstanding as compared to what is generally found in the data of social sciences.

Next, in identifying the significance of individual parameters, I found that seven out of ten parameters are significant at the .01 level, without counting the constant. There was no need to make efforts to interpret insignificant parameters, including AFFECT, ELECTION and PARTY. Note that, although the signs of the parameters provide some idea of the direction of the impact of an independent variable on the dependent variable, the magnitude of single independent variables cannot be evaluated in as straightforward a manner as in the OLS regression analysis. This is why other techniques are required for interpretation.

Table 8.4 presents the results of first differences for all independent variables. The method of first differences, like other techniques suggested by King (1989a, chapter 5) for interpreting limited dependent variable models, follows a rule of thumb: hold the other variables constant at their means, and thus reduce the dimensions to only two, i.e., to zero in on the interplay between one specific independent variable and the dependent variable. The method of fitted values, having a logic similar to the method of first differences, can be helpful at times for a focused comparison among several key explanatory variables. Because of limited space, however, I will not pursue the application of fitted values. It should be noted that throughout the remaining sections, the

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often unavailable in practice. The sampling distribution of pseudo R^2 is thus generally unknown. This leads to problems in obtaining an appropriate estimate of the true R^2. The formula adopted in the STATA program is: pseudo $R^2 = 1 - (\ln L_1 / \ln L_0)$ (Stata Corporation 1997, 2: 490). See Hagle and Mitchell (1992) for other formulas and a comparison among them.

principle of *ceteris paribus*—holding other variables constant, most likely at their means—will generally be omitted in any statement with regard to interpretation.

According to Table 8.4, the more negotiable an issue under consideration was, the higher the probability that the United States would take physical action. When the issue-type changed from transcendent to substantive, the probability of taking physical action increased by 13.72%, from .0875 to .2247. Yet the outcome of first-differencing DIRECT suggests that the probability of initiating physical action was lower when the problem location of an issue was geographically closer or an issue was of more direct concern to the United States. Similarly, the probability of choosing strong measures, such as physical acts, decreased by 8.29% when more than one issue was involved in an event. For an event occurring in the post-Cold War era, the probability of American foreign policymakers' taking physical action dropped by 8.23%, as compared to an event in the Cold War era. When there were more target nations involved, there was a lesser probability of taking strong measures. In addition, when multiple types of foreign policy tools were chosen to achieve a certain effect, physical action was often included.

To assess the impact of a target's relative capability on the dependent variable, here and henceforth, I employ several sets of numbers for comparison: (1) {.2411, .6093}, where .2411 is the mean of RCAPFRA2, .6093 is the mean plus one standard deviation; (2) {.02, .03, .04}, where .03 is approximately the cutoff point that separates small powers from middle powers; (3) {.05, .075, .1}, where .075 is the cutoff point that bifurcates middle and great powers; (4) {.4, .5, .6}, where .5 is the mid point, hypothetically representing a target nation half as strong as the United States; and (5) {.9, 1, 1.1}, where these are hypothetical values depicting a target nation in a tight race

with the United States ranging from 10 points behind to 10 points ahead. The results at the bottom of Table 8.4, indicate that the United States was less likely to take physical action when its opponent was stronger. Facing an equally strong nation, the United States was about 12% less likely to engage in physical action, than when it faced a small-power target one-thirtieth as strong as the United States.

Since the variable RCAPFRA2 is continuous, the graphical method can be applied. Figure 8.1 illustrates the relationship between RCAPFRA2 and the probability of PHYSICAL in both Probit and Logit. The probability of taking verbal action increases as the target involved is stronger, while the probability of taking physical action drops as the target is more powerful. The inclusion of the graphs resulting from Logit is to demonstrate its similarity to the Probit model.

Moreover, the derivative method may be applied to the relationship between a continuous independent variable and a discrete dependent variable. To predict the instantaneous effects of probability changes induced by one of the explanatory variables, the derivatives of the cumulative distribution function must be calculated. In the binary Logit and Probit, the derivatives can be solved as follows:

$$\frac{\partial \Pr(y=1|x)}{\partial x_k} = F(-x'\beta)[1-F(-x'\beta)]\beta_k = \frac{\exp(x'\beta)}{[1+\exp(x'\beta)]^2}\beta_k, \quad (8.10)$$

and

$$\frac{\partial \Pr(y=1|x)}{\partial x_k} = \frac{\partial \Phi(x'\beta)}{\partial x_k} = \phi(x'\beta)\beta_k, \quad (8.11)$$

where $\phi(x'\beta)$ is the probability density function (pdf) of ε_i and β_k is the coefficient corresponding to x_k with reference to Equation 8.4. A distinctive feature is that the

derivatives across categories of y sum to zero. Accordingly, Equation 8.11 implies that $\partial \Pr(y = 0 \mid x) / \partial x_k = -\phi(x'\beta)\,\beta_k$. The same calculation can be extended to the cases with a multiple-response dependent variable.

A major disadvantage of the derivative method is that its interpretation is less intuitive and meaningful. In the case of binary Probit, $\phi(x'\beta)$ = .2297, the parameter of RCAPFRA2 = -.6634, and thus the marginal probability (of PHYSICAL = 1) with respect to RCAPFRA2 = .2297 × (-.6634) = -.1524. This can only be interpreted in terms of the slope, or the instantaneous effect induced by a one-unit increase of RCAPFRA2, at the mean value of PHYSICAL (= .2144; see Table 8.1). Different data points along the probability of PHYSICAL are associated with different slopes. Moreover, the context of a one-unit change in RCAPFRA2 here is meaningless. Henceforth, I will not make use of the derivative method for interpretation.[69]

8.3 ORDERED PROBIT MODELS

8.3.1 Interpreting AFFECT by the Ordered Probit Model

When the dependent variable has more than two categories and contains an ordinal level of measurement, the ordered Probit model is one among several methods to deal with such data. According to Greene (1990, chapter 20), the ordered Probit model can be built around a latent linear regression model as in the exposition of the binary Probit model described above. The latent regression model can be expressed as

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[69] For a heated debate on the use of the derivative method for interpreting Logit or Probit, see DeMaris (1993) and Roncek (1991, 1993).

$$y^* = x'\beta + \varepsilon, \tag{8.12}$$

where y^* signifies the underlying continuous process which is unobservable or unmeasurable. The realization of y^* as observable discrete events can be represented as

$$\begin{aligned} y &= 0 \quad \text{if } y^* \le 0, \\ y &= 1 \quad \text{if } 0 \le y^* \le \mu_1, \\ y &= 2 \quad \text{if } \mu_1 \le y^* \le \mu_2, \ \ldots \\ y &= J \quad \text{if } \mu_{J-1} \le y^*, \end{aligned} \tag{8.13}$$

where μ's, usually called cutoff points, are unknown parameters to be estimated along with β's, and μ's are subject to the inequalities, $0 < \mu_1 < \mu_2 < \cdots < \mu_{J-1}$.

Assuming that ε follows a normal distribution, the probabilities of each category of the observable y can be calculated as follows:

$$\begin{aligned} \Pr(y=0) &= \Phi(-x'\beta), \\ \Pr(y=1) &= \Phi(\mu_1 - x'\beta) - \Phi(-x'\beta), \\ \Pr(y=2) &= \Phi(\mu_2 - x'\beta) - \Phi(\mu_1 - x'\beta), \ \ldots \\ \Pr(y=J) &= 1 - \Phi(\mu_{J-1} - x'\beta), \end{aligned} \tag{8.14}$$

where Φ (sometimes denoted as F) is the cumulative distribution function for ε.

Since AFFECT represents a three-level, ordinal measure for the affect toward a target nation, it qualifies for the use of the ordered Probit model described above. Table 8.5 presents the results of an ordered Probit model for AFFECT. The log-likelihood-ratio test suggests that the overall model fit is good. The model explains about 11.5% of the variance in the dependent variable according to its value of Pseudo R^2.

TABLE 8.5 Ordered Probit Model of AFFECT

	PROBIT				*OLS*			
Variable	Coef.	Std. Err.	z	P>|z|	Coef.	Std. Err.	t	P>|t|
CONSTANT					.0873	.0806	1.083	.279
STACRAFT	.1893	.0286	6.606	.000	.1248	.0185	6.739	.000
NEGOTIAB	.2503	.0429	5.833	.000	.1816	.0275	6.614	.000
RCAPFRA2	- .5071	.0580	- 8.739	.000	- .3526	.0386	- 9.139	.000
PCOLDWAR	.2247	.0553	4.059	.000	.1407	.0343	4.097	.000
ELECTION	.1378	.0529	2.603	.009	.0783	.0335	2.333	.020
PARTY	.0946	.0441	2.142	.032	.0687	.0283	2.425	.015
MULTAR	.1372	.0137	9.994	.000	.0779	.0081	9.640	.000
DIRECT	.6717	.0472	14.225	.000	.4391	.0299	14.681	.000
MULTOOLS	.0203	.0496	.409	.683	.0084	.0304	.276	.782
MULISSUE	.1127	.0551	2.045	.041	.0573	.0344	1.664	.096
_CUT1	1.1980	.1271						
_CUT2	1.6014	.1279						
Observations		3,689				3,689		
F(10, 3678)						89.28		
-2 × LLR / χ^2(10)		811.54						
Prob > F						.0000		
Prob > χ^2(10)		.0000						
R^2						.1953		
Pseudo R^2		.1150						
Log Likelihood		- 3,121.91						

Note: The terms _CUT1 and _CUT2 are ancillary parameters in the STATA program, where _CUT1 is equivalent to the negative term of the constant, and _CUT2 minus _CUT1 is equivalent to the MU(1) term in the LIMDEP program.

Prediction: *Based on maximum prob.*

		PREDICTED		
		0	1	2
ACTUAL	0	639	0	527
	1	233	0	246
	2	319	0	1,725

Correctly predicted: 64.08%

Based on the range of x'b

	PREDICTED		
	0	1	2
0	391	368	407
1	123	204	152
2	167	313	1,564

58.53%

TABLE 8.6 First-Difference Analysis of AFFECT

Dependent Variable: AFFECT (0 = Negative, 1 = Neutral, 2 = Positive)

Variable Names	Values	*PROBIT* Prob [y = 0]	*PROBIT* Prob [y = 1]	*PROBIT* Prob [y = 2]
STACRAFT**	1	.3522	.1574	.4904
	2	.2848	.1496	.5656
	3	.2243	.1372	.6385
	4	.1718	.1215	.7067
NEGOTIAB**	1	.3724	.1587	.4690
	2	.2823	.1492	.5685
	3	.2043	.1319	.6638
PCOLDWAR**	0	.2977	.1515	.5508
	1	.2249	.1374	.6377
ELECTION**	0	.2901	.1504	.5595
	1	.2448	.1421	.6131
PARTY*	1	.2916	.1506	.5577
	2	.2601	.1452	.5947
MULTAR**	1	.3341	.1559	.5101
	2	.2857	.1497	.5645
	3	.2410	.1412	.6178
	4	.2004	.1307	.6689
	5	.1642	.1188	.7170
	6	.1325	.1060	.7615
	7	.1053	.0928	.8019
	8	.0824	.0798	.8378
DIRECT**	0	.4088	.1598	.4314
	1	.1835	.1255	.6911
MULTOOLS	1	.2827	.1493	.5681
	2	.2759	.1481	.5760
	3	.2691	.1469	.5839
	4	.2625	.1457	.5918
MULISSUE*	1	.2884	.1502	.5614
	2	.2512	.1434	.6054
RCAPFRA2**	.2411	.2807	.1489	.5704
	.6093	.3468	.1570	.4962
	.02	.2442	.1419	.6139
	.03	.2458	.1423	.6119
	.04	.2474	.1426	.6100
	.05	.2490	.1430	.6080
	.075	.2530	.1438	.6031
	.1	.2571	.1446	.5983
	.4	.3085	.1530	.5385
	.5	.3266	.1551	.5183
	.6	.3451	.1568	.4981
	.9	.4026	.1597	.4377
	1.0	.4224	.1599	.4178
	1.1	.4423	.1596	.3981

Note: * denotes significance level < .05, and ** signifies significance level < .01.

As to parameter estimation, all the explanatory variables except MULTOOLS are significant at the .05 level. In comparing the results shown in Table 8.5, we can see that the coefficient of MULISSUE is insignificant in the OLS model, but significant in the Probit model.

At the bottom of Table 8.5, I present two types of prediction tables: one based upon the maximum probability, and the other based upon the range of $x'\beta$. The former is preferable when the outcome behavior is of primary research interest, while the latter is suitable when the underlying process, though unobservable, has a theoretical import. Their success rates in predicting the outcome are 64.08% and 58.53%, respectively.

Since my interest is on the realized behavior rather than on the underlying process, the prediction based upon the maximum probability better suits my analysis. This ordered Probit model performs well in predicting positive affect (84.39%), reasonably well in predicting negative affect (54.80%), but poorly in predicting neutral affect (0%).[70]

Table 8.6 lists the results of first differences. As these results show, the change, if any, in the probability of displaying positive affect, is mostly absorbed by the change in the probability of showing negative affect. Only a very small portion is converted to the change in the probability of exhibiting neutral affect. When more costly tools were chosen, the United States was more likely to show positive affect. In regard to issues, the

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[70] One problem in the ordered Probit model is that cases falling within the same range of $x'\beta$ may not lie inside the same category based on the maximum probability. This inconsistency was pointed out by Professor Charles W. Ostrom, Jr. in his lecture notes on political methodology, a course taught at Michigan State University in the Spring of 1992.

United States was more likely to show positive affect when the issue involved was more negotiable. It was more likely to display positive affect when the issue was directly related to the United States. When more than one issue was involved, the United States tended to exhibit positive affect. American foreign policy seemed to express more positive affect in the post-Cold War era than in the Cold War era. When there was a presidential election around the corner, the United States was more likely to display positive affect. With Democratic presidents in the Oval Office, the United States tended to show positive affect, although its probability of doing so was only 3% higher than it was under Republican presidents. The probability of showing positive affect became higher as the number of targets increased. The probability of showing negative affect dropped substantially (by 25.17%) when the number of targets rose from 1 to 8.

The results at the bottom of Table 8.6 show that the United States was less likely to show positive affect toward a more powerful opponent. Figure 8.2 is consistent with the results in Table 8.6. Figures 8.2.a and 8.2.b show that the probability of expressing negative or neutral affect rises when the target nation's relative capability becomes greater. Figure 8.2.c demonstrates that the probability of showing positive affect drops as the relative capability score goes up. If a target nation upgraded its power status from half to equally as strong as that of the United States, this would suggest a ten-point drop, from .5183 to .4178, in the probability of American's showing positive affect toward that target. Similar but more detailed interpretations can be made through examining Table 8.7, which calculates the real difference of probability changes resulting from values changes in the independent variables in order to provide better readability.

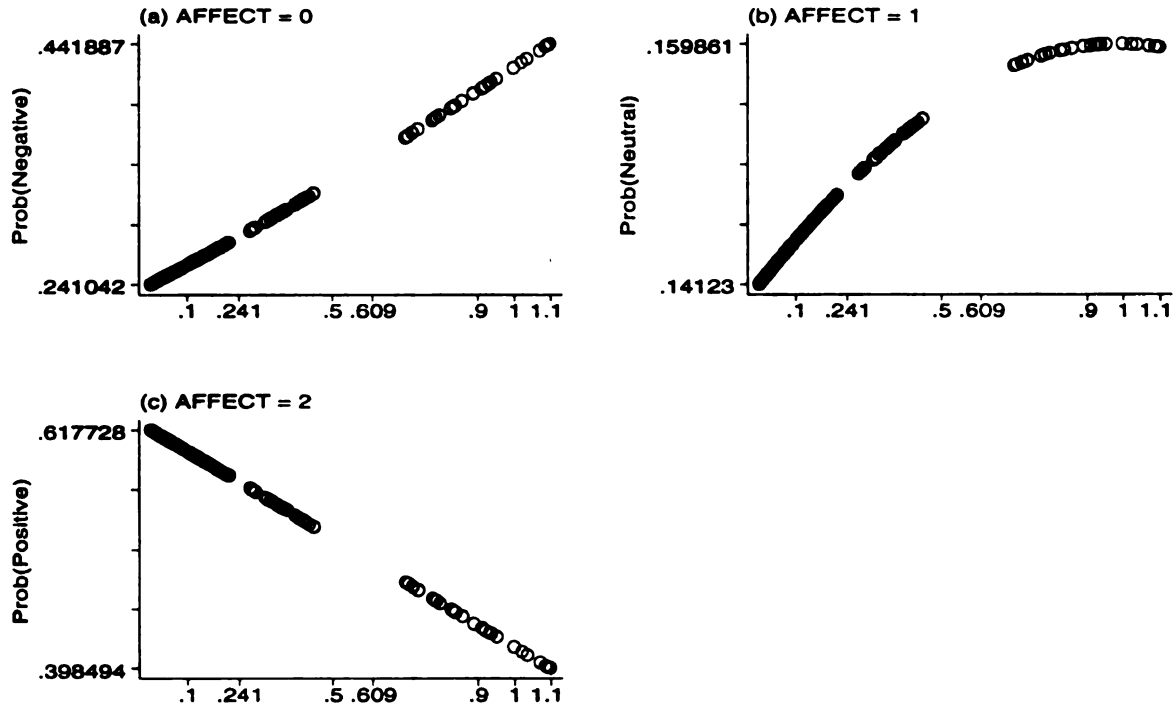

FIGURE 8.2 Probability Change of AFFECT versus Target's Relative Capability

TABLE 8.7 Real Difference of Probability Changes in AFFECT

Dependent Variable: AFFECT (0 = Negative, 1 = Neutral, 2 = Positive)

Variable Names	Values Change	Change in Prob [y = 0]	Change in Prob [y = 1]	Change in Prob [y = 2]
STACRAFT**	1 to 2	- .0674	- .0078	.0752
	2 to 3	- .0605	- .0124	.0729
	3 to 4	- .0525	- .0157	.0682
NEGOTIAB**	1 to 2	- .0901	- .0095	.0995
	2 to 3	- .0780	- .0173	.0953
PCOLDWAR**	0 to 1	- .0728	- .0141	.0869
ELECTION**	0 to 1	- .0453	- .0083	.0536
PARTY*	1 to 2	- .0315	- .0054	.0370
MULTAR**	1 to 2	- .0484	- .0062	.0544
	2 to 3	- .0447	- .0085	.0533
	3 to 4	- .0406	- .0105	.0511
	4 to 5	- .0362	- .0119	.0481
	5 to 6	- .0317	- .0128	.0445
	6 to 7	- .0272	- .0132	.0404
	7 to 8	- .0229	- .0130	.0359
DIRECT**	0 to 1	- .2253	- .0343	.2597
MULTOOLS	1 to 2	- .0068	- .0012	.0079
	2 to 3	- .0068	- .0012	.0079
	3 to 4	- .0066	- .0012	.0079
MULISSUE*	1 to 2	- .0372	- .0068	.0440
RCAPFRA2**	.24 to .61	.0661	.0081	- .0742
	.02 to .03	.0016	.0004	- .0020
	.03 to .04	.0016	.0003	- .0019
	.05 to .075	.0040	.0008	- .0049
	.075 to .1	.0041	.0008	- .0048
	.4 to .5	.0181	.0021	- .0202
	.5 to .6	.0185	.0017	- .0202
	.9 to 1.0	.0198	.0002	- .0199
	1.0 to 1.1	.0199	- .0003	- .0197

Note: The sum of the probability changes may not equal zero because of rounding errors.

TABLE 8.8 Ordered Probit Model of STACRAFT

	PROBIT				*OLS*			
Variable	Coef.	Std. Err.	z	P>|z|	Coef.	Std. Err.	t	P>|t|
CONSTANT					- .0415	.0709	- .586	.558
AFFECT	.1947	.0234	8.325	.000	.0978	.0145	6.739	.000
NEGOTIAB	.0828	.0390	2.124	.034	.0511	.0244	2.093	.036
RCAPFRA2	- .6928	.0565	- 12.258	.000	- .4074	.0339	- 12.024	.000
PCOLDWAR	.2399	.0483	4.963	.000	.1578	.0304	5.198	.000
ELECTION	.0131	.0480	.273	.785	- .0041	.0297	- .136	.891
PARTY	.1127	.0405	2.784	.005	.0535	.0251	2.131	.033
MULTAR	- .0469	.0116	- 4.037	.000	- .0378	.0072	- 5.236	.000
DIRECT	.1308	.0441	2.969	.003	.0469	.0272	1.723	.085
MULTOOLS	1.3165	.0417	31.535	.000	.8898	.0226	39.457	.000
MULISSUE	- .1141	.0491	- 2.323	.020	- .0996	.0304	- 3.272	.001
_CUT1	.9200	.1146						
_CUT2	2.8293	.1223						
_CUT3	3.3878	.1249						
Observations		3,689				3,689		
F(10, 3678)						212.50		
-2 × LLR / $\chi^2(10)$		1,597.90						
Prob > F						.0000		
Prob > $\chi^2(10)$		.0000						
R^2						.3662		
Pseudo R^2		.1863						
Log Likelihood		- 3,490.21						

Note: The Terms _CUT1, _CUT2 and _CUT3 are ancillary parameters in the STATA program, where _CUT1 is equivalent to the negative term of the constant, _CUT2 minus _CUT1 equals the MU(1) term, and _CUT3 minus _CUT1 equals the MU(2) term in the LIMDEP program.

Prediction: *Based on maximum prob.*

		PREDICTED			
		0	1	2	3
ACTUAL	0	283	681	0	0
	1	136	1,776	0	33
	2	11	232	0	118
	3	4	326	0	89

Correctly predicted: 58.23%

Based on the range of x'b

	PREDICTED			
	0	1	2	3
0	268	696	0	0
1	123	1,649	172	1
2	8	163	128	62
3	4	219	127	69

57.31%

It should be noted that the probability changes of "negative" and "neutral" affect are concurrent with each other, i.e., moving in the same direction, in almost all the values change in the independent variables. Nevertheless, the induced probability change of "negative affect" is always larger or more significant than that of "neutral affect." An example is the values change of MULTAR in the middle of Table 8.7. The probability of showing positive affect gets higher as the number of targets increases, but the magnitude of these probability changes (increases) drops with the inclusion of each additional target. This seems to be in accordance with Long's (1997, 39) characterization of marginal utility in interpreting the probability functions, which is often overlooked in using the OLS method.

8.3.2 Interpreting STACRAFT by the Ordered Probit Model

STACRAFT is a four-level, ordinal measure to represent the costliness of the primary foreign policy instruments used by the United States. Therefore, the ordered Probit model is an appropriate tool for examining what determines the selection of various types of statecraft in American foreign policy. Table 8.8 presents an ordered Probit analysis of the dependent variable, STACRAFT. According to the results of the log-likelihood-ratio test, the model exhibits a good fit. A .1863 value of Pseudo R^2 indicates that the model accounts for close to 20% of the variance in the outcome variable.

In regard to parameter estimation, only ELECTION among 10 independent variables is not significant at the .05 level. As mentioned earlier, hypothesis testing in the

OLS model might be misleading with the presence of a discrete dependent variable. In comparing the OLS results shown on the right side of Table 8.8 with Probit results, I found that the parameter estimate of DIRECT is not significant at the .05 level in the OLS model, but highly significant at the .01 level in the ordered Probit model. The coefficient of MULISSUE is significant at the .01 level in the OLS model, but merely significant at the .05 level in the ordered Probit model. This seems to suggest that both underestimation and overestimation can take place when applying the OLS method to the case of the discrete dependent variable.

At the bottom of Table 8.8, two types of prediction tables are listed. The interpretation will be focused on the one based on the maximum probability because my primary interest is in the outcome behavior rather than in the underlying process. The lower-left side of Table 8.8 shows that 58.23% of all cases are correctly predicted. The percentages of successful prediction for individual statecraft categories are 70.64% for "propaganda," 91.31% for "diplomacy," 0% for "economic tools," and 21.24% for "military tools." It appears that the ordered Probit model does well in predicting the use of propaganda or diplomacy, but performs poorly in predicting the use of economic or military tools.

Table 8.9 lists the results of first differences, while Table 8.10 displays the real difference of the probability changes in each category of STACRAFT. Across the board, the shifts in probability of using diplomacy, economic tools, and military tools, move in the same direction, as opposed to the shifts in probability of using propaganda.

TABLE 8.9 First-Difference Analysis of STACRAFT

Dep. Var.: STACRAFT (0 = Propaganda, 1 = Diplomatic, 2 = Economic, 3 = Military)

Variable Names	Values	*PROBIT* Prob [y = 0]	*PROBIT* Prob [y = 1]	*PROBIT* Prob [y = 2]	*PROBIT* Prob [y = 3]
AFFECT**	- 1	.2677	.6337	.0663	.0323
	0	.2077	.6555	.0877	.0491
	1	.1564	.6595	.1117	.0723
NEGOTIAB*	1	.2187	.6526	.0833	.0454
	2	.1951	.6581	.0930	.0539
	3	.1731	.6602	.1032	.0635
PCOLDWAR**	0	.2096	.6551	.0869	.0485
	1	.1474	.6582	.1167	.0778
ELECTION	0	.1954	.6580	.0929	.0537
	1	.1918	.6586	.0945	.0552
PARTY**	1	.2053	.6561	.0886	.0500
	2	.1748	.6602	.1023	.0627
MULTAR**	1	.1806	.6598	.0995	.0600
	2	.1932	.6584	.0938	.0546
	3	.2064	.6558	.0882	.0496
	4	.2200	.6523	.0828	.0450
	5	.2341	.6477	.0775	.0407
	6	.2488	.6421	.0724	.0368
	7	.2639	.6355	.0675	.0332
	8	.2794	.6280	.0628	.0298
DIRECT**	0	.2140	.6540	.0851	.0470
	1	.1779	.6600	.1009	.0613
MULTOOLS**	1	.3149	.6083	.0532	.0235
	2	.0361	.5081	.2042	.2516
	3	.0009	.1131	.1448	.7412
	4	.0000	.0058	.0190	.9752
MULISSUE*	1	.1884	.6591	.0960	.0566
	2	.2207	.6521	.0825	.0448
RCAPFRA2**	.2411	.1946	.6581	.0932	.0540
	.6093	.2723	.6315	.0649	.0313
	.02	.1553	.6594	.1123	.0730
	.03	.1569	.6596	.1114	.0720
	.04	.1586	.6598	.1105	.0711
	.05	.1603	.6599	.1097	.0702
	.075	.1645	.6602	.1074	.0679
	.1	.1689	.6603	.1053	.0656
	.4	.2264	.6503	.0803	.0430
	.5	.2478	.6425	.0727	.0370
	.6	.2702	.6325	.0655	.0318
	.9	.3429	.5909	.0466	.0195
	1.0	.3687	.5735	.0412	.0165
	1.1	.3952	.5547	.0363	.0138

Note: * denotes significance level < .05, and ** signifies significance level < .01.

TABLE 8.10 Real Difference of Probability Changes in STACRAFT

Variable Names	Values Change	Change in Prob [y = 0]	Change in Prob [y = 1]	Change in Prob [y = 2]	Change in Prob [y = 3]
AFFECT**	- 1 to 0	- .0600	.0218	.0214	.0168
	0 to 1	- .0513	.0040	.0240	.0233
NEGOTIAB*	1 to 2	- .0236	.0055	.0097	.0085
	2 to 3	- .0220	.0021	.0102	.0096
PCOLDWAR**	0 to 1	- .0622	.0031	.0298	.0293
ELECTION	0 to 1	- .0036	.0006	.0016	.0015
PARTY**	1 to 2	- .0305	.0041	.0137	.0127
MULTAR**	1 to 2	.0126	- .0014	- .0057	- .0054
	2 to 3	.0132	- .0026	- .0056	- .0050
	3 to 4	.0136	- .0035	- .0054	- .0046
	4 to 5	.0141	- .0046	- .0053	- .0043
	5 to 6	.0147	- .0056	- .0051	- .0039
	6 to 7	.0151	- .0066	- .0049	- .0036
	7 to 8	.0155	- .0075	- .0047	- .0034
DIRECT**	0 to 1	- .0360	.0060	.0158	.0143
MULTOOLS**	1 to 2	- .2788	- .1002	.1510	.2281
	2 to 3	- .0352	- .3950	- .0594	.4896
	3 to 4	- .0009	- .1073	- .1258	.2340
MULISSUE*	1 to 2	.0323	- .0070	- .0135	- .0118
RCAPFRA2**	.24 to .61	.0777	- .0266	- .0283	- .0227
	.02 to .03	.0017	.0002	- .0009	- .0010
	.03 to .04	.0017	.0002	- .0009	- .0009
	.05 to .075	.0042	.0003	- .0023	- .0023
	.075 to .1	.0044	.0001	- .0021	- .0023
	.4 to .5	.0214	- .0078	- .0076	- .0060
	.5 to .6	.0224	- .0100	- .0072	- .0052
	.9 to 1.0	.0260	- .0174	- .0054	- .0030
	1.0 to 1.1	.0265	- .0188	- .0049	- .0027

Note: The sum of the probability changes may not equal zero because of rounding errors.

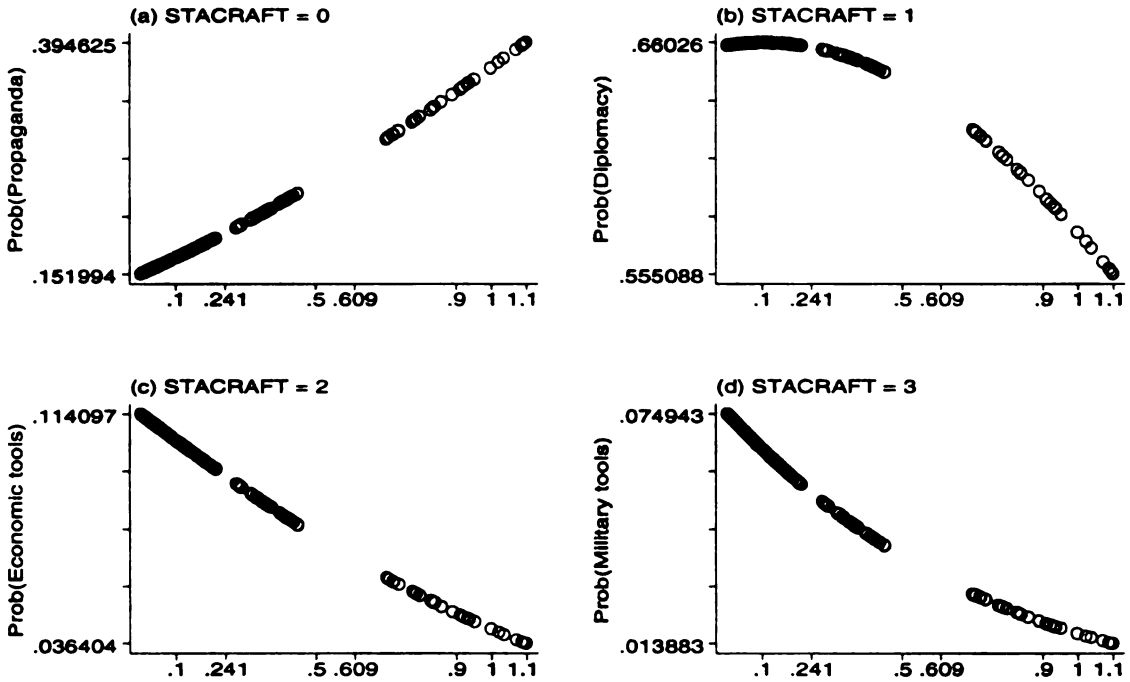

FIGURE 8.3 Probability Change of STACRAFT versus Target's Relative Capability

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As mentioned earlier, ELECTION is the only independent variable with an insignificant parameter in the equation. It is clear from Table 8.9 that the probability changes for each type of statecraft are not very discernible when ELECTION changes from 0 to 1. With a Democratic president in power, there was a three-point drop in the probability of using propaganda, accompanying a slight increase in the probability of using diplomacy, economic tools, or military tools.

Now I will briefly interpret the first-difference results of significant parameters. When the United States intended to show a more positive affect toward a target nation, it had a higher probability of adopting more costly policy instruments. In regard to issues, the more negotiable an issue, the higher the probability that the United States would take a more costly action. The more directly the United States was concerned with an issue, the higher the probability that it would apply instruments other than propaganda. When more than one issue was involved, however, there was a higher probability that the United States would use less costly instruments, such as propaganda.

In the post-Cold War period, there was a lesser chance for the United States to adopt propaganda, but a greater chance to use diplomacy, economic tools, and military tools. Here I do not know whether the more costly action taken tended to show positive or negative affect.

Not surprisingly, according to the results of MULTOOLS, when the United States opted for a combined use of multiple instruments, more costly tools were often involved. In addition, when there were more targets involved, the probability of using propaganda increased, but the probability of adopting other types of instruments dropped.

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The results at the bottom of Table 8.9 show that the probability of using more costly foreign policies decreased, when the United States faced a more powerful opponent. Hypothetically, when a target increases its strength from one-tenth to equally as strong as the United States, its probability of receiving propaganda doubles. At the same time, its probability of confronting more costly instruments such as economic or military policy decreases substantially by an amount of more than half. The probability curves shown in Figure 8.3 confirm the assessment above.

8.4 EVENT COUNT MODELS

8.4.1 Poisson Regression Models for Count Data

A count variable concerns the number of events occurring over a period of time. The observed discrete events can be viewed as a product generated by an underlying continuous process. Existing examples in social sciences are alliances and stability (King 1989b; McGowan and Rood 1975; Silverson and Tennefoss 1984), outbreaks of war (Houweling and Kune 1984), appointments of supreme court justices (King 1987; Ulmer 1982), economic sanctions (Hufbauer and Schott 1983; Martin 1992), and research and development (R & D) expenditures and patents (Hausman et al. 1984), to name only a few. The application of the OLS method to count variables gives rise to unreliable results that contain "inefficient, inconsistent, and biased estimates" (Long 1997, 217). This is especially true when the number of counts in question is small (Lovett and Flowerdew 1989, 191). A basic formula to deal with the count variables is the Poisson regression model, where the probability of a certain count is assumed to follow a Poisson distribution.

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A Poisson distribution can be represented as follows:

$$\Pr(y \mid \lambda) = \frac{\lambda^{y} e^{-\lambda}}{y!}, \tag{8.15}$$

where y is a random variable containing values of nonnegative integers, i.e., 0, 1, 2, ..., and λ is greater than zero to ensure against negative predicted values. For example, if assigning a maximum of 4 to y, then we can derive the probabilities for various counts as follows:

$$\Pr(y = 0 \mid \lambda) = \lambda^{0} e^{-\lambda} / 0! = e^{-\lambda},$$

$$\Pr(y = 1 \mid \lambda) = \lambda^{1} e^{-\lambda} / 1! = \lambda e^{-\lambda},$$

$$\Pr(y = 2 \mid \lambda) = \lambda^{2} e^{-\lambda} / 2! = \lambda^{2} e^{-\lambda} / 2,$$

$$\Pr(y = 3 \mid \lambda) = \lambda^{3} e^{-\lambda} / 3! = \lambda^{3} e^{-\lambda} / 6, \text{ and}$$

$$\Pr(y = 4 \mid \lambda) = \lambda^{4} e^{-\lambda} / 4! = \lambda^{4} e^{-\lambda} / 24. \tag{8.16}$$

Subsequently, the Poisson regression model can be expressed as

$$\Pr(y \mid x) = \frac{\lambda^{y} e^{-\lambda}}{y!}, \tag{8.17}$$

where y is the number of events, and in most common cases, $E(y \mid x) = Var(y \mid x) = \lambda = \exp(x'b)$. Aside from assuming $\lambda = \exp(x'b)$, there are other ways to assure $\lambda > 0$, which constrains predicted values of y to be positive, but they are often associated with computational difficulties (Cameron and Trivedi 1986, 31).

According to Maddala (1983, 51), the likelihood function for the Poisson regression model can be derived as follows:

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$$L = \prod \frac{\lambda^{y} e^{-\lambda}}{y!} = \exp\left(-\sum_{i} \lambda_i + \beta_0 \sum_{i} y_i + \sum_{k=1}^{p} \beta_k \sum_{i} x_{ik} y_i\right)\left(\prod_{i} y_i!\right)^{-1} . \quad (8.18)$$

A defining characteristic of the Poisson regression model is equidispersion, meaning that the conditional variance equals the conditional mean, or formally, $Var(y \mid x) = E(y \mid x) = \lambda$. In practice, however, the conditional variance often exceeds the conditional mean for the count variables, and this is called overdispersion (Long 1997, 218-9). Moreover, two critical assumptions of the Poisson regression model are homogeneity and independence (King 1989b, 126-7). The property of homogeneity holds that λ, which can be regarded as the rate of event occurrence or the expected counts, is constant over time. The property of independence implies that the occurrence of a present event does not affect the probability of the occurrence of a future event. Other count models, e.g., the negative binomial regression model, are developed to account for circumstances under which the preceding assumptions are violated.[71]

How does my data set meet the assumptions of homogeneity and independence mentioned by King (1989b)? To test for the homogeneity assumption, I conducted a one-way analysis of variance by splitting the sample in half. The two means are 1.2711 in the first half of the sample, and 1.3046 in the second half. The resulting F statistic is 76.81 (with one degree of freedom) and has a corresponding significance level of .0000. This leads to a rejection of the null hypothesis that the two means are not different from each

[71] Using the negative binomial regression programs of LIMDEP and STATA yields the results identical to those of the Poisson regression model. This suggests, somewhat indirectly, that overdispersion in my data is not a grave concern. See Long (1997, chapter 8) for detailed expositions of the negative binomial regression model and recent developments on various tests for detecting overdispersion.

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other. More importantly, results of the Bartlett's test for equal variance are $\chi^2(1) =$ .5178, and Prob.> $\chi^2 = 0.472$. A large value of the corresponding significance level fails to reject the null hypothesis that the variances are homogeneous. Therefore, I conclude that my data set does not show strong evidence of violating the assumption of homogeneity.

Next, I turn to the assumption of independence. Since this study considers U.S. reaction to various target nations, I have little concern about the potentially high correlation between adjacent observations. In other words, it would be unusual to see that U.S. action toward Nation *i* depends upon a previous foreign policy act directed at Nation *j*, especially when different events are involved. In brief, my data set is unlikely to violate the assumption of independence when applied to the Poisson method.

There is a specific problem, however, regarding the dependent variable MULTOOLS: it is truncated at zero. To enter the sample, any valid case requires U.S. delivery of statecraft of any kind. In other words, I did not include in my data set the events, no matter how salient they were, in which the United States did nothing, or the U.S. reaction was not reported. Grogger and Carson (1991, 229) elaborate the problem in estimating a truncated Poisson model that:

> In the case of the untruncated Poisson, β is consistently estimated even in the presence of overdispersion, although the standard errors are downwardly biased. However, the estimates of the regression parameters and choice probabilities from a truncated Poisson model will be biased and inconsistent in the presence of overdispersion...

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To resolve the estimation problem of truncation at zero, a distinction can be made between the probabilities of zero and positive counts as

$$\Pr(y = 0 \mid x) = e^{-\lambda}, \text{ and}$$

$$\Pr(y > 0 \mid x) = 1 - e^{-\lambda}. \tag{8.19}$$

The calculations of truncated estimators can be carried out, based upon the law of conditional probability:

$$\Pr(A \mid B) = \frac{\Pr(A \cap B)}{\Pr(B)}. \tag{8.20}$$

Here, $\Pr(A \mid B)$ can be replaced by the probability of observing y, given that $y > 0$, $\Pr(A \cap B)$ by the probability of observing y, and $\Pr(B)$ by the probability of observing $y > 0$.

Combining Equations 8.19 and 8.20 results in

$$\Pr(y \mid y > 0, x) = \frac{\Pr(y \mid x)}{\Pr(y > 0 \mid x)} = \frac{\lambda^y e^{-\lambda}}{y!(1 - e^{-\lambda})} = \frac{\lambda^y}{y!(e^{\lambda} - 1)}. \tag{8.21}$$

The truncated probability function equals the standard probability function times a factor of $[1 - e^{-\lambda}]^{-1}$. Since the factor is always larger than 1, the truncated probability function is greater than the untruncated probability function. Long (1997, 239-40) provides the conditional mean and variance of the truncated-at-zero Poisson regression model:

$$E(y \mid y > 0, x) = \frac{E(y \mid x)}{\Pr(y > 0 \mid x)} = \frac{\lambda}{1 - e^{-\lambda}}, \tag{8.22}$$

and

$$Var(y \mid y > 0, x) = E(y \mid y > 0, x)[1 - \Pr(y = 0 \mid x) E(y \mid y > 0, x)]$$

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$$= \frac{\lambda}{1-e^{-\lambda}}\left[1 - \frac{\lambda}{e^{\lambda}-1}\right]. \qquad (8.23)$$

According to Long, the log-likelihood function of the truncated-at-zero Poisson regression model is given by

$$L = \prod \Pr(y \mid y > 0, x) = \prod \frac{\lambda^{y} e^{-\lambda}}{y!(1-e^{-\lambda})}. \qquad (8.24)$$

8.4.2 Model Fitting

The value of scaled deviance, which is "a measure of the overall difference between the observed values of Y and those predicted by the model," can be used to compare the results of fitting a Poisson model (Lovett and Flowerdew 1989, 192). In the Poisson regression model, the scaled deviance is defined as

$$G^2 = 2\sum y \ln\left(\frac{y}{\lambda}\right), \qquad (8.25)$$

which has a distribution approximating to the chi-square distribution. Generally, a large value of deviance implies a poor model fit, while a small one signifies a good model fit. Besides the "goodness-of-fit" mentioned above, Lovett and Flowerdew further suggest "the significance of parameters" and "interpretability" as three basic criteria for model evaluation (p. 193). I will follow Lovett and Flowerdew's approach to evaluate the models at hand.

TABLE 8.11 Poisson Models of MULTOOLS

Dependent Variable: MULTOOLS (Types of statecraft used, from 1 to 4)

	Without Truncation				*With Truncation*			
	W/O STACRAFT		W/ STACRAFT		W/O STACRAFT		W/ STACRAFT	
Variable	Coef.	P|t|<x	Coef.	P|t|<x	Coef.	P|t|<x	Coef.	P|t|<x
CONSTANT	.2128	.0078	-.3251	.0003	-.8139	.0000	-3.4296	.0000
	(.0800)		*(.0887)*		*(.1642)*		*(.2034)*	
AFFECT	.0391	.0289	.0072	.6862	.1677	.0000	.0675	.0632
	(.0179)		*(.0179)*		*(.0380)*		*(.0363)*	
NEGOTIAB	-.0077	.7997	-.0170	.5714	-.0210	.7370	-.0007	.9919
	(.0302)		*(.0301)*		*(.0626)*		*(.0642)*	
RCAPFRA2	-.1195	.0050	.0242	.5810	-.5562	.0000	.1158	.2484
	(.0426)		*(.0438)*		*(.0979)*		*(.1003)*	
PCOLDWAR	.0103	.7805	-.0295	.4273	.0398	.5845	-.0570	.4311
	(.0370)		*(.0371)*		*(.0729)*		*(.0724)*	
ELECTION	.0326	.3674	.0246	.4971	.1295	.0678	.0980	.1623
	(.0361)		*(.0362)*		*(.0709)*		*(.0701)*	
PARTY	-.0310	.3154	-.0310	.3150	-.1350	.0333	-.0867	.1649
	(.0309)		*(.0309)*		*(.0634)*		*(.0624)*	
MULTAR	-.0277	.0021	-.0078	.3869	-.1207	.0000	-.0132	.5004
	(.0090)		*(.0090)*		*(.0198)*		*(.0196)*	
DIRECT	.0944	.0047	.0620	.0640	.3896	.0000	.3180	.0000
	(.0334)		*(.0335)*		*(.0697)*		*(.0684)*	
MULISSUE	.0940	.0096	.0952	.0087	.3557	.0000	.4025	.0000
	(.0363)		*(.0363)*		*(.0681)*		*(.0673)*	
STACRAFT			.2383	.0000			.8630	.0000
			(.0157)				*(.0310)*	
Log-Likelihood	-4,325.8		-4,215.9		-2,408.8		-2,009.4	
Chi-squared	766.56		465.43		7,203.4		12,479	
G-squared	656.15		436.34		9,612.3		11,618	

Note: Within parentheses are standard errors. The above results are based upon the LIMDEP 5.0 program for its built-in assessment of the G-squared values.

Probability

FIGURE
Models

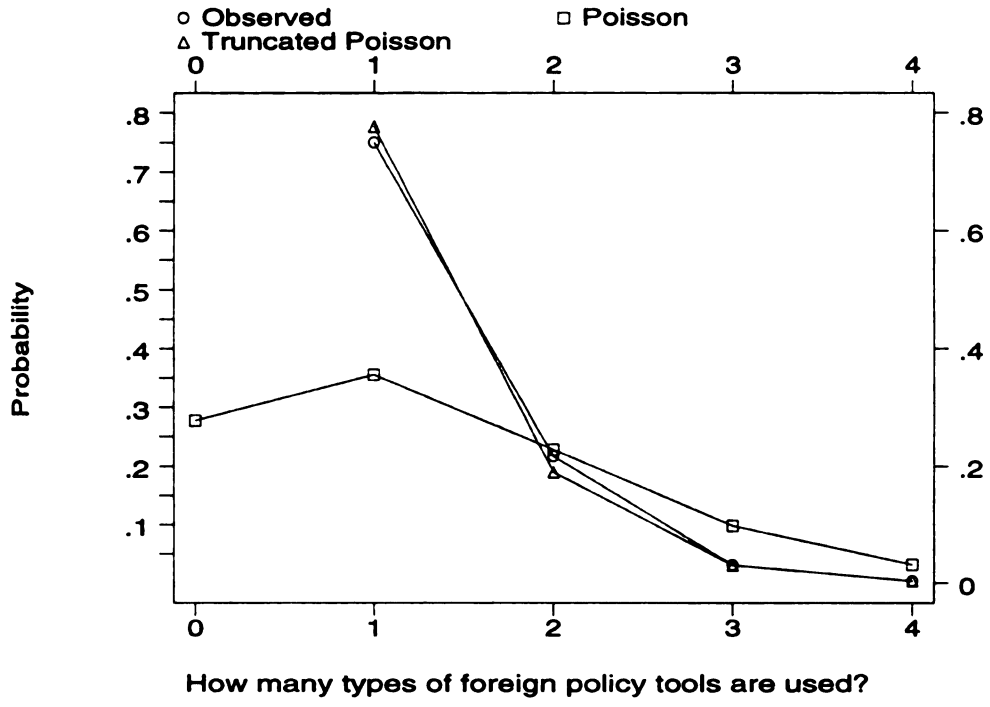

FIGURE 8.4 Comparisons of the Mean Predicted Probabilities from the Poisson Models

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TABLE 8.12 Truncated-at-Zero Poisson Model of MULTOOLS

Dependent Variable: MULTOOLS (Types of statecraft used, from 1 to 4)

	Truncated-at-Zero Poisson				*OLS*			
Variable	Coef.	Std. Err.	z	P>|z|	Coef.	Std. Err.	t	P>|t|
AFFECT	.1677	.0380	4.414	.000	.0500	.0106	4.731	.000
NEGOTIAB	- .0210	.0626	- .336	.737	- .0109	.0179	- .611	.541
RCAPFRA2	- .5561	.0979	- 5.681	.000	- .1493	.0246	- 6.058	.000
PCOLDWAR	.0399	.0729	.547	.584	.0134	.0221	.603	.546
ELECTION	.1295	.0709	1.827	.068	.0424	.0217	1.954	.051
PARTY	- .1349	.0634	- 2.129	.033	- .0391	.0183	- 2.136	.033
MULTAR	- .1207	.0198	- 6.101	.000	- .0351	.0052	- 6.692	.000
DIRECT	.3896	.0697	5.586	.000	.1218	.0198	6.151	.000
MULISSUE	.3557	.0681	5.225	.000	.1242	.0222	5.604	.000
CONSTANT	- .8139	.1642	- 4.955	.000	1.2363	.0476	25.956	.000
Observations		3,689				3,689		
F(9, 3679)						20.39		
-2 × LLR / $\chi^2(9)$		165.29						
Prob > F						.0000		
Prob > $\chi^2(9)$		.0000						
R^2						.0452		
Pseudo R^2		.0332						
Root MSE						.5244		
Log Likelihood		- 2,408.8						

Note: The results of the truncated-at-zero Poisson model are based upon the *trpois0.ado* program written by Dr. Joseph Hilbe, at Arizona State University, for STATA users.

Table 8.11 presents four possible models accounting for the count variable of MULTOOLS. Here there was a question concerning the inclusion or exclusion of STACRAFT as an explanatory variable. In the case without truncation, the inclusion of STACRAFT leads to a reduction of deviance by 220 for the loss of one degree of freedom, but an increase of insignificant parameters (i.e., $\alpha = .05$) from four to as many as eight. Despite the improved model fit, the inclusion of STACRAFT seemed to be inappropriate. In the case of truncation-at-zero, or on the right side of Table 8.11, the inclusion of STACRAFT increases not only the value of deviance but also the number of insignificant parameters. Therefore, STACRAFT should not be added to the equation. When STACRAFT is excluded, a comparison between the untruncated and truncated models suggests a phenomenon of downwardly biased estimation in the untruncated equation—the smaller standard errors in the untruncated Poisson model underestimate the significance of some parameters, in particular, the coefficient of PARTY (i.e., .3154 vs. .0333 in the corresponding significance level).

8.4.3 Interpreting MULTOOLS by the Truncated-at-Zero Poisson Model

Figure 8.4 presents a comparison between the mean predicted probabilities of the standard Poisson and truncated-at-zero Poisson models versus the observed probability of MULTOOLS. Apparently, the truncated Poisson model performs much better than the standard Poisson model in fitting the real data.

Table 8.12 provides the results of parameter estimation for the truncated Poisson and OLS methods. Both show a good overall model fit. The significance or signs of

parameters in both models are consistent with each other. The real difference, however, resides in interpretation. The count variable is better described in terms of probability based upon a nonlinear (or curvilinear) Poisson distribution. The parameters of NEGOTIAB, PCOLDWAR, and ELECTION are not significant at the .05 level. For interpretation, all of the four methods proposed by King (1989a) are applicable as well. I list the outcome of first-difference analysis in Table 8.13. Notably, the probabilities of using more than one type of foreign policy tools move in the same direction, as opposed to the probability of using only one type of foreign policy tools. In particular, the probability of using two types of tools varies to a greater extent than the probabilities of using more than two types of tools.

As is shown in Table 8.13, there is a positive relationship between AFFECT and MULTOOLS. A change from negative to positive affect leads to an increase of 4.59% in the probability of using two types of tools, 1.69% in the probability of using three types of tools, and .32% in the probability of using four types of tools. I will forgo an attempt to interpret the impacts of NEGOTIAB, PCOLDWAR and ELECTION, since their parameters are insignificant. In regard to presidential party, a Republican president was 2.71% less likely to adopt only one type of statecraft, than a Democratic president. Moreover, there is a negative relationship between MULTAR and MULTOOLS. The greater the number of target nations involved, the less likely the United States was to adopt more than one type of statecraft. For example, a change from a single target to more than seven targets led to a 13.77% increase in the probability of using only one type of statecraft.

TABLE 8.13 First-Difference Analysis of MULTOOLS

Dependent Variable: MULTOOLS (Types of statecraft used, from 1 to 4)

Variable Names	Values	*POISSON* Prob [y = 1]	*POISSON* Prob [y = 2]	*POISSON* Prob [y = 3]	*POISSON* Prob [y = 4]
AFFECT**	- 1	.8154	.1611	.0212	.0021
	0	.7844	.1833	.0286	.0033
	1	.7489	.2070	.0381	.0053
NEGOTIAB	1	.7720	.1918	.0318	.0039
	2	.7763	.1889	.0306	.0037
	3	.7806	.1860	.0295	.0035
PCOLDWAR	0	.7782	.1876	.0302	.0036
	1	.7700	.1932	.0323	.0041
ELECTION	0	.7817	.1853	.0293	.0035
	1	.7544	.2035	.0366	.0049
PARTY*	1	.7669	.1953	.0331	.0042
	2	.7940	.1766	.0262	.0029
MULTAR**	1	.7476	.2079	.0385	.0054
	2	.7737	.1907	.0313	.0039
	3	.7974	.1742	.0254	.0028
	4	.8189	.1585	.0205	.0020
	5	.8382	.1438	.0165	.0014
	6	.8556	.1301	.0132	.0010
	7	.8713	.1174	.0106	.0007
	8	.8853	.1058	.0084	.0005
DIRECT**	0	.8146	.1617	.0214	.0021
	1	.7354	.2155	.0421	.0062
MULISSUE**	1	.7906	.1790	.0270	.0031
	2	.7114	.2299	.0495	.0080
RCAPFRA2**	.2411	.7764	.1888	.0306	.0037
	.6093	.8149	.1615	.0213	.0021
	.02	.7500	.2063	.0378	.0052
	.03	.7513	.2055	.0375	.0051
	.04	.7525	.2047	.0371	.0050
	.05	.7538	.2039	.0368	.0050
	.075	.7568	.2019	.0359	.0048
	.1	.7599	.1999	.0351	.0046
	.4	.7938	.1767	.0262	.0029
	.5	.8041	.1694	.0238	.0025
	.6	.8140	.1622	.0215	.0021
	.9	.8409	.1418	.0159	.0013
	1.0	.8490	.1354	.0144	.0011
	1.1	.8567	.1292	.0130	.0010

Note: * denotes significance level < .05, and ** signifies significance level < .01. The sum of the probabilities in every row may not equal one because of rounding errors.

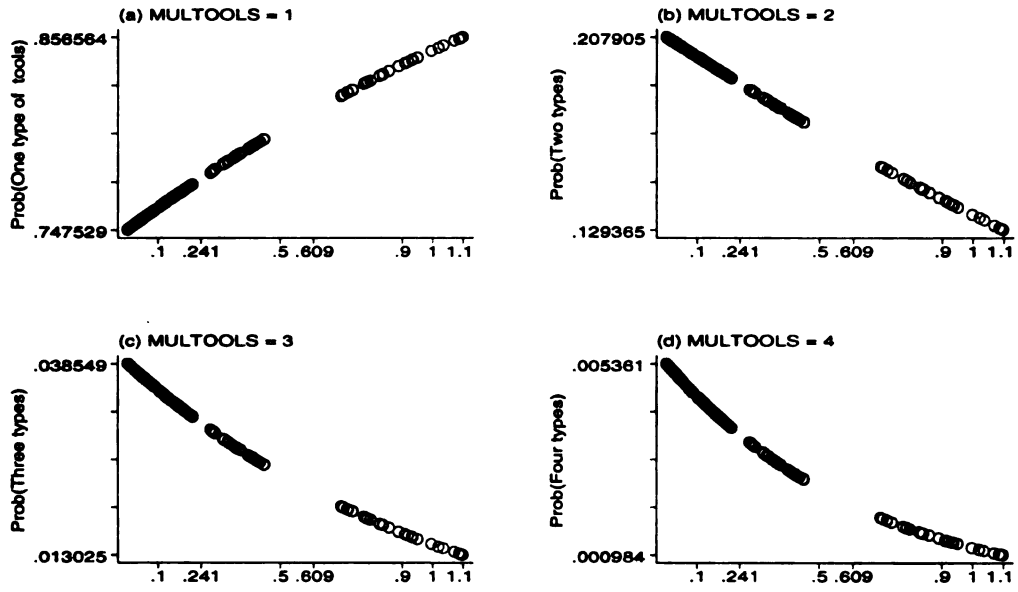

FIGURE 8.5 Probability Change of MULTOOLS versus Target's Relative Capability

As to other issue-related explanatory variables, DIRECT and MULISSUE both contain significant parameters at the .01 level. There was a drop (7.92%) in the probability of using only one type of statecraft when the issues changed from having a more direct to having a less direct relationship to the United States. There was a rise in the probabilities of using more than one type of statecraft (5.09%, 2.25%, and .49%), when multiple issues were present.

A negative relationship exists between RCAPFRA2 and MULTOOLS. The more powerful a target nation was, the less likely the United States was to apply multiple types of statecraft. For example, the probability of American policymakers' adopting only one type of foreign tools was 8.91% greater for an equally powerful target nation than for a target nation one-tenth as powerful as the United States. Similar, detailed interpretations can be obtained based upon the first-difference results at the bottom of Table 8.13. I will not recount them here. Figure 8.5 is a visual description of how the probabilities of various counts vary with the target's relative capability scores, holding other variables constant at their mean values. Again, the probabilities of using more than one type of statecraft simultaneously decrease as the target's relative capability scores increase, as displayed in Figures 8.5.b, 8.5.c, and 8.5.d. An opposite directional change with regard to the probability of using only one type of statecraft can be found in Figure 8.5.a.

8.5 CLASSICAL REGRESSION MODELS

I discovered in the process of analysis that STACRAFT (the costliness of the primary foreign policy instruments used) alone does not provide a complete picture of foreign policy behavior. Without further specification, one may perceive the gravity of

the use of economic or military policy in some events, but have no clues about whether such action was intended to harm or benefit the receiving nation. A better account of foreign policy behavior would encompass the perspective of AFFECT, which represents the sender's affect toward the target. I can then describe a certain foreign policy action in terms of either its orientation or its magnitude.

A variable that is able to account for both orientation and magnitude, will be a strong candidate for accomplishing the task of summarizing foreign policy behavior in a single index. As will be shown in the next chapter, FACINDEX (= STACRAFT × AFFECT) can serve as a cooperation/conflict index to sum up the bilateral relations between any two nations. Since the level of measurement for FACINDEX (an integer scale from -4 to 4) is interval in nature, the linear regression model is applicable. I will start with a brief introduction to the OLS method, move on to interpret the findings, and then examine the violations of assumptions.

8.5.1 Linear Regression

The linear regression model can be expressed as

$$y_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \cdots + \beta_k x_{ik} + \varepsilon_i, \tag{8.26}$$

or simply,

$$y_i = \sum \beta_k x_{ik} + \varepsilon_i = x'\beta + \varepsilon, \tag{8.27}$$

where y is the dependent variable, the x's are independent variables, and ε is the error term. For the meaning of subscriptions, the equation has k parameters of the x's, without counting the constant, and i observations in the data under consideration. In the

following, assumptions (i) and (ii) are concerned with the independent variables, while the remaining assumptions have to do with the distribution of the error term ε:

(i) Linearity: y can be represented as a linear combination of the x's. Note that some nonlinear relationships between y and the x's, through appropriate power transformations, can be incorporated in the linear functional form.

(ii) Colinearity: The independent variable x's are linearly independent. This means that none of the x's can be represented as a linear combination of other x's.

(iii) Zero conditional mean of ε: The conditional expected value of the error given x is zero, i.e., $E(\varepsilon_i \mid x_i) = 0$. This implies that the conditional expected value of y given x is a linear combination of the x's, or formally, $E(y_i \mid x_i) = E(x'\beta + \varepsilon_i \mid x_i) = x'\beta + E(\varepsilon_i \mid x_i) = x'\beta$.

(iv) Homoscedastic and uncorrelated errors: The errors are assumed to be homoscedastic—the variance of the errors given x is constant, or formally, $Var(\varepsilon_i \mid x_i) = \sigma^2$. Also, the errors are assumed to be uncorrelated across observations, that is, for any two observations, their covariance of the error term is zero.

(v) Normality: The distribution of the errors given x is assumed to be normal.

Additional assumptions not itemized above are (1) no specification error: no relevant independent variables are excluded and no irrelevant independent variables are included, and (2) no measurement error: the dependent and independent variables are accurately measured. Lewis-Beck (1980, 26-8) touches on the violations and remedies of these additional assumptions, while Johnson et al. (1987, chapters 13, 15) provide more detailed treatments.

The most popular method of obtaining regression estimates from a sample is the OLS (Ordinary Least Squares) method, which minimizes the sum of the squared residuals. According to the Gauss-Markov Theorem, once the classical assumptions

(except the one concerning Normality) are met, the OLS method provides Best (minimum variance), Linear, Unbiased Estimators (i.e., BLUE) for the β's in the regression equation.

There are alternative estimation methods other than OLS. Luskin (1984, 513) provides a short list of alternative estimators as follows:

> Yet not all linear equations are appropriately estimated by OLS. Depending on the larger model and assumptions, other estimators may be statistically preferable. Heteroskedastic or autoregressive disturbances may suggest estimation by generalized least squares (GLS) or a species of maximum likelihood (ML), the presence of other equations may suggest estimation by two-stage or three-stage least squares (2SLS or 3SLS) or limited- or full-information maximum likelihood (LIML or FIML), and so on.

In general, OLS has become a standard practice in regression analysis. The presentation of other techniques usually includes the OLS results as a point of reference. Moreover, there is a "robust" perspective about the OLS method—the violations of the classical assumptions do not necessarily lead to fragile or useless results (Chatterjee and Price 1991, 8). Lewis-Beck suggests that "some of the assumptions are more robust than others" (1980, 30). In general, classical regression analysis is a simple but powerful tool for investigating relationships among variables.

TABLE 8.14 Regression Model of FACINDEX

Dependent Variable: FACINDEX (A cooperation/conflict scale, from -4 to 4)

Variable	Coef.	Std. Err.	t	P>|t|
NEGOTIAB	.4349	.0645	6.746	.000
RCAPFRA2	- .7952	.0885	- 8.980	.000
PCOLDWAR	.3217	.0803	4.004	.000
ELECTION	.1219	.0788	1.547	.122
PARTY	.1259	.0665	1.893	.058
MULTAR	.1326	.0189	7.002	.000
DIRECT	1.0051	.0702	14.323	.000
MULTOOLS	.4600	.0597	7.708	.000
MULISSUE	- .0328	.0808	- .406	.684
CONSTANT	- 1.6623	.1856	- 8.959	.000

Observations	3,689
F(9, 3679)	80.16
Prob > F	.0000
R^2	.1639
Adjusted R^2	.1619
Root MSE	1.9041

8.5.2 Interpreting FACINDEX by the Linear Regression Method

Table 8.14 presents the OLS results of the linear regression model concerning the overall impression of cooperation/conflict delivered by the United States. The overall model fit is good, with an F-statistic, 80.16 (d.f. = 9, N = 3679), which has a level of significance far smaller than .01. The R^2 value indicates that about 16% of the variance in the dependent variable can be explained by the linear combination of the independent variables in the regression equation.[72]

Seven of 10 parameters, including the constant, are significant at a level of .05. Three insignificant parameters are ELECTION, PARTY (a borderline p value of .058), and MULISSUE. If the present equation were not greatly underspecified, the constant term, -1.6623, would imply that the characteristic American foreign policy behavior is on average somewhere between negative propaganda and diplomacy. In other words, the initial position of the United States in dealing with any other nation would be nothing like that of a war monger in a fighting mode trying to survive in "the state of nature." In general, it would be confrontational to a lesser degree.

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[72] Table 8.14 lists two additional statistics: RMS and Adjusted R^2. Neither has much bearing on interpreting the single regression model here, but they will be useful for model comparison on other occasions. The term RMS stands for Residual Mean Square, measuring "the closeness of the observed and predicted values for the two models [e.g., the ones with or without origins]" (Chatterjee and Price 1991, 19-20). The Adjusted R^2 has a score similar to the R^2. The Adjusted R^2 value is primarily used to make a comparison between models with different numbers of explanatory variables. It is not suitable for an interpretation of the proportion of total variation in the dependent variable explained in the regression equation (p. 64-5). For divergent views on the utility of R^2 in the regression analysis, see Achen (1991), King (1986, 1991a, 1991b), Lewis-Beck and Skalaban (1991), and Luskin (1991).

For issue-related variables, a positive relationship can be found either between NEGOTIAB and FACINDEX, or between DIRECT and FACINDEX. When the issue type changed from "transcendent" to "symbolic," or from "symbolic" to "substantive," the cooperation from the United States increased by a scale of .435. From another perspective, I may say that when the issue type shifted from "transcendent" to "substantive," the United States was likely to drop its hostile action to the next lower level, say, from negative sanctions to negative diplomacy. Yet, when the issue was more directly related to the United States, it tended to increase its level of cooperation by a scale of 1.005, e.g., from positive propaganda to positive diplomacy. The insignificant coefficient of MULISSUE implies that the presence of multiple issues had no bearing on the degree of U.S. cooperation or hostility.

As to the explanatory variables related to the temporal factor, only the coefficient of PCOLDWAR is significant. In the post-Cold War era, the United States was more likely to increase cooperation with other nations by a scale of .322. Neither presidential election years (ELECTION) nor the presidential party (PARTY) had an impact on the cooperative or hostile nature of American foreign policy behavior.

Based upon the significant parameter of MULTOOLS, when each additional type of statecraft was selected to be included in the policy package, the United States was more likely to launch a cooperative foreign policy by a scale of .460. There are inherent difficulties, however, in interpreting the effect of MULTOOLS on FACINDEX, because the use of multiple types of statecraft often occurs in extreme situations involving cooperation or conflict. In particular, it makes no sense to say that when conflict is escalating, the choice of multiple tools often leads to an improved or more cooperative

situation. The significance of the parameter of MULTOOLS is somewhat contradictory to my expectations.

As to the actor-related variables, both the number of target nations (MULTAR) and the target's capability relative to the United States (RCAPFRA2) appear to be significant factors in determining cooperation or hostility in U.S. foreign policy. With the inclusion of each additional target nation in an event, the United States tended to take more cooperative action, by a scale of .133. It is clear that the change from facing a single target to encountering 7 or more targets led to an increase of cooperation, by one level on the scale, e.g., from positive propaganda to positive diplomacy, or to a decrease in conflict, e.g., from negative diplomacy to negative propaganda.

Finally, there is a negative relationship between RCAPFRA2 and FACINDEX. The more powerful the target nation, the less cooperative the U.S. foreign policy directed toward that nation. A unit change in RCAPFRA2, as in a change from a tiny target to a superpower opponent, led to a decrease in cooperation from the United States by a scale of -.795, which is close to the drop of one level of cooperation. If U.S. capability is scored on a 100-point index, a 10-point increase in a target nation's capability will lead to a drop in cooperation from the United States by a scale of .0795. This relatively small amount of impact by RCAPFRA2 implies that the relations between the United States and other more powerful nations may be competing and confrontational per se, but not destructive or violent enough to result in a volatile and chaotic international system.

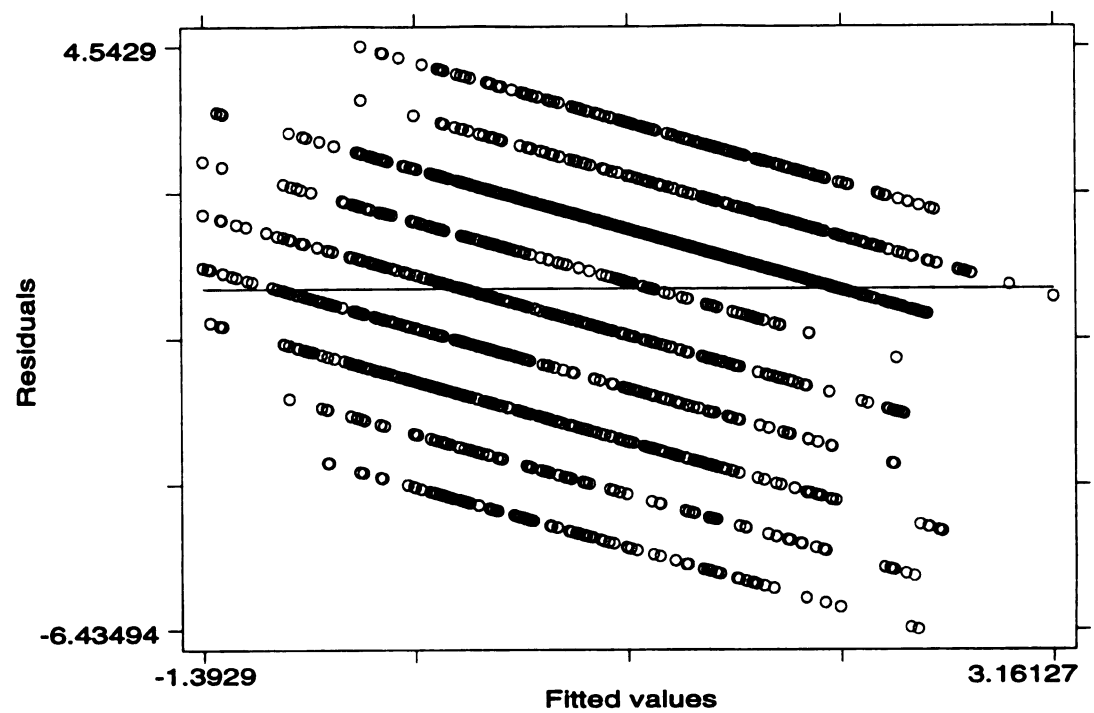

FIGURE 8.6 Residuals versus Fitted Values

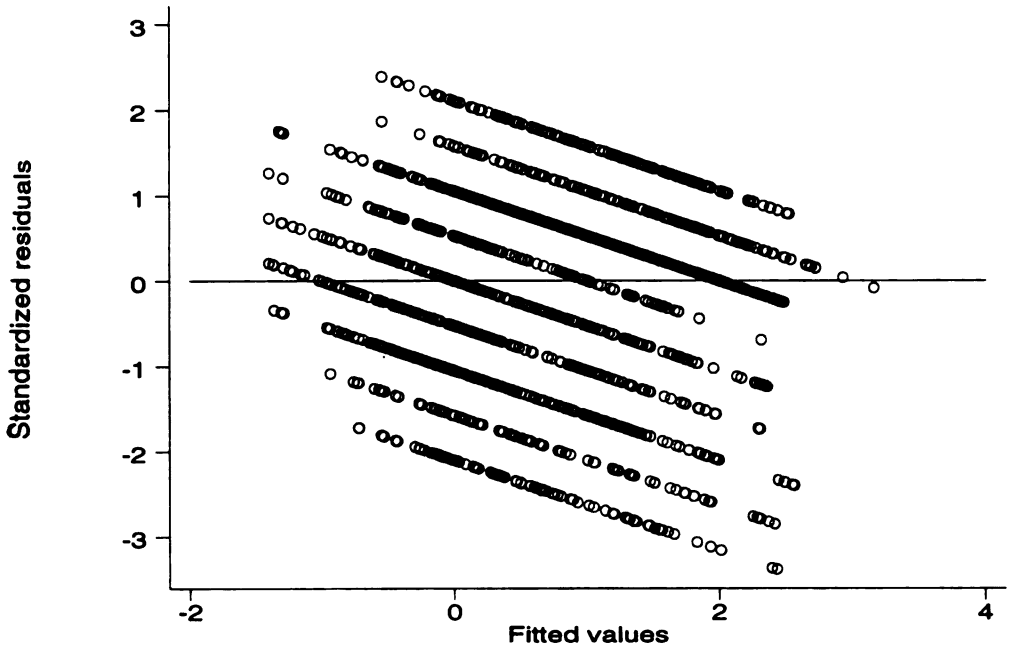

FIGURE 8.7 Standardized Residuals versus Fitted Values

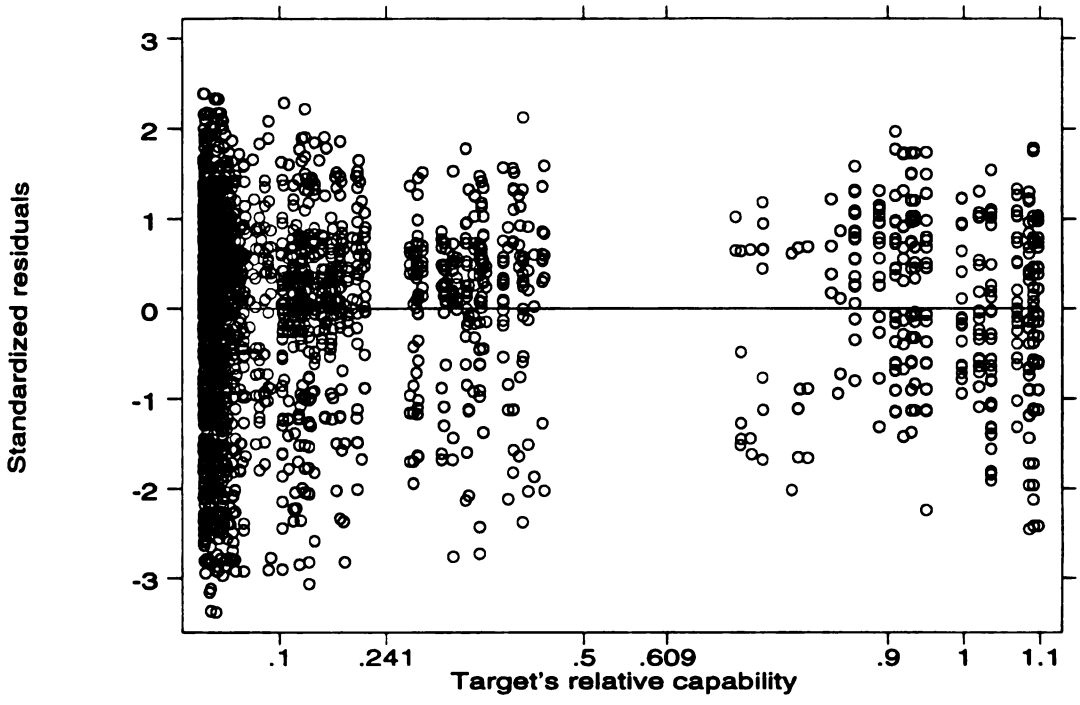

FIGURE 8.8 Standardized Residuals versus RCAPFRA2

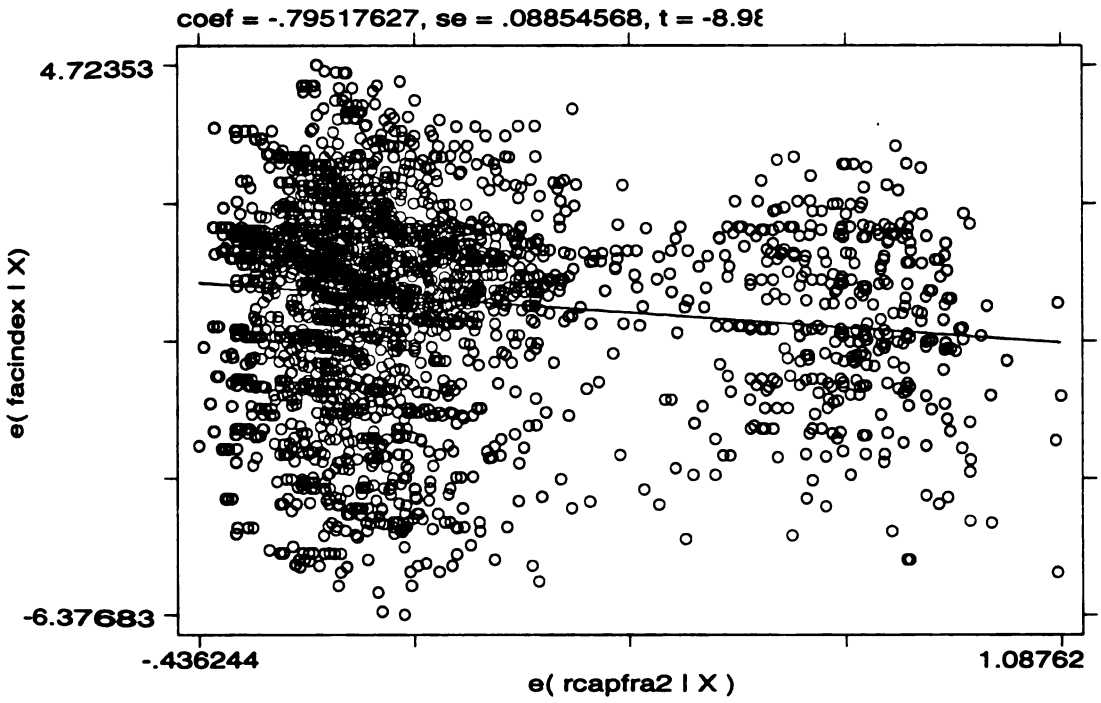

FIGURE 8.9 Added Variable Plot for RCAPFRA2

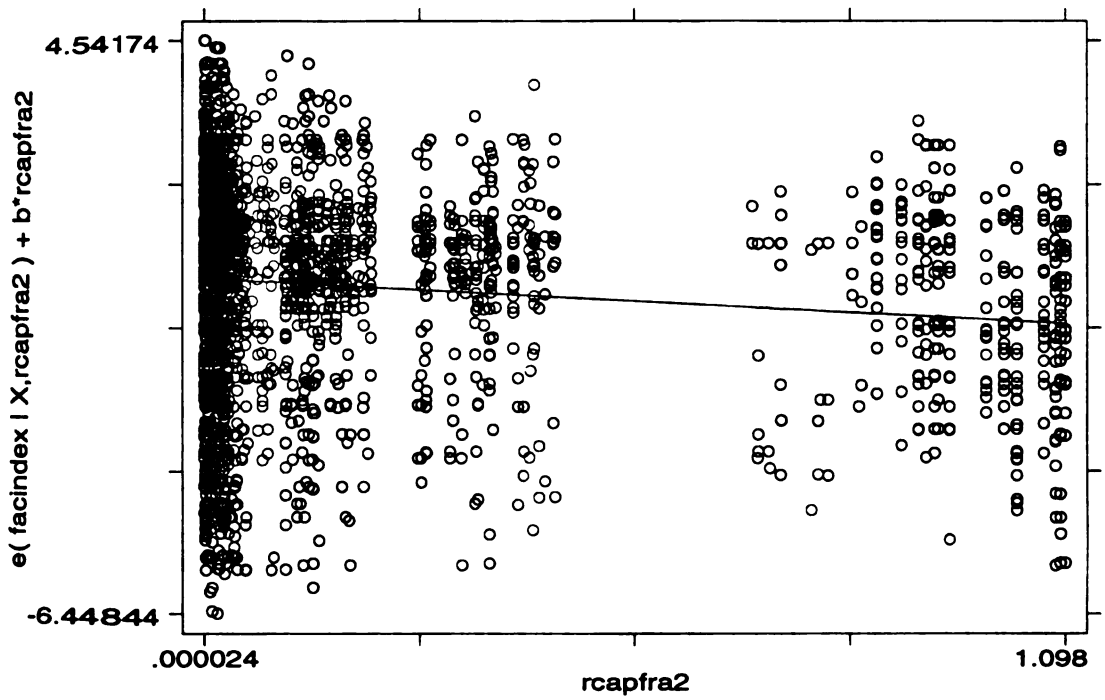

FIGURE 8.10 Component Plus Residuals Plot for RCAPFRA2

8.5.3 Residual Diagnostics

In this section, I will examine possible violations of the regression assumptions in the current OLS model. Because of limited space, I will not go on to provide remedies for the violations, if present. Lucid discussions of residual diagnostics can be found in Belsley et al. (1980), Berry (1993), Chatterjee and Price (1991), and Fox (1991), to name only a few.

Before I proceed with further diagnostics, the residuals plots against fitted values and against the independent variable x can provide some sense about the violations of regression assumptions. Figures 8.6 and 8.7 are graphs of the residuals and standardized residuals plotted against the fitted values. As can be seen, there is no systematic pattern regarding the variation in the residuals. As shown in Figure 8.7, some standardized residuals lie outside ± 2, and this signifies the existence of outliers (i.e., large residuals).

Several techniques of regression diagnostics involve the use of explanatory variables. For illustration, I have chosen RCAPFRA2 instead of other explanatory variables, because it is continuous, belonging to the ratio-level of measurement. In Figure 8.8, I present a graph of the standardized residuals plotted against the independent variable RCAPFRA2. There is no specific pattern with regard to the distribution of standardized residuals. A number of standardized residuals fall outside the range of ± 2, and they are candidates for outliers.

In addition, two graphical methods concerning independent variables are added-variable and component-plus-residual plots. The added-variable plot can be used for identifying outliers, and the component-plus-residual plot for examining the functional form of the independent variables in the regression equation (Stata Corporation 1995, 1:

381). As shown in the added-variable plot for RCAPFRA2 in Figure 8.9, those data points lying far away from the slope (the coefficient of RCAPFRA2) in the middle may be viewed as outliers. In Figure 8.10, the component-plus-residual plot suggests that the relationship between RCAPFRA2 and FACINDEX can be linearly represented by the slope in the middle, even though it does not appear to be strong.

Next I will discuss two concepts relevant to *outliers*, *influence* and *leverage*. Chatterjee and Price (1991, 83-4) provide the following definitions:

> A point is an *influential point* if its deletion, singly or in combination with others (two or three), causes substantial changes in the fitted model (estimated coefficients, fitted values). ...A point that is an outlier in the x space is called a *high leverage* point. *Leverage* of a point is a measure of its "outlyingness" (isolation) in the p variables $x_1, x_2, \ldots, x_p$ (i.e., in the space of x) and indicates how much that individual point influences its own predicted value.

They also supply several formal measures of leverage and influence. Outliers or high leverage points are not necessarily influential points. For a more vigorous regression analysis, outliers, leverage points, or influential points should be examined to assess their impacts on the fitting process.

Figure 8.11 shows the leverage-versus-residual-squared plot. The area above the horizontal line represents the existence of higher-than-average leverage, while the area to the right of the vertical line indicates the presence of higher-than-average residuals. Accordingly, if a data point is in the upper-right zone, it has high leverage and at the same time is a large residual.

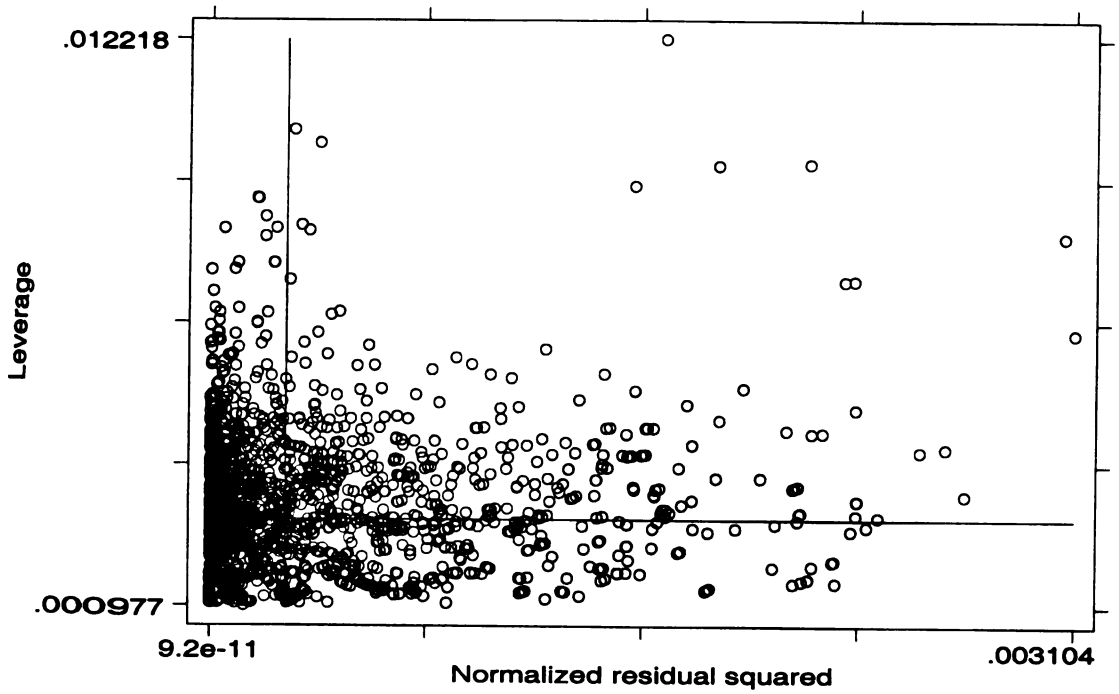

FIGURE 8.11 Leverage versus Residuals

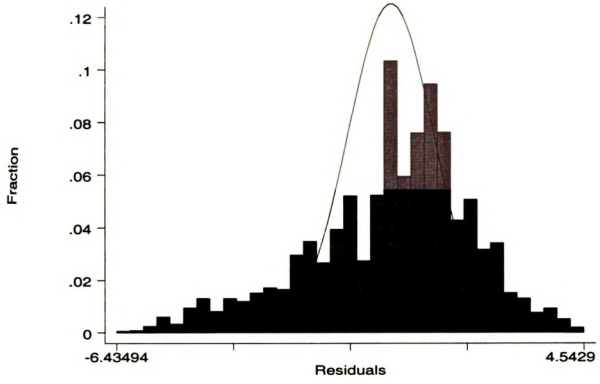

FIGURE 8.12 Normal Curve of Residuals

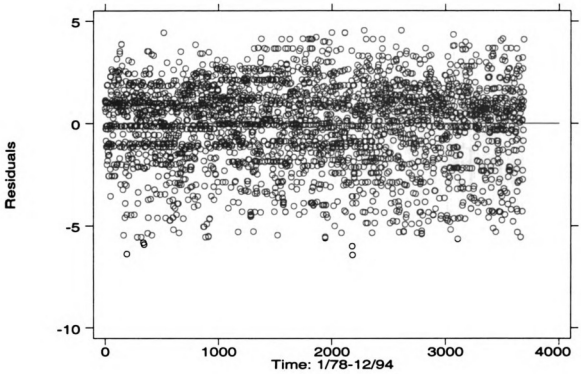

FIGURE 8.13 Residuals against Time

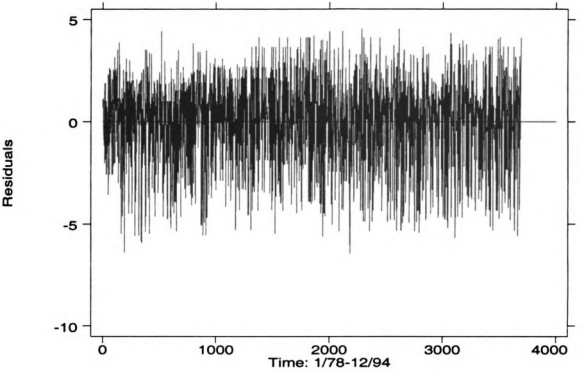

FIGURE 8.14 Residuals against Time by Connecting Adjacent Observations

TABLE 8.15 Formal Tests of the Violation of Regression Assumptions

(a) Durbin-Watson Test for Autocorrelated Errors

Null Hypothesis	*Decision*	*If (After substitution for $\alpha = .05$)*
(i) No positive autocor.	Reject	$0 < d < d_L$ $(0 < d < 1.675)$
(ii) No positive autocor.	No decision	$d_L \le d \le d_U$ $(1.675 \le d \le 1.863)$
(iii) No negative autocor.	Reject	$4 - d_L < d < 4$ $(2.325 < d < 4)$
(iv) No negative autocor.	No decision	$4 - d_U \le d \le 4 - d_L$ $(2.137 \le d \le 2.325)$
(v) No autocor., positive or negative	Do not reject	$d_U < d < 4 - d_U$ $(1.863 < d < 2.137)$

Source: Gujarati (1988, 378, 686-9)

Note: "Autocor." is shorthand for "autocorrelation." The critical d_L and d_U values are 1.675 and 1.863, given $n \ge 200$, k' (the number of explanatory variables except the constant term) = 9, and $\alpha = .05$. If $\alpha = .01$, the critical d_L and d_U values are 1.582 and 1.768. The computed Durbin-Watson d-statistic is 1.719, arriving at "no decision" in rejecting the null hypothesis of no positive autocorrelation, at the .05 or .01 significance level.

(b) Variance Inflation Factor

Variable	*VIF*	*1/VIF*
NEGOTIAB	1.32	.759
DIRECT	1.25	.800
MULTAR	1.21	.826
PCOLDWAR	1.13	.884
RCAPFRA2	1.08	.925
MULISSUE	1.07	.938
MULTOOLS	1.04	.958
ELECTION	1.01	.988
PARTY	1.01	.991
Mean VIF =	1.12	

(c) Cook-Weisberg Test for Heteroscedasticity Using Fitted Values of FACINDEX

H_0 : Constant variance

$\chi^2 = 3.51$

Prob > χ^2 = .0609

(d) Ramsey RESET Test Using Powers of the Fitted Values of FACINDEX

H_0 : model has no omitted variables

F(3, 3676) = 15.37

Prob > F = .0000

In Figure 8.11, a dozen or so extreme points are immediately apparent, and several dozen more are not located at the preferred zone. Clearly, the problem of outliers or influential points is present in the current regression model.

Furthermore, Figure 8.12 is concerned with the assumption of normally distributed errors. The distribution of the residuals has a bell shape similar to the normal distribution (with zero mean and one-unit standard deviation), although it is a bit flatter.[73] The violation of this assumption does not seem to be severe.

A quick way to look at the problem of autocorrelated errors is in the plot of the residuals against time. In my data set, there is no equal interval of time between observations; therefore, standard techniques for time-series analysis are not applicable. Plotting the residuals against the case number, however, will provide a sense of the problem of autocorrelation because my data set is in an ascending order of dates, from 1978 to 1994. In Figures 8.13 and 8.14, neither plot shows trends of positive or negative autocorrelation. Moreover, as displayed in Table 8.15.a, the commonly used Durbin-Watson test indicates "no decision" in rejecting the null hypothesis of positive autocorrelation.

Table 8.15.b contains the results of the variance inflation factor (VIF), which was devised to detect the problem of collinearity. As suggested by Chatterjee and Price (1991, 190), the problem of collinearity should be taken into account if any of the VIFs is greater than 10, or if the mean of the VIFs is considerably greater than 1. As shown in Table

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[73] The formula for calculating the optimal number of bins for a histogram is $\min(\sqrt{n}, 10 \times \log_{10} n)$, where n denotes the number of observations (Stata Corporation 1997, 2: 82). Based on the calculation using n = 3,689, I adopted 35 bins in Figure 8.12.

8.15.b, the regression model at hand has no severe collinearity problems that require further attention.

In regard to the assumption of constant variance in error terms, the Cook-Weisberg test can be used for detecting violations. The outcome in Table 8.15.c implies that the problem of heteroscedasticity is not serious in the regression model under consideration. Finally, the Ramsey RESET test shown in Table 8.15.d rejects the null hypothesis that there are no omitted variables in the equation. This suggests that additional relevant independent variables could be included to improve model specification.

8.6 INTEGRATION OF FINDINGS

8.6.1 Do Issue and Actor Matter?

In the section on theory construction, the issue and actor dimensions are regarded as key determinants of foreign policy behavior. I have chosen the negotiability of issues (NEGOTIAB) and the target's relative capability (RCAPFRA2) to represent these two dimensions, respectively. In various full models, both the parameters of NEGOTIAB and RCAPFRA2 are significant, with the exception of the coefficient of NEGOTIAB in the Poisson model. So far, I have established the individual importance of NEGOTIAB and RCAPFRA2 in explaining foreign policy. Another strand of inquiry is to seek to ascertain the joint importance of these two key variables. This can be simply done through the Wald test.

Table 8.16 contains the results of Wald-statistic, applied to five models, testing the null hypothesis that the parameters of NEGOTIAB and RCAPFRA2 are jointly zeroes. As indicated in Table 8.16, across all the five models, the null hypothesis is rejected at the .01 level. Therefore, I contend that issue and actor individually or jointly do matter in explaining American foreign policy behavior.

8.6.2 Relative Importance—Standardized Coefficients

A direct comparison between the impacts of various independent variables on the dependent variable often makes little sense because of "different measurement units and variances of the variables" (Lewis-Beck 1980, 64). A widely adopted solution to this problem is the procedure of standardization. Consequently, the results may be interpreted in the following fashion: *A one standard deviation change in x leads to β-unit change of standard deviation (i.e., beta coefficient resulting from standardization) in y, when holding other variables constant.* The theory and practice of standardization in classical regression analysis can be found in most textbooks. I will not recount it here. McKelvey and Zavoina (1975, 116) explain standardization in Probit analysis as follows:

> When all independent variables are orthogonal, $(\beta_i^*)^2$ represents the proportion of the variance explained by variable *i*. The standardized coefficient thus allows us to compare the strength of different variables in the same equation.

In practice, the problem of collinearity is a matter of degree. Despite the indication of some mild degree of collinearity in my data as displayed in Table 8.15.b, I will assess the relative importance of independent variables in the three Probit models.

TABLE 8.16 Wald Tests of Joint Hypothesis that NEGOTIAB and RCAPFRA2 Are Zero

Model (Dep. Var.)	Probit (PHYSICAL)	Probit (AFFECT)	Probit (STACRAFT)	Poisson (MULTOOLS)	Regression (FACINDEX)
Results of Wald Test	χ^2 (2) = 67.89 ; Prob. > χ^2 = .0000	χ^2 (2) = 107.34 ; Prob. > χ^2 = .0000	χ^2 (2) = 151.89 ; Prob. > χ^2 = .0000	χ^2 (2) = 32.73 ; Prob. > χ^2 = .0000	F (2, 3679) = 67.89 ; Prob. > F = .0000

TABLE 8.17 Standardized Coefficients of Various Full Models

Variable	Binary Probit (PHYSICAL)	Ordered Probit (AFFECT)	Ordered Probit (STACRAFT)	Regression (FACINDEX)
AFFECT	- .1225		.2089**	
STACRAFT		.2756**		
NEGOTIAB	.6479**	.2261**	.0550*	.1167**
RCAPFRA2	- .9452**	- .3021**	- .3033**	- .1408**
PCOLDWAR	.5253**	.1509**	.1184**	.0642**
ELECTION	- .1365	.0893**	.0062	.0235
PARTY	- .0654	.0725*	.0635**	.0287
MULTAR	- 1.2496**	.4045**	- .1016**	.1162**
DIRECT	- .4651**	.5430**	.0777**	.2414**
MULTOOLS	3.4652**	.0176	.8402**	.1187**
MULISSUE	- .6407**	.0731*	- .0544*	- .0063

Note: The Poisson regression model of MULTOOLS is not included because it makes no sense in interpreting the standardized coefficients. Blanks mean the absence of coefficients because the variables are not part of the equation; * denotes significance level < .05, and ** signifies significance level < .01.

Table 8.17 lists the results of standardized coefficients in various full models. Note that the standardization technique is not applicable in the Poisson analysis. Moreover, there is no need to discuss the results of standardization for those insignificant parameters. In the binary Probit model concerning the dependent variable PHYSICAL, the relative importance of the explanatory variables follows a descending order: MULTOOLS, MULTAR, RCAPFRA2, NEGOTIAB, MULISSUE, PCOLDWAR, and DIRECT. In the ordered Probit model involving the dependent variable AFFECT, the most important independent variable is DIRECT, followed by MULTAR, RCAPFRA2, STACRAFT, NEGOTIAB, PCOLDWAR, ELECTION, MULISSUE, and PARTY.

In the ordered Probit model with regard to STACRAFT, the relative strength of the independent variables, from the most to the least important, follows this order: MULTOOLS, RCAPFRA2, AFFECT, PCOLDWAR, MULTAR, DIRECT, PARTY, NEGOTIAB, and MULISSUE. Moreover, in the classical regression analysis concerning FACINDEX, the most important explanatory variable is DIRECT, followed by RCAPFRA2, MULTOOLS, NEGOTIAB, MULTAR, and PCOLDWAR.

In regard to the key explanatory variables—issue and actor, Table 8.17 shows that RCAPFRA2 is more important than NEGOTIAB across the board. The largest gap in their comparative strength can be found in the ordered Probit model concerning STACRAFT, while the smallest can be found in the classical regression model involving FACINDEX. In the ordered Probit model, RCAPFRA2 explains 9.20% of the variance in the dependent variable STACRAFT, while NEGOTIAB accounts for only .30%, if the orthogonal assumption among independent variables is disregarded. By contrast, in the regression model, a standard deviation increase in RCAPFRA2 would cause a drop of

.1408-unit of standard deviation in FACINDEX, and the same increase in NEGOTIAB would lead to a rise of .1167-unit of standard deviation in FACINDEX.

8.6.3 Summary of Findings

Achen's point of view on social science practice is that "[i]n everyday life, three possible decisions about causal effects are available: They may be strong, weak, or simply undecidable" (1982, 46). The term "undecidable" sounds surprisingly ambiguous (or at least post-modernistic) coming from a strong advocate of empirical research such as Achen. There is no need to be overcautious, as long as one has a healthy skepticism. Any empirical research presents not all, but one piece of evidence. Its conclusions are not final but temporary, and continuous efforts to examine, establish and refine the causal relationships of interest are required.

To summarize previous findings, Table 8.18 adopts the more conventional classification of "strong," "some," and "none," suggested by Martin (1992, 91), to denote the statistical relationships between variables. The term "strong" applies when the parameter of an independent variable is significant at the .01 level, and the term "none" applies when the parameter fails to meet the .05 level of significance. Between these two extremes, the term "some" is employed. Additionally, I use "positive" and "negative" to denote the direction of relationship between the dependent and independent variables.

TABLE 8.18 Effects of Independent Variables in Various Full Models

Row = Indep. Var. / (Values) ; Column = Dep. Var. / (Values) / Model Applied

	PHYSICAL / (0 , 1) / Probit	AFFECT / (0, 1, 2) / Probit	STACRAFT / (0, 1, 2, 3) / Probit	MULTOOLS / (1, 2, 3, 4) / Poisson	FACINDEX / (-4 to 4) /Regression
AFFECT / (-1 , 0 , 1)	none /negative		strong /positive	strong /positive	
STACRAFT / (1, 2, 3, 4)		strong /positive			
NEGOTIAB / (1 , 2 , 3)	strong /positive	strong /positive	some /positive	none /negative	strong /positive
RCAPFRA2 / (.0000 to 1.098)	strong /negative	strong /negative	strong /negative	strong /negative	strong /negative
PCOLDWAR / (0 , 1)	strong /positive	strong /positive	strong /positive	none /positive	strong /positive
ELECTION / (0 , 1)	none /negative	strong /positive	none /positive	none /positive	none /positive
PARTY / (1 , 2)	none /negative	some /positive	strong /positive	some /negative	none /positive
MULTAR / (1 to 8)	strong /negative	strong /positive	strong /negative	strong /negative	strong /positive
DIRECT / (0 , 1)	strong /negative	strong /positive	strong /positive	strong /positive	strong /positive
MULTOOLS / (1, 2, 3, 4)	strong /positive	none /positive	strong /positive		strong /positive
MULISSUE / (1 , 2)	strong /negative	some /positive	some /negative	strong /positive	none /negative

Note: Within the cells are *statistical significance / direction* in verbal form with regard to the relationship between the dependent and independent variables. "Strong" denotes a significant relationship at the .01 level, "some" indicates a significant relationship at the .05 level, and "none" means no significant relationship at the .05 level. All are referred to the full models. For details, see Tables 8.2, 8.5, 8.8, 8.12, and 8.14.

Among the five full models discussed earlier, I expected a consistency between the binary Probit model of PHYSICAL and the ordered Probit model of STACRAFT, since PHYSICAL is derived from STACRAFT. Contradictions can be found in Table 8.18, however. The most obvious case involves DIRECT; its relationships with the two dependent variables are strong but have opposite signs. For a better understanding of this inconsistency, a comparison between Figures 8.1 and 8.3 can be made. Particularly, it can be seen in Figure 8.3 that the probability change of the use of diplomacy coincides with the probability change of the use of economic or military instruments in American foreign policy. Therefore, combining propaganda and diplomacy into the single category of verbal measures appears to be problematic and leads to measurement errors in the dependent variable PHYSICAL.

In hindsight, some individual policy items under the category of diplomacy, such as "admit or expel persons," "cultural/educational/scientific exchange," and many others, do qualify as physical actions. In short, to make the distinction between verbal and physical action useful in foreign policy analysis, a better specified measurement is required.

Moreover, I expected similar, if not identical, results from the ordered Probit model of STACRAFT and the Poisson model of MULTOOLS, because these dependent variables reflect the resources committed to foreign policy objectives in a similar fashion. Salient events or crisis situations often demand strong measures with high costs, or involve the use of multiple types of statecraft. Table 8.18 shows that PARTY and MULISSUE have significant coefficients in both models but have opposite signs. This leads to some interesting, but not necessarily invalid, interpretations: Democratic

administrations tended to select more costly foreign policies but were less inclined to adopt multiple types of policy instruments, as compared to Republican administrations. Moreover, when multiple issues were involved in an event, the United States was less likely to take high-cost action, but more likely to have a combined use of various types of statecraft.

As can be seen in the summary in Table 8.18, the most important explanatory variables are NEGOTIAB, RCAPFRA2, PCOLDWAR, MULTAR, and DIRECT. The less important explanatory variables are MULTOOLS and MULISSUE, while the least important are ELECTION and PARTY.

My data set allows for detailed analysis across various administrations in a seventeen-year span of American foreign policy. Tables 8.19-23 display the results of model estimation for three years of the Carter administration, the Reagan I, Reagan II, Bush administrations, and two years of the first Clinton administration. It is apparent that the issue and actor dimensions were essential to some administrations in U.S. foreign policy decision making, but insignificant to others. I will not pursue a comparative study of the various administrations' foreign policy here.

TABLE 8.19 Probit Analysis of PHYSICAL by Administration

Dependent Variable: PHYSICAL (0 = Verbal, 1 = Physical)

Variable	CARTER	REAGAN I.	REAGAN II.	BUSH	CLINTON
AFFECT	- .2168**	.1262*	- .2261**	.0362	.1115
	(.0803)	*(.0600)*	*(.0766)*	*(.0862)*	*(.1239)*
NEGOTIAB	.4477**	.4458**	.3497**	.0613	- .3450
	(.1334)	*(.1173)*	*(.1200)*	*(.1623)*	*(.2159)*
RCAPFRA2	- .2966	- .8463**	- .8668**	- .8934**	.0747
	(.1717)	*(.1709)*	*(.2170)*	*(.2916)*	*(.6446)*
MULTAR	- .0701	- .3147**	- .0620	- .3165**	- .0939*
	(.0639)	*(.0513)*	*(.0426)*	*(.0512)*	*(.0450)*
DIRECT	- .0944	- .0627	- .2618	- .2901	- .7009**
	(.1542)	*(.1279)*	*(.1504)*	*(.1622)*	*(.2224)*
MULTOOLS	2.0742**	1.4748**	1.5415**	1.7249**	1.6324**
	(.1287)	*(.1090)*	*(.1248)*	*(.1400)*	*(.2042)*
MULISSUE	- .6712**	- .0185	- .6087**	- .5387**	- .1501
	(.2062)	*(.1493)*	*(.1844)*	*(.1663)*	*(.2094)*
CONSTANT	- 3.7237**	- 3.0444**	- 2.4373**	- 1.6920**	- 1.2249*
	(.3853)	*(.3153)*	*(.3341)*	*(.3774)*	*(.5186)*
Observations	974	1,096	678	663	278
$\chi^2(7)$	428.81	365.47	247.55	320.51	118.24
Prob. > χ^2	.0000	.0000	.0000	.0000	.0000
Pseudo R^2	.4706	.3368	.3385	.4474	.3488
LL	- 241.20	- 359.83	- 241.93	- 197.90	- 110.36
Prediction	91.38%	86.86%	84.22%	87.33%	81.29%

Note: Within parentheses are standard errors; * denotes significance level < .05, and ** signifies significance level < .01; LL means "Log-likelihood"; *Prediction* is the percentage of the dependent variable correctly predicted.

TABLE 8.20 Ordered Probit Analysis of AFFECT by Administration

Dependent Variable: AFFECT (0 = Negative, 1 = Neutral, 2 = Positive)

Variable	CARTER	REAGAN I.	REAGAN II.	BUSH	CLINTON
STACRAFT	.1568*	.2334**	.1353*	.2056**	.1182
	(.0634)	*(.0510)*	*(.0663)*	*(.0712)*	*(.0994)*
NEGOTIAB	.2339**	.1753*	.5548**	- .0071	- .0197
	(.0840)	*(.0797)*	*(.0938)*	*(.1162)*	*(.1829)*
RCAPFRA2	- .7206**	- .7877**	- .1285	.3855*	.5477
	(.0998)	*(.1038)*	*(.1413)*	*(.1917)*	*(.5454)*
MULTAR	.1802**	.0220	.1505**	.2436**	.1478**
	(.0362)	*(.0261)*	*(.0345)*	*(.0293)*	*(.0414)*
DIRECT	.9657**	.5920**	.4913**	.7542**	.4243*
	(.0906)	*(.0904)*	*(.1129)*	*(.1182)*	*(.1918)*
MULTOOLS	- .0907	.1192	.0600	.0488	.2058
	(.1008)	*(.1041)*	*(.1076)*	*(.1122)*	*(.1813)*
MULISSUE	- .1073	.2482*	.1096	.3227**	- .0577
	(.1171)	*(.1112)*	*(.1294)*	*(.1203)*	*(.1725)*
_CUT1	.5146	.9695	1.7099	1.2193	.1767
	(.2329)	*(.2136)*	*(.2589)*	*(.2923)*	*(.4653)*
_CUT2	1.0954	1.3642	2.0530	1.5139	.5314
	(.2342)	*(.2148)*	*(.2612)*	*(.2936)*	*(.4664)*
Observations	974	1,096	678	663	278
$\chi^2(7)$	273.98	223.82	158.16	148.04	32.46
Prob. > χ^2	.0000	.0000	.0000	.0000	.0000
Pseudo R^2	.1387	.1034	.1227	.1381	.0771
LL	- 850.98	- 970.40	- 565.61	- 461.78	- 194.26
Prediction1	62.73%	60.31%	65.63%	71.64%	73.74%
Prediction2	55.95%	53.38%	60.77%	67.27%	70.14%

Note: Within parentheses are standard errors; * denotes significance level < .05, and ** signifies significance level < .01; LL means "Log-likelihood"; Prediction1 is the prediction based on the maximum probability, and Prediction2 is the prediction based on the range containing $x'b$.

TABLE 8.21 Ordered Probit Analysis of STACRAFT by Administration

Dep. Var.: STACRAFT (0 = Propaganda, 1 = Diplomatic, 2 = Economic, 3 = Military)

Variable	CARTER	REAGAN I.	REAGAN II.	BUSH	CLINTON
AFFECT	.1638**	.2115**	.1536**	.2122**	.1509
	(.0501)	*(.0415)*	*(.0530)*	*(.0587)*	*(.0930)*
NEGOTIAB	- .0533	.1847*	- .0147	.1449	- .0019
	(.0820)	*(.0742)*	*(.0833)*	*(.0989)*	*(.1508)*
RCAPFRA2	- .5716**	- .9129**	- .5976**	- .7446**	- .2456
	(.1007)	*(.1033)*	*(.1320)*	*(.1737)*	*(.4492)*
MULTAR	.0460	- .1080**	- .0308	- .0891**	- .0099
	(.0321)	*(.0237)*	*(.0282)*	*(.0246)*	*(.0316)*
DIRECT	.3677**	.3520**	.0643	- .2704**	- .2838
	(.0925)	*(.0861)*	*(.1032)*	*(.1004)*	*(.1599)*
MULTOOLS	1.7902**	1.3993**	1.2169**	1.1473**	.9305**
	(.0977)	*(.0867)*	*(.0896)*	*(.0899)*	*(.1329)*
MULISSUE	- .3378**	.1135	- .2065	- .0714	.0316
	(.1126)	*(.1024)*	*(.1152)*	*(.1009)*	*(.1443)*
_CUT1	.9009	1.5261	.2796	.0975	- .2269
	(.2207)	*(.1988)*	*(.2194)*	*(.2301)*	*(.3760)*
_CUT2	3.2033	3.1534	2.1123	2.2637	1.7221
	(.2437)	*(.2164)*	*(.2328)*	*(.2470)*	*(.3900)*
_CUT3	3.8015	3.5913	2.7491	2.9592	2.3185
	(.2543)	*(.2206)*	*(.2411)*	*(.2522)*	*(.3930)*
Observations	974	1,096	678	663	278
$\chi^2(7)$	540.79	553.45	254.77	234.28	61.79
Prob. > χ^2	.0000	.0000	.0000	.0000	.0000
Pseudo R^2	.2546	.2139	.1595	.1609	.0974
LL	- 791.78	- 1016.74	- 671.23	- 610.73	- 286.34
Prediction1	65.50%	62.50%	56.78%	62.29%	58.63%
Prediction2	62.83%	57.21%	53.69%	63.65%	59.35%

Note: Within parentheses are standard errors; * denotes significance level < .05, and ** signifies significance level < .01; LL means "Log-likelihood"; Prediction1 is the prediction based on the maximum probability, and Prediction2 is the prediction based on the range containing $x'b$.

TABLE 8.22 Truncated-at-Zero Poisson Analysis of MULTOOLS by Administration

Dependent Variable: MULTOOLS (Types of statecraft used, from 1 to 4)

Variable	CARTER	REAGAN I.	REAGAN II.	BUSH	CLINTON
AFFECT	.0631	.2775**	.1594*	.1624	.2074
	(.0780)	*(.0771)*	*(.0793)*	*(.0864)*	*(.1516)*
NEGOTIAB	.1569	.0041	.0682	- .2047	- .4729
	(.1265)	*(.1253)*	*(.1260)*	*(.1451)*	*(.2444)*
RCAPFRA2	- .3753*	- .7746**	- .5399**	- .4593	- .5021
	(.1691)	*(.1986)*	*(.2048)*	*(.2544)*	*(.7417)*
MULTAR	- .2507**	- .0964*	- .0927*	- .1538**	- .0562
	(.0733)	*(.0408)*	*(.0421)*	*(.0375)*	*(.0525)*
DIRECT	.1895	.3300*	.3248*	.3672**	.4148
	(.1449)	*(.1450)*	*(.1531)*	*(.1451)*	*(.2471)*
MULISSUE	.2247	.1135	- .2065	- .0714	.0316
	(.1580)	*(.1500)*	*(.1479)*	*(.1308)*	*(.2131)*
CONSTANT	- .9533**	- 1.3614**	- .8494**	- .3748	- .2396
	(.3108)	*(.2916)*	*(.2880)*	*(.3043)*	*(.5123)*
Observations	974	1,096	678	663	278
$\chi^2(6)$	28.50	89.24	20.67	45.00	13.72
Prob. > χ^2	.0001	.0000	.0021	.0000	.0329
Pseudo R^2	.0227	.0668	.0207	.0454	.0359
LL	- 614.52	- 623.41	- 487.93	- 473.43	- 184.49

Note: Within parentheses are standard errors; * denotes significance level < .05, and ** signifies significance level < .01; LL means "Log-likelihood."

TABLE 8.23 Regression Analysis of FACINDEX by Administration

Dependent Variable: FACINDEX (A cooperation/conflict scale, from -4 to 4)

Variable	CARTER	REAGAN I.	REAGAN II.	BUSH	CLINTON
NEGOTIAB	.4286**	.1967	.9197**	.1799	- .0039
	(.1218)	*(.1190)*	*(.1418)*	*(.1617)*	*(.2641)*
RCAPFRA2	- 1.0386**	- 1.2096**	- .1323	.3940	.7062
	(.1421)	*(.1479)*	*(.2251)*	*(.2757)*	*(.7832)*
MULTAR	.1958**	- .0128	.1510**	.2425**	.1482**
	(.0457)	*(.0376)*	*(.0487)*	*(.0373)*	*(.0542)*
DIRECT	1.3436**	.9777**	.7451**	.9752**	.5537*
	(.1268)	*(.1336)*	*(.1760)*	*(.1568)*	*(.2751)*
MULTOOLS	.1827	.8772**	.3228*	.4702**	.6181**
	(.1074)	*(.1229)*	*(.1353)*	*(.1323)*	*(.2175)*
MULISSUE	- .3285*	.2098	.0118	.0601	- .0520
	(.1639)	*(.1639)*	*(.1982)*	*(.1629)*	*(.2510)*
CONSTANT	- .8826**	- 1.3726	- 2.5246**	- 1.3733**	- .2832
	(.3170)	*(.3119)*	*(.3678)*	*(.3746)*	*(.6565)*
Observations	974	1,096	678	663	278
F-Statistics	45.92	38.66	24.66	20.31	4.31
Prob > F	.0000	.0000	.0000	.0000	.0004
R^2	.2217	.1756	.1807	.1566	.0871
Adjusted R^2	.2169	.1711	.1734	.1489	.0669
Root MSE	1.7738	1.8712	1.9808	1.8905	1.9718

Note: Within parentheses are standard errors; * denotes significance level < .05, and ** signifies significance level < .01.

CONCLUSION

This study is both exploratory and explanatory. The exploratory perspective emerges from the fact that there is not much in the existent literature that encompasses both the actor and issue dimensions in the analysis of foreign policy behavior. One may find related studies here and there, but not a coherent body of theoretical propositions that are systematically construed or empirically tested. This lack of propositions concerning the impacts of issue and actor on a nation's foreign policy behavior made my research design difficult in the early stages. To answer the central question of interest, I had to build the basic model, contemplate contextual variables, and collect raw data. As a result, I have obtained much more information than I originally intended.

To sum up the findings, a list of the resultant propositions that might be helpful to similar studies in the future is in order. The listing is grouped by the independent variables. Each group is further divided into three subgroups of dependent variables: AFFECT, STACRAFT, and FACINDEX. I do not include the propositions related to PHYSICAL and MULTOOLS—two dependent variables derived from STACRAFT. On one hand, the dummy dependent variable PHYSICAL is likely to be misspecified, as discussed earlier. On the other hand, STACRAFT and MULTOOLS are similar concepts in measuring the commitment of foreign policy resources; therefore, I avoid the redundancy of listing the propositions related to MULTOOLS. The findings of PHYSICAL and MULTOOLS can be found in Tables 8.2 and 8.12, and they are also summarized in Table 8.18.

The following propositions can be derived from the findings:

PROPOSITION 8.1: Negotiability of Issues (NEGOTIAB)

(i) The more negotiable the primary issue involved in an event, the more likely the United States is to show positive affect toward the target nation.

(ii) The more negotiable the primary issue, the more likely the United States is to choose costly policy instruments.

(iii) The more negotiable the primary issue, the more likely the United States is to be cooperative.

PROPOSITION 8.2: Relative Capability of the Target (RCAPFRA2)

(i) The more powerful the target nation involved in an event, the less likely the United States is to show positive affect toward the target nation.

(ii) The more powerful the target nation, the less likely the United States is to adopt costly policy instruments.

(iii) The more powerful the target nation, the less likely the U.S. is to be cooperative.

PROPOSITION 8.3: End of the Cold War Era (PCOLDWAR)

(i) In the post-Cold War era, as compared to earlier periods, the United States tends to show more positive affect toward the target nation.

(ii) In the post-Cold War era, the United States tends to adopt more costly policy instruments.

(iii) In the post-Cold War era, the United States tends to be more cooperative.

PROPOSITION 8.4: Presidential Election Years (ELECTION)

(i) In (presidential) election years, the United States tends to show more positive affect toward the target nation.

(ii) There is no relationship between election years and the American selection of policy instruments in terms of costs.

(iii) There is no relationship between election years and cooperation/conflict in U.S. foreign policy.

PROPOSITION 8.5: Presidential Party (PARTY)

(i) With a Democratic president in office (as compared to a Republican president), the United States tends to show more positive affect toward the target nation.

(ii) With a Democratic president in office, the United States tends to adopt more costly policy instruments.

(iii) There is no relationship between the presidential party and cooperation/conflict in U.S. foreign policy.

PROPOSITION 8.6 Number of Target Nations (MULTAR)

(i) The more the target nations involved in an event, the more likely the United States is to show positive affect toward the target nations.

(ii) The more the target nations, the less likely the United States is to adopt costly policy instruments.

(iii) The more the target nations, the more likely the United States is to be cooperative.

PROPOSITION 8.7: Proximity of the Problem (DIRECT)

(i) When the problem has a direct relation to the United States, the United States tends to show more positive affect toward the target nation.

(ii) When the problem has a direct relation to the United States, the United States tends to adopt more costly policy instruments.

(iii) When the problem has a direct relation to the United States, the United States tends to be more cooperative.

PROPOSITION 8.8: Number of Types of Statecraft Used (MULTOOLS)

(i) There is no relationship between the combined use of multiple types of statecraft and the American affect toward the target nation.

(ii) The more the types of statecraft used in an event, the more likely the United States is to adopt costly policy instruments.

(iii) The more the types of statecraft used in an event, the more likely the United States is to be cooperative.

PROPOSITION 8.9: Presence of Multiple Issues (MULISSUE)

(i) When more than one issue is involved in an event, the United States tends to show more positive affect.

(ii) When more than one issue is involved in an event, the United States tends to adopt less costly policy instruments.

(iii) There is no relationship between the presence of multiple issues and cooperation/conflict in U.S. foreign policy.

PROPOSITION 8.10: Causal Flow between AFFECT and STACRAFT

(i) The more costly instruments the United States chooses to use, the more likely the United States is to show positive affect.

(ii) The more positive affect the United States decides to express, the more likely the United States is to adopt costly policy instruments.

The propositions suggested above result from my multivariate analysis using the limited dependent variable model and the classical regression model. To be more precise, I may reformulate some of the propositions in the probability terms whenever the discrete dependent variables are concerned. All these propositions describe the relationships between two variables, other things being equal. My treatment here is merely a starting point in assessing relationships between variables. If the interaction effects are taken into account, or more advanced methods such as the structural equation model are applied, I may be able to look further into the dynamics of a more complex framework and examine the interplay among several key variables.

Causality is one of the pillars of science. As indicated by Kaplan (1965, 145-7), however, there are serious difficulties in establishing causal connection. Moreover, researchers in social science do not have the luxury of controlling the subject by experimentation as the practitioners of natural science often do. Consequently, in the social sciences, the idea of causality merely serves as a working assumption to guide the research process and facilitate vigorous discussions. Instead social sciences have emphasized the notion of explanation. Dahl (1965) makes a distinction between four kinds of explanation: *purposive*, *teleological*, *functional*, and *strictly causal*. My research interest lies primarily in causal explanations, despite the inherent difficulties in achieving this goal.

From the explanatory perspective, there are several findings in this study. First, to understand the subject—foreign policy behavior—it is essential to take into account both orientation and magnitude, i.e., the affect toward the target nation and the costs (or commitment of resources) involved. My earlier focus on the costs in the policy spectrum

(STACRAFT) provides some insights into the decisionmaking in U.S. foreign policy. Without accounting for the overall policy direction (AFFECT) in an event, however, one often confronts ambiguities in interpretation. In short, STACRAFT or AFFECT alone tells only half the story of any foreign policy behavior. Fortunately, during the research process, I found that the multiplication of STACRAFT by AFFECT (= FACINDEX) proved to be consistent with the well-known cooperation/conflict index of COPDAB, and the resultant FACINDEX scale can serve as a single index to describe foreign policy behavior.

Second, in answering the central question, I found that the actor and issue dimensions do matter in the selection of American foreign policy, individually and jointly. In the standardization procedure to assess the relative importance of the independent variables, the relative capability of the target (RCAPFRA2) scores higher than the negotiability of issue (NEGOTIAB) in the various full models. But the discrepancy of the scores is not great enough to arrive at a firm conclusion about whether the actor dimension or the issue dimension is more important in determining the selection of foreign policy.

In general, a substantive issue is more likely to attract an American foreign policy with positive affect, high costs, or cooperation, than is a symbolic or transcendent issue. In other words, the United States is prone to an action or a reaction with negative affect, low costs, or conflict in dealing with less substantive issues, which involve philosophical/cultural differences or human welfare. Since symbolic or transcendent issues are often replete with fundamental differences in human values and thus are less

susceptible to a quick solution, it is quite pragmatic for the United States to limit its responses to vocal (or low-cost) conflict.

When comparing U.S. behavior toward nations of different sizes, one can also see a pragmatic inclination in U.S. foreign policy. In coping with more powerful nations, the United States tends to select a policy with negative affect and small costs, or with low levels of conflict. On one hand, the United States is sensitive to the competition for national strength among major powers, and on the other hand, it is aware that any uncompromising and intense conflict between major powers may, at its worst, be so contagious as to undermine the stability of the international system. Confining the level of antagonism with other major powers to low-conflict policy instruments such as propaganda or diplomacy seems to best serve the American national interest. It is my contention that this pragmatic perspective of American foreign policy—hawkish in showing affect but dovish in choosing policy options—has prevailed in coping with the daily ebb and flow of the international events, has preserved U.S. strength as a superpower and world leader, and has enabled the United States to withstand the bumpy road that has nevertheless led to a long peace in the international system since World War II.

CHAPTER NINE

RELIABILITY, VALIDITY, AND FUTURE STUDIES

There is no flawless method for enhancing our understanding of the real world. Deductive inference is demonstrative but not ampliative, while inductive inference is ampliative but not demonstrative (Salmon 1966, 8-9).[74] In other words, either approach has its limitations. In empirical investigations of this study, I had to guard against the threats to validity in each stage of the research process. Any research project involves a great number of decisions. At every turn, ambiguities or uncertainties may arise. Even if one constantly takes precautions, the limitation of research resources is often a problem, and every possibility cannot be exploited. That is to say, there is always room for improvement. In the first half of the empirical research process—identifying the central question, building theories and models, operationalization, constructing hypotheses, sampling, collecting data, and analysis—one looks forward, while in the second half, involving discussions of validity, one looks back. In this chapter I will consider the reliability of the coding scheme developed for event analysis in this study, the validity issues in general, and some proposals for future studies. To establish the FACINDEX scale as a valid representation of the cooperation/conflict continuum, I will also include a comparison between the COPDAB and FACINDEX measures.

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[74] Salmon (1966, 8) states that "A demonstrative inference is one whose premises necessitate its conclusion; the conclusion cannot be false if the premises are true," and that "an ampliative inference...has a conclusion with content not present either explicitly or implicitly in the premises." An ideal method for inference would be not only demonstrative (or necessarily truth-preserving) but also ampliative.

TABLE 9.1 Response from the Editorial Office of *Foreign Affairs*

QUESTIONAIRE

I am most interested in U.S.-related events, and where they are obtained and how they are selected.

1. Several editors participated in the compilation of *Foreign Affairs Chronology*. Does your editorial office establish a universal guideline, or some selecting criteria for collecting the events?

YES _X_ NO ___ (Please mark one)

If YES, please answer 2a and 2b, and if NO, answer 3.

2a. What are the sources of events? Please specify.

The New York Times, The Wall Street Journal, Facts on File, and Current History (the last section).

2b. What are the selecting criteria in the process of compilation? In other words, what are your rules for including significant events and excluding insignificant events? If there is a written guideline, please send me a copy.

There are no guidelines—it's rather arbitrary and ad hoc. Sorry we don't have anything more specific.

3. Could you provide correspondence information on individual editors, so that I can make a request about their compiling process?

Note: The responses are italicized. No answers were provided for Question 3.

9.1 RELIABILITY

Errors, random or nonrandom, are always present in any measurement process. The concept of reliability is concerned with random or chance error. In event studies, the sources of random error could be ambiguous coding rules or instructions, cognitive differences between coders, and so forth. Carmines and Zeller (1979, 11) define reliability as "the extent to which an experiment, test, or any measuring procedure yields the same results on repeated trials." Taylor and Jodice elaborate on the reliability issues surrounding event studies as follows:

> Three aspects of reliability must be considered. The first, and most important, is source or reporting bias. What effect does the choice of sources have on the resulting dataset? Ideally, the distribution of events should be independent of the sources used. The second is inter-coder agreement. The dataset should be independent of the judgments of individual coders. The third involves cross-time changes in the dataset. Coders should not change their coding styles over time and sources should be employed that do not change coverage of countries and types of events during the period (1983, 176).

The third aspect of consistency over time is also known as stability of measurement. Since it is less germane to this study, I will not discuss it here. The ensuing sections focus on the problems of source bias and intercoder agreement.

9.1.1 Source Bias

Since I did not collect the numerous news clippings firsthand, I sent a questionnaire to the Editorial Office of *Foreign Affairs* to inquire about the process of selecting and compiling event records. As shown in the reply to the questionnaire in Table 9.1, the news sources of *Foreign Affairs Chronology* are the *New York Times*, the

Wall Street Journal, *Facts on File*, and *Current History*. Unfortunately, as further indicated, no efforts are made to set guidelines for distinguishing between significant and insignificant events. In face of this potential threat to unbiased data sources, I proposed two strategies of comparison that would reveal how well my data set fares in representing U.S. foreign policy.

One strategy was to compare my data with that in other authentic news sources that are not adopted in the construction of *Foreign Affairs Chronology*. In doing so, I used *Keesing's Contemporary Archives* as an additional source. Due to limited research resources, I arbitrarily chose the period from January to March 1989. I adopted the same criterion, U.S.-related events, in the selection process. There are fifteen events in *Foreign Affairs Chronology* and thirty-four events in *Keesing's Contemporary Archives*, meeting this criterion during this period. Eleven events appear in both sources. In Table 9.2, I list a few examples of event records to show the differences in their news sources. I reached the conclusion that source biases do exist. Source bias not only affects the event counts, but it also leads to different distributions of events in terms of either the issues in dispute or the targets involved. My quick probe, however, did not provide information about how seriously different news sources might affect statistical conclusions.

Another strategy was to compare the event distributions of key variables in my data set with those in other event data sets. I found some similarities between the CREON project and this study in conceptualizing foreign policy behavior. All the categories regarding foreign policy instruments in the CREON project can be incorporated into the four-fold classification of statecraft.

TABLE 9.2 Examples of Event Entries in Two Sources

(a) Appearances in both sources

890101 European Community imposes ban on imports of beef from hormone-treated cattle, including $130 million per year in US exports. US retaliates by establishing 100% import tariff on EC food products worth $100 million annually. US and EC 2/19 agree to 75-day cooling-off period during which joint task force will seek solution to trade war (Council on Foreign Relations 1992, 369).

890101 The United States on Jan. 1 imposed 100 per cent tariffs o imports from the European Communities (EC) worth some US$100,000,000 a year, in retaliation for a ban, also imposed on Jan. 1, on imports into the EC of beef containing growth hormones. At a meeting on Jan. 23, EC Foreign Ministers in turn agreed on counter-retaliatory measures (to impose 100 per cent tariffs on just under $100,000,000-worth of US imports of walnuts and dried fruit), but no date was fixed for their imposition (*Keesing's Contemporary Archives*, 35(1): 36405).

(b) Appearances in *Foreign Affairs Chronology* only

890210 President Bush meets with Canadian Prime Minister Brian Mulroney in Ottawa. Bush Announces he will propose US legislation designed to reduce acid rain pollution (Council on Foreign Relations 1992, 371).

890328 US State Department announces it will accept Iraqi offer of 27.3 million in compensation to families of 37 Americans killed in 5/87 Iraqi attack on frigate USS Stark (Council on Foreign Relations 1992, 390).

(c) Appearance in *Keesing's Contemporary Archives* only

890316 The European Parliament and the United States Senate both passed resolutions on March 16 criticizing China's handing of the riots in Tibet. The Senate condemned the use of violence against unarmed demonstrators and called for the lifting of restrictions on foreign reporters' access to Tibet and the monitoring of human rights violations there (Keesing's Contemporary Archives 35(3): 36522).

890322 The second round of US-PLO talks were held in Tunis on March 22. The first round, also held in Tunisian capital, had taken place on Dec. 16, 1988, after Arafat had satisfied US demands by explicitly accepting UN Security Council Resolutions 242 and 338. The US team was led by the US ambassador in Tunis, Robert Pelletreau, accompanied by two other US diplomats. The talks lasted for four and a half hours and dealt with a wide range of subjects (Keesing's Contemporary Archives 35(3): 36536).

TABLE 9.3 Comparison between Foreign Policy Instruments in Two Projects

Values and Categories		N	%
(a) Frequency distribution of foreign policy instruments in the CREON project			
1	Diplomatic	1,785	61.9
2	Domestic/Political	65	2.3
3	Military	465	16.1
4	Intelligence	48	1.7
5	Economic	320	11.1
6	Scientific/Technological	39	1.4
7	Promotive	124	4.3
8	Natural Resources	36	1.2
	Total =	2,882	100.0
(b) Frequency distribution of foreign policy instruments of this project			
1	Least costly/Propaganda	964	26.1
2	Second least costly/Diplomacy	1,945	52.7
3	Second most costly/Economic tools	361	9.8
4	Most costly/Military tools	419	11.4
	Total =	3,689	100.0
(c) Comparison between instruments in two projects after conversion			
CREON			
1	Propaganda/Diplomacy (1, 2, 4, 6, 7 in [a])	2,061	71.5
2	Economic (5, 8)	356	12.4
3	Military (3)	465	16.1
	Total =	2,882	100.0
This Project			
1	Propaganda/Diplomacy (1, 2 in [b])	2,909	78.8
2	Economic (3)	361	9.8
3	Military (4)	419	11.4
	Total =	3,689	100.0

Note: Part (a) is extracted from Hermann (1982, 168). Values are assigned to the categories of the CREON project for facilitating subsequent comparison. The CREON project draws on one quarter (i.e., three months) from each year during the period 1959-68. This casts doubts on its representativeness.

TABLE 9.4 Different Editors Compiling *Foreign Affairs Chronology*

(a) Editors and Number of Observations

Year	Editor's ID number	Names	Observations
1978	1	Elaine P. Adam	300
1979	1	Elaine P. Adam	387
1980	1	Elaine P. Adam	287
1981	1	Elaine P. Adam	357
1982	2	Janis A. Kreslins	329
1983	2	Janis A. Kreslins	222
1984	2	Janis A. Kreslins	188
1985	3	Kay King	189
1986	4	Sara Robertson	187
1987	5	Peter Hayes	173
1988	5	Peter Hayes	129
1989	5	Peter Hayes	148
1990	5	Peter Hayes	173
1991	6	Patricia Lee Dorff	207
1992	6	Patricia Lee Dorff	135
1993	6	Patricia Lee Dorff	126
1994	6	Patricia Lee Dorff	152

(b) One-Way Analysis of Variance

Source	SS	df	MS	F	Prob. > F
Between groups	88239.83	5	17647.97	8.50	.0017
Within groups	22850.17	11	2077.29		
Total	111090.00	16	6943.13		

Bartlett's test for equal variances: $\chi^2(3) = 3.2648$ Prob. > $\chi^2 = 0.353$

Note: Bartlett's test performed on cells with positive variance; 2 single-observation cells were not used.

TABLE 9.5 Do Different Editors Lead to Different Distributions of Event Characteristics?

Column = EDITORS; 1 = Elaine P. Adam, 2 = Janis A. Kreslins, 3 = Kay King, 4 = Sara Robertson, 5 = Peter Hayes, 6 = Patricia Lee Dorff

(a) EDITORS versus STACRAFT (the primary foreign policy instruments used)

		EDITORS					
		1	2	3	4	5	6
Propaganda	1	97	90	74	36	27	23
Diplomacy	2	178	105	83	101	94	90
Economic tools	3	25	18	12	32	19	22
Military tools	4	33	34	20	18	16	21

	Value	Sig.	Total = 1,268
Chi-square	69.0229	.0000	
Cramer's V	.1347	.0000	
Lambda	.0000	NA (Not Available)	

Note: When editors collect more than one year of event records, the yearly averages of event counts are used for analysis. This is why the total of observations is different from the full data set. There are slight differences among subtables due to rounding errors.

(b) EDITORS versus AFFECT (the sender's affect toward the target)

		EDITORS					
		1	2	3	4	5	6
Negative affect	-1	108	95	92	67	41	32
Neutral affect	0	57	32	28	23	15	12
Positive affect	1	169	119	69	97	99	112

	Value	Sig.	Total = 1,267
Chi-square	59.1020	.0000	
Cramer's V	.1527	.0000	
Lambda	.0382	.0695	

TABLE 9.5 (cont'd)

(c) EDITORS versus NEGOTIAB (the negotiability of issues)

		EDITORS					
		1	2	3	4	5	6
Transcendent issues	1	50	37	52	50	17	14
Symbolic issues	2	239	175	106	110	106	104
Substantive issues	3	43	34	31	27	33	37

	Value	Sig.	
Chi-square	50.8362	.0000	Total = 1,265
Cramer's V	.1418	.0000	
Lambda	.0000	NA	

(d) EDITORS versus ISUTYPE1 (the primary issue types of the COPDAB project)

		EDITORS					
		1	2	3	4	5	6
Symbolic/political relations	1	5	12	4	6	3	5
Economic relations	2	41	32	24	24	32	35
Military/strategic relations	3	154	120	62	57	48	61
Cultural/Scientific relations	4	2	3	2	1	1	3
Environment/natural resources	5	1	1	1	1		1
Human/demographic/ethnic issues	6	21	25	23	30	10	11
Political order/law/organization	7	110	54	73	68	62	40

	Value	Sig.	
Chi-square	73.8674	.0000	Total = 1,269
Cramer's V	.1079	.0000	
Lambda	.0469	.0609	

TABLE 9.5 (cont'd)

(e) EDITORS versus FOURPOW (the four-fold classification of national power)

		EDITORS					
		1	2	3	4	5	6
Small powers	1	156	125	76	71	63	67
Middle powers	2	58	24	21	27	28	24
Great Powers	3	54	43	36	39	42	55
Superpowers	4	64	55	56	50	23	9

	Value	Sig.	Total = 1,266
Chi-square	68.7811	.0000	
Cramer's V	.1346	.0000	
Lambda	.0000	NA	

(f) EDITORS versus REGIONS (geographical regions)

		EDITORS					
		1	2	3	4	5	6
Central & North America	0	35	44	28	34	25	20
South America	1	11	9	3	5	7	5
Western Europe	2	27	29	22	18	25	23
Eastern Europe/Scandinavia	3	71	62	62	53	31	41
Central & Western Africa	4	7	2	5	2	4	3
Southern & Eastern Africa	5	24	7	12	17	5	8
Middle East & North Africa	6	92	58	26	23	31	31
East & South Asia	7	45	25	20	15	22	19
South East Asia	8	16	9	7	15	5	5
The Pacific	9	4	1	4	5	1	1

	Value	Sig.	Total = 1,266
Chi-square	79.0651	.0013	
Cramer's V	.1118	.0013	
Lambda	.0222	.0996	

I had to make a slight adjustment, however. Since the CREON project applies a very narrow definition to propaganda instruments, it makes sense to combine the categories "propaganda" and "diplomacy." The results of frequency distribution are listed in Table 9.3. After conversion, in my data set, among the primary foreign policy instruments used by Americans from 1978 to 94, "Diplomacy/Propaganda" accounts for 78.8 %, "Economic tools" for 9.8 %, and "Military tools" for 11.4 %. By contrast, in the CREON project, which covers the period from 1959 to 1968, the corresponding percentages of the three categories are 71.5%, 12.4%, and 16.1%. Some discrepancies can be observed, but they are not significantly large. Similar comparisons can be made between this study and other event data projects such as COPDAB and WEIS. In particular, a comparison between the issue-type distribution in COPDAB and in this study would be appealing because the same coding scheme is used in both projects. I will not make such a comparison at this point, however.

Another source bias may come from the participation of various editors in compiling the event records in *Foreign Affairs Chronology*. As shown in Table 9.4.a, six editors were involved in the compiling process. Different editing styles may have led to various yearly event counts. A one-way analysis of variance in Table 9.4.b suggests that there are significant differences in the resultant event counts by different editors.

Furthermore, I examined the relationship between editors and various characteristics of events. Tables 9.5.a-f show contingency tables that examine whether or not the compilations of different editors led to different distributions of event traits. The set of dependent variables includes STACRAFT, AFFECT, NEGOTIAB, ISUTYPE1, FOURPOW, and REGIONS.

Across all the tables, the chi-square statistics are highly significant, implying the existence of some sort of relationship in the population. Moreover, the scores of Cramer's V are all significant, and lie between the range of (.10, .16). This suggests a weak association between editors and each of the six dependent variables. I would therefore assert that there is some degree of bias associated with differing editing styles.

9.1.2 Intercoder Agreement

For event studies, intercoder reliability is at the heart of the replicability issue. Perfect intercoder reliability, if existing, would suggest that a coder should have the same set of scores for an event over a period of time, or different coders should have the same set of scores for an event, using the same codebook. This is an almost impossible goal to achieve because individuals often have different perceptions in characterizing the real world. Even if the same person is carrying out repeated measurement attempts, cognitive changes may occur over time. In addition, the complexity of the subject matter makes the goal of perfect reliability even less attainable.

To examine the reliability of the codebook developed for this study, additional coders were required to repeat the coding attempts. To limit costs, I hired only a senior undergraduate to work on a sample of the full data set. About 5% (N = 187) of the 3,689 cases were randomly selected. The coder was supplied with a copy of the codebook (Appendix I), a copy of the coder's instruction manual (Appendix II), and a bundle of prepared coding sheets. The coder went through a one-hour, paid training session, practicing on a few cases from a 1% random sample, which did not overlap with the 187 cases. Even though the coder was encouraged to contact me, the primary coder, when she

had questions about the codebook or the background information about specific events, no contacts were made from start to finish. I detected at least a dozen errors made by the testing coder, which resulted from either typographical errors or violations of the coding rules provided. I decided, however, not to correct any of these errors.

Kappa statistic is often used to measure intercoder (or interrater, interobserver) agreement. According to Agresti (1990, 366), Kappa can be expressed as

$$\kappa = \frac{\Sigma \pi_{ii} - \Sigma \pi_{i+} \pi_{+i}}{1 - \Sigma \pi_{i+} \pi_{+i}}, \qquad (9.1)$$

where $\Sigma \pi_{ii}$ is the probability that the two observers agree, or the actual observer agreement, and $\Sigma \pi_{i+} \pi_{+i}$ is the expected observer agreement purely by chance. The Kappa statistic ranges from 0 to 1. It is 0 when the agreement equals what is expected by chance, and 1 when there is perfect agreement. On rare occasions, negative Kappa values occur when the actual observer agreement is weaker than the expected agreement by chance. It is obvious that the stronger the agreement between the observers, the higher the Kappa values. Landis and Koch (1977, 165) propose a guideline for the interpretation of Kappa statistics on intercoder agreement as follows: *poor*, if $\kappa < 0$; *slight*, if $0 \le \kappa \le 0.20$; *fair*, if $0.21 \le \kappa \le 0.40$; *moderate*, if $0.41 \le \kappa \le 0.60$; *substantial*, if $0.61 \le \kappa \le 0.80$; *almost perfect*, if $0.81 \le \kappa \le 1.00$.

TABLE 9.6 Intercoder Agreement between Two Coders

	Raw Counts		*Kappa-Statistic Measure of Intercoder Agreement*				
Variables	Agree N (%)	Disagree N(%)	Agreement	Expected Agreement	Kappa	Z	Pr>Z
(Original variables appearing in the coding sheet)							
YEAR	187 (100%)	0 (0%)					
MONTH	187 (100%)	0 (0%)					
DAY	187 (100%)	0 (0%)					
NONCASE	187 (100%)	0 (0%)					
ACTOR	187 (100%)	0 (0%)					
TARGET	183 (97.9%)	4 (2.1%)					
PROPAGAN	141 (75.4%)	46 (24.6%)	75.40%	49.89%	.5091	7.00	.0000
PROPITEM	105 (56.1%)	82 (43.9%)					
DIPLOMAC	164 (87.7%)	23 (12.3%)	87.70%	53.12%	.7376	10.17	.0000
DIPLITEM	115 (61.5%)	72 (38.5%)					
ECONOMIC	168 (89.8%)	19 (10.2%)	89.84%	76.31%	.5710	8.03	.0000
ECONITEM	162 (86.6%)	25 (13.4%)					
MILITARY	170 (90.9%)	17 (9.1%)	90.91%	74.15%	.6483	8.88	.0000
MILIITEM	160 (85.6%)	27 (14.4%)					
ISUTYPE1	129 (69.0%)	58 (31.0%)	68.98%	29.75%	.5585	12.85	.0000
ISUITEM1	80 (42.8%)	107 (57.2%)					
ISUTYPE2	59 (31.6%)	118 (68.4%)	31.55%	24.26%	.0962	3.69	.0001
ISUITEM2	51 (27.3%)	126 (72.7%)					
MULTAR	150 (80.2%)	37 (19.8%)	80.21%	35.36%	.6939	17.10	.0000
LOCATION	101 (54.0%)	86 (46.0%)	54.01%	27.92%	.3619	11.09	.0000
GESTURE	140 (74.9%)	47 (25.1%)	74.87%	46.48%	.5304	10.99	.0000
(Transformed variables)							
STACRAFT	143 (76.5%)	44 (23.5%)	76.88%	34.32%	.6480	14.30	.0000
NEGOTIAB	148 (79.1%)	39 (20.9%)	81.77%	56.79%	.5781	10.34	.0000
PHYSICAL	160 (85.6%)	27 (14.4%)	86.02%	60.11%	.6496	8.91	.0000
AFFECT	143 (76.5%)	44 (23.5%)	77.30%	48.34%	.5605	10.39	.0000
FACINDEX	113 (60.4%)	74 (39.6%)	61.41%	20.85%	.5125	15.54	.0000
DIRECT	140 (74.9%)	47 (25.1%)	77.35%	50.06%	.5464	7.36	.0000
MULTOOLS	132 (70.6%)	55 (29.4%)	70.97%	51.02%	.4072	6.39	.0000
MULISSUE	84 (44.9%)	103 (55.1%)	44.92%	35.56%	.1453	3.64	.0001

TABLE 9.7 Comparison of Coding of Issue-Types between Two Coders

Value	Category	*1st (the primary) Coder* ISUTYPE1	ISUTYPE2	*2nd Coder* ISUTYPE1	ISUTYPE2
1	Symbolic (relations)	4 (2.1%)	0 (0%)	6 (3.2%)	16 (8.6%)
2	Economic	25 (13.4%)	12 (6.4%)	30 (16.0%)	10 (5.3%)
3	Military/Strategic	87 (46.5%)	13 (7.0%)	70 (37.4%)	32 (17.1%)
4	Cultural/Scientific	1 (.5%)	0 (0%)	3 (1.6%)	0 (0%)
5	Environment	1 (.5%)	0 (0%)	1 (.5%)	2 (1.1%)
6	Human/Ethnic	15 (8.0%)	2 (1.1%)	16 (8.6%)	8 (4.3%)
7	Political Order/Law	54 (28.9%)	11 (5.9%)	61 (32.6%)	71 (38.0%)
8	Missing	0 (0%)	149 (79.7%)	0 (0%)	48 (25.7%)
	Total =	187 (100%)	187 (100%)	187 (100%)	187 (100%)

Note: ISUTYPE1 = the primary issue-type under the COPDAB classifying system; ISUTYPE2 = the secondary issue-type.

The results of Kappa statistics were obtained by using the STATA program and are listed in Table 9.6. Due to the limitations of the STATA program, Kappa-statistic measures are not available when there are too many categories, e.g., in the variables TARGET and ISUITEM1, or when there is only a single value recorded across all the observations, e.g., in the variables NONCASE and ACTOR. That being the case, I could look at the literal percentages of the agreement between the testing coder and the primary coder.

The first half of Table 9.6 reports the results of intercoder agreement on the original variables appearing in the coding sheet, while the second half displays the results of intercoder agreement on the transformed variables. It should be noted that in the far-right column of Table 9.6, all the small values of the observed significant level suggest a rejection of the null hypothesis that the coders involved make their decisions randomly in the coding process. Because of this, I feel more confident about interpreting intercoder reliability based upon the values of the Kappa-statistic in Table 9.6.

For the basic components of an event such as date, actor, and target, I found that the percentages of agreement between coders are as high as 95%. For the identification of the presence of individual foreign policy instruments, the Kappa values range from .51 to .74, indicating a *moderate* to *substantial* degree of intercoder agreement. The literal percentages of agreement are much higher, from 75.40% to 91.91%. As to the identification of individual policy items, I found that ECONITEM and MILIITEM have about 85% agreement between the two coders, as compared to 56.1% agreement for PROPITEM and 61.5% agreement for DIPLITEM. Apparently, the two coders disagreed

more in pointing out individual policy items in propaganda or diplomacy than in economic or military tools.

When identifying the primary issue type of an event, the two coders had close to 70% agreement, or a Kappa value of .56, displaying a *moderate* degree of intercoder agreement. The identification of the secondary issue-type has a much lower percentage of observed agreement (= 31.6 %), and a rather low score for the Kappa-statistic (= .096), exhibiting a *slight* degree of intercoder agreement. The percentages of agreement between the two coders dropped when they were considering individual issue items (42.8% for ISUITEM1, and 27.3% for ISUITEM2).

Table 9.7 lists the frequencies of ISUTYPE1 and ISUTYPE2 resulting from the coding of the two coders. Most obviously, the secondary issue-type was overcoded by the testing coder. The individual categories "Symbolic/political relations," "Military/strategic relations," and "Political order/law/organization," were most overcoded by the testing coder in the secondary issue-type of an event. Moreover, there were 18 cases in which the testing coder violated one of the coding rules: ISUTYPE1 ≠ ISUTYPE2. This implies that the coding of issue-related variables is more ambiguous and thus more difficult than the coding of variables concerning foreign policy instruments.

Furthermore, as can be seen in Table 9.6, MULTAR and GESTURE have fairly high percentages of agreement (= 80.2% and 74.9%), displaying a *moderate* to *substantial* degree of intercoder agreement. LOCATION exhibits 54% observed agreement between the two coders. The corresponding Kappa value of .36 shows only a

fair degree of intercoder agreement. This reaffirms the inherent difficulties associated with the identification of the problem location of an event.

As shown in the second half of Table 9.6, all the transformed variables except MULISSUE display at least a *moderate* degree of intercoder agreement, with Kappa statistics ranging from .41 to .65. MULISSUE has a *slight* degree of intercoder agreement, with a Kappa value of .15. As noted earlier, the reason for this discrepancy is that the secondary issue-type was considerably overcoded by the testing coder.

Intercoder reliability is a matter of degree. The results in Table 9.6 indicate at least a *moderate* degree of intercoder agreement for all the key variables, original or transformed, included in the previous multivariate analysis. The issue-related variables appear to need further refinements to reduce ambiguities or uncertainties. Overall, the results of intercoder reliability are encouraging. They might have been even better if the testing coder had been put through a longer training session and closely monitored during the coding process.

9.2 VALIDITY

A reliable measure is not necessarily an accurate representation of some abstract concept of interest. It has to be valid as well. The notion of validity concerns the extent to which an indicator (or a variable) measures what it intends to measure. As to the fundamental differences between reliability and validity, Carmines and Zeller (1979, 15) make the following observation: "Just as reliability is inversely related to the amount of random error, so validity depends on the extent of nonrandom error present in the measurement process." In this section, I will first discuss the validity issues in general

and then explore the validity of the FACINDEX scale as a representation of the cooperation/conflict continuum between nations.

9.2.1 Assessment of Validity

In a broad sense, the concept of validity refers to "the best approximation" to the truth of causal hypotheses or propositions (Campbell and Cook 1979, 37). Neither what is true nor what is false is a major concern here, because truth or falsity cannot be known for certain. Validity assessment, however, enables one to ascertain different types of ambiguity or uncertainty emerging in the research process, which may have a significant impact on the inference of research findings. In brief, the primary concerns are with the possible threats to the claims of causality and their generalizability.

Validity assessment in principle revolves around the trustworthiness of the conclusions drawn from research. A useful dichotomy for classifying a variety of types of validity is the distinction between *internal validity* and *external validity*. Jaeger (1993, 105) defines *internal validity* as "the validity of conclusions for the specific subjects (persons, schools, etc.) observed in the setting and circumstances where research data were collected," and *external validity* as "the generalization of those conclusions to other subjects, other settings, or other circumstances." In other words, this distinction is "between validity as correspondence between two sets of things—such as concepts, variables, methods, and data—and validity as generalizability of results, references, and theory" (Weber 1990, 18). In the context of event studies, validity assessment should concentrate on the correspondence between the categories in the classification scheme

and what (i.e., the abstract concepts) they are supposed to measure, and the generalizability of the findings beyond the specific data, measurement, and methods.

Internal Validity

In examining internal validity, I will first address *face validity*—whether the categories or variables represent the pertinent abstract concepts. For variables concerning foreign policy output, such as STACRAFT, AFFECT, MULTOOLS, FACINDEX, or their original appearances in the coding sheet, there is a strong correspondence between the derived categories and the theoretically defined concepts. As noted in Chapter 8, PHYSICAL, the distinction between verbal and physical actions, is likely to be misclassified and requires further refinements. The transformed temporal variables, such as PCOLDWAR, ELECTION, PARTY, and ADMINIST, however, have high face validity. The only dispute is over the exact time line. For instance, I classify U.S. administrations by years, but some may argue that the date of a presidential election or inauguration is more precise.

As for the actor-related variables, I found that in measuring national power, Model 2, a composite index combining critical mass, GNP, and military expenditure, performs well in matching the resultant power rankings to general perceptions of the contemporary world. Despite the absence of a multiplier accounting for the intangible factors in Model 2, I argue that perhaps a nation's capability for mobilizing resources and realizing potential power is reflected in how well it does in maintaining a high productivity in GNP and sustaining a high level of military expenditure. In addition, MULTAR and REGIONS have relatively high face validity. In the process of selecting

valid cases, I placed a limit of seven on the number of multiple target nations (MULTAR). This treatment not only made the coding task manageable, but also prevented superficially increasing the number of valid cases.[75] As to REGIONS, the classification of geographical regions is clear-cut, even though there are other categorizing systems for this concept.

I have relatively less confidence in the face validity of the issue-related variables. The COPDAB system of issue-types itself has some degree of ambiguity and some overlapping areas between categories. For instance, in coding issue-type, the action of restoring political order in a target nation may fall within either the category of "Military/strategic relations" or the category of "Political order/law/organization." Moreover, the violation of "human rights" is sometime intertwined with the struggle for "democratization." Note that the issue items of "human rights" and "democratization" belong to different broad categories of issue-types. Furthermore, I am aware of some disputes that may arise from the transformation of individual issue items to three groups of issue negotiability (NEGOTIAB). For instance, I characterize issue items belonging to the category "Military/strategic relations" as "Symbolic/medium negotiability" because of their implications for national security. Some may argue that the goal of arms control is identifiable, and its process is measurable; therefore, it should be classified as Substantive/high negotiability." Such disagreements are inevitable as long as there are ambiguities associated with the notions of value distillation and negotiability. Finally, the problem location of an issue (LOCATION) cannot always be easily identified. For

[75] A similar issue confronted in war studies is whether to record two world wars as two single incidents, or as many dyads.

example, a famine occurring in a target nation can be treated as food shortage "Within the target's boundary," but it also can be viewed as "Symbolic relationships/ideas" when the problem rises to the level of humanitarian concerns. Therefore, both issue-related variables, LOCATION and the transformed DIRECT, contain some degree of uncertainty.

Another type of internal validity is *statistical conclusion validity.* Statistical conclusion validity is achieved when the causal relationship specified in the testable hypothesis can be accurately inferred from the target population or its sample, according to statistical evidence. Major threats to statistical conclusions about the significance of covariation (i.e., association or correlation between the dependent and independent variables) are *low statistical power*, *violated assumptions of statistical tests*, *the reliability of measures*, and so forth (Campbell and Cook 1979, 42-4). Since I used 3,689 valid cases, the potential problem of low statistical power is a lesser concern. To avoid the misuse of statistical tests, I applied suitable models for categorical data in the multivariate analysis. As to the reliability of the classification scheme, I have shown in this chapter that all key variables have a moderate to substantial degree of intercoder agreement. As suggested earlier, however, source bias in *Foreign Affairs Chronology* seems to exist to some extent. At this point, I do not know to what extent it affected my research findings.

The central issue of internal validity concerns the degree to which a researcher can be confident about the truth or falsity of a presumed $X \rightarrow Y$ causal relationship measured in the particular form of a study. In Chapter 7, I made efforts to explore three-way

contingency tables to detect possible sources of spuriousness. The findings suggest that the relationships between STACRAFT and FOURPOW, and between STACRAFT and NEGOTIAB are in fact moderated or specified. When substituting AFFECT for STACRAFT, I obtained similar findings. This means, for example, that the relationship of STACRAFT and FOURPOW only exists when NEGOTIAB is set at a certain level. The model selection procedure in the loglinear analysis in the three- or four-variable situations, however, points toward saturated models, which suggest the existence of interaction effect between the two independent variables. In summary, I do not have a hard-and-fast conclusion about the exact relationships between key variables. A further application of the structural equation model might be helpful in resolving this issue.

External Validity

Construct validity, one type of external validity, signifies the degree to which one can "make generalizations about higher-order constructs [i.e., more abstract theoretical concepts] from research operations" (Campbell and Cook 1979, 38). In other words, construct validity concerns confidence about whether or not concepts in the theoretical hypothesis indeed define measurable characteristics of the objects or phenomena, and whether or not the operationalized variables (measures) in fact measure those conceptually defined characteristics (Brewer and Hunter 1989, 135). Different measures of the same focal concept have high construct validity if they correlate highly with one another, and at the same time they show little or no empirical association with measures of other unrelated concepts. Major threats to construct validity are *inadequate*

preoperational explication of constructs, *mono-operation bias*, *mono-method bias*, and so on (Campbell and Cook 1979, 64-8).

In this study, I did not adopt multioperations and multimethods across key concepts, because of the accompanying high costs. The use of a single operation or method is usually insufficient to successfully evaluate the influence of the target construct. I can say, however, that among key concepts, the operationalization of power relations seems to contain a higher construct validity than others. In constructing relative capability scores, I have shown in Chapter 5 that high correlation can be found not only between some of the individual power measures, but also between the three power equations proposed. By contrast, the quantification of issue-types, in the face of many inherent difficulties in both theory and empirical reference, probably has the lowest construct validity. This is the area that awaits further theoretical and empirical inquiries.

Next, *theory* differs from *model* in its inclusion of some surplus meanings or interpretations. If a research project aims at examining theoretical constructs rather than merely testing simple causal hypothesis, then it can be evaluated in terms of *theoretical validity* (or *interpretive validity*). Theoretical validity refers to the degree of confidence in attributing a two-variable causal relationship to the influence of one intervening causal process rather than another (Brewer and Hunter 1989, 159). Theoretical validity is achieved when alternative theoretical interpretations are thoroughly tested. In other words, the key issue is whether or not a researcher can achieve "empirically grounded rather than merely conjectural interpretations" of the causal relationship in question (p. 157).

In this study, the inclusion of both the actor and issue dimensions in a single foreign policy model appears to have great potential for interpretation. As demonstrated in the three-way contingency tables or subtable analyses in Chapter 7, the suggestions that "power is issue-specific," or that "issues are power-specific," are no longer mere clichés serving as refuges whenever the power analysis or the issue analysis alone fails to provide a sensible explanation of foreign policy behavior. Now I have a better idea about the intervening effects of issues or power. Furthermore, the finding that the United States tends to show negative affect and adopt less costly policy instruments in its relations with more powerful target nations, has direct implications for how the United States manages to avoid all-out conflicts with other major powers, while maintaining its competitive edge and keeping these powers in check. In general, the analytic framework of this study is simple, but it is fruitful for addressing some unanswered questions in foreign policy behavior.

The central issue of external validity is generalizability. As Campbell and Cook point out, it is about how research findings of a study can be "(1) generalizing to particular target persons, settings, and times, and (2) generalizing across types of persons, settings, and times" (1979, 71). Assuming that the sampling bias of this study is quite moderate, the findings can be generalized to U.S. foreign policy behavior before 1978 and after 1994. I will be able to assess the *predictive validity* of this project when the data after 1994 are available. Meanwhile, I have strong confidence in generalizing the findings to the foreign policy behavior of other major powers. In particular, it is my contention that as a superpower, the Soviet Union may have resembled the United States a great deal in its foreign policy behavior. I have little confidence in generalizing the

findings to all nations' foreign policy behavior, because this is merely a one-nation study. As I argued earlier, the generalizability across all nations has little practical utility in foreign policy decisionmaking.

To sum up, this study appears to perform better in internal validity than in external validity. Low validity signifies ambiguity, uncertainty, and carelessness in the research process. It in fact has nothing to do, however, with the truth or falsity of the hypotheses. There are no perfect research designs, free from all the threats to various types of validity. It is noteworthy that some operations may strengthen one type of validity but weaken another. Researchers should be aware of the countervailing relationships between various types of validity. Empirical research should be viewed as an open-ended process. It requires reflective thinking by researchers themselves and healthy skepticism on the part of critics. It is unfortunate that reliability and validity issues are greatly underreported in empirical studies of foreign policy. This creates a barrier to progress in the field of foreign policy analysis.

9.2.2 The Validity of FACINDEX

The merits of developing a single summary index to measure the relations between nations are self-evident. The COPDAB scale constructed by Edward E. Azar and his colleagues is best known in the field of international relations. In this study, I have found that the FACINDEX scale (= STACRAFT × AFFECT) serves the same purpose, and in this section, I will make a comparison between the COPDAB and

FACINDEX scales. The findings support my contention that the FACINDEX scale is at least as good as the COPDAB scale.

First, a graphical contrast between the COPDAB and FACINDEX scales is presented in Figure 9.1. In the COPDAB scale, 1 represents the most cooperative relations between two nations, while 7 signifies the smallest degree of cooperation. On the other end of the COPDAB scale, 15 denotes the most hostile situations between nations, while 9 represents the lowest degree of conflict. In its entirety, the COPDAB scale constitutes a continuum of cooperation and conflict that can be used to summarize the bilateral relations between nations. In addition, the FACINDEX scale, from -4 to 4, represents the most hostile to the most cooperative situations between nations. Since both scales measure the same phenomenon, I expected to find a highly significant, negative correlation coefficient between them.

To facilitate my understanding of the relationship between these two scales, I conducted an analysis of the triangular relations between the United States, China, and Taiwan. I examined six distinctive acts: US → China, US → Taiwan, China → US, China → Taiwan, Taiwan → US, and Taiwan → China ("→" reads as "to" or "toward").[76]

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[76] One may prefer a single score to represent bilateral relations, e.g., US ↔ China relations. The problem with this treatment is that it often blurs the distinction between the sender and receiver. Moreover, there are difficulties associated with the calculation of a single score, especially for those events involving immediate reactions. In brief, I adopted the *directed dyad* format here in measuring foreign policy behavior. For the distinctions between *monad*, *summed dyad*, and *directed dyad*, see Chapter 4.

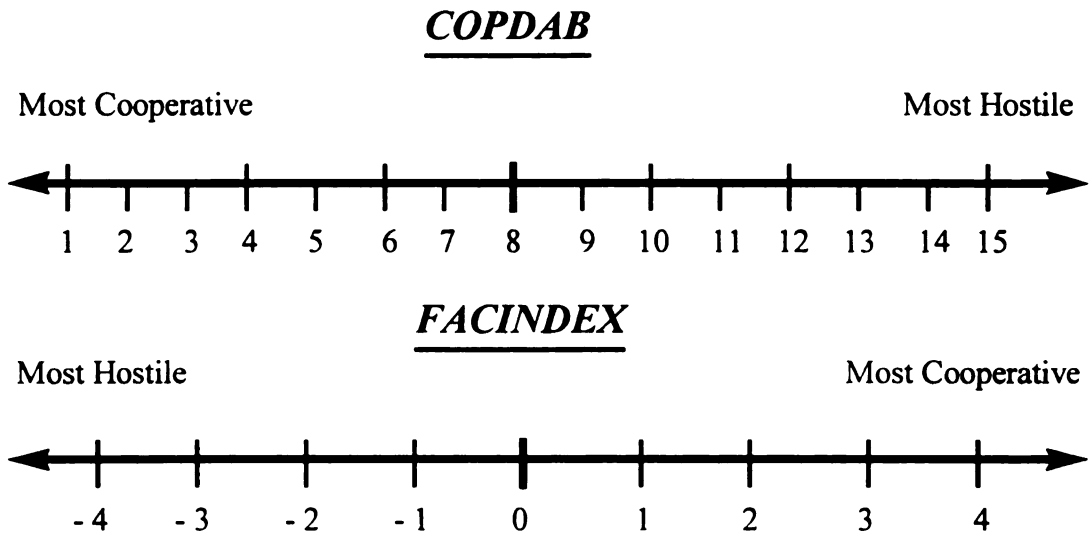

FIGURE 9.1 Graphical Comparison between the COPDAB and FACINDEX Scales

Relevant events were extracted from *Foreign Affairs Chronology*, covering the period from 1978 to 1994. They were recorded following the previous practice, i.e., using the same coding procedure and codebook (Appendix I). An additional variable, COPDABX, was included in the coding sheet to record the COPDAB scores. The classification scheme of the COPDAB scale is listed in Appendix III.

It should be noted that some events may involve mutual acts, e.g., both sides agreeing on something, or one side giving and the other side receiving. For example, for the event, "Sept. 21, 1978 First US-Chinese student exchange in 30 years to begin in October" (Council on Foreign Relations 1992, 11), I could assign scores to both US → China and China → US acts. Similarly, I could code the event, "Sept. 2, 1992 Despite virtual ban of US arms sales to Taiwan since 1982, President Bush announces plan to sell 150 advanced F-16 fighter jets to Taiwan..." (Council on Foreign Relations 1993, 239) as "sell arms" under US → Taiwan acts, and as "buy arms" under Taiwan → US acts. Under such circumstances, double counting was a potential problem. My remedy was to code such events from the U.S. perspective, i.e., under US → China or US → Taiwan acts.

The resultant data were then transformed into a time-serial data set. The unit is a month; therefore, the time-serial data set covers the period from January 1978 to December 1994 and has a total of 204 observations for each series. The treatment of missing values was to assign the midpoints, 8 for the COPDAB series and 0 for the FACINDEX series, as replacements.[77]

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[77] Another option for dealing with the missing values is the smoothing technique.

TABLE 9.8 Events between China and Taiwan

781231 PRC issues appeal to ROC to allow postal service, personal visits and trade exchanges as first step toward reunification. p. 11

810530 PRC offers to let ROC fly relatives to Beijing funeral of Soong Ching-ling, Sun Yat-sen widow, who died 5/29. p. 116

810909 PRC Standing Committee head Ye Jianying proposes 9-point PRC-ROC reunification plan, quickly rejected by ROC. p. 116

811003 PRC offers sea, air, mail links with ROC; ROC President Chiang Ching-kuo reaffirms 10/7 he will never negotiate. p. 116

820315 PRC sends note asking all diplomatic missions in Peking to advise their governments against dealing with ROC under guise of nondiplomatic exchanges. p. 146

820610 Taiwanese Prime Minister Sun Yun-suan, omitting longstanding demand that PRC must renounce communism, says reunification with China may become possible as differences between the two sides narrow. p. 146

820725 PRC urges ROC to open reunification talks, offering 9-point plan including ROC retention of armed forces, socioeconomic system; ROC reject proposal as trick. p. 146

830218 China applies to replace Taiwan at Asian Development Bank; US and Japan reportedly endorse Chinese membership. p. 175

840915 China becomes member of international police organization Interpol; Taiwan is ousted from membership. p. 206

860220 Board of governors of Asian Development Bank accepts PRC as bank's 47th member; PRC formally admitted 3/11; Taiwan, a founding member of bank, protests change in its official designation from "Republic of China" to "Taipei, China." p. 279

860503 Defecting Taiwanese Wang His-chueh hijacks China Airlines cargo plane to Guangzhou (Canton); first fact-to-face negotiations between PRC government and Taiwan's Nationalist government take place in Hong Kong 5/17-20, as representatives of both national airlines discuss return of plane, 2 crewmembers; plane, crew returned to Taiwanese airline officials in Hong Kong 5/23. p. 280

860725 Naturalized US citizen Roland Shensu Loo is sentenced to 12 years in prison in China for spying for Taiwan; 3 other Chinese, pleading guilty, receive lesser sentences. p. 280

TABLE 9.8 (cont'd)

880113 Chiang Ching-kuo, Taiwan's President since 1978, dies of heart attack. Chiang is succeeded immediately by Lee Teng-hui, who had been vice president. Zhao Ziyang, Chinese Communist Party general secretary, sends condolences 1/14, praises Chiang's efforts to reunify China. p. 352

890603 ...Chinese troops begin all-out assault on Tienanmen Square shortly after midnight 6/4. ...Protests erupt 6/4 in Taipei, Hong Kong and Macao... p. 396

900520 In presidential inaugural address, Taiwan President Lee calls for opening "channels of communication" with People's Republic of China and for ending state of war... p. 442

910430 President Lee Teng-hui of Taiwan declares end to 43-year period of emergency rule that had perpetuated state of war with mainland China... p. 486

920824 South Korea and China establish diplomatic relations in formal ceremony in Beijing. Taiwan breaks diplomatic relations with South Korea. p. 239

930429 Heads of organizations representing the Chinese and Taiwanese governments sign 4 cooperation agreements; call for resumption of regular dialogue between government officials. p. 233

940808 Taiwan and China sign accord aimed at resolving heated bilateral disputes; provisions center around fate of several high-jackers, fishing rights, patrolling authority in the Taiwan Strait, and quicker return to China from Taiwan of illegal Chinese immigrants. p. 241

Source: *Foreign Affairs Chronology* published by the Council on Foreign Relations.
Note: The date of the event is expressed in year/month/day at the beginning of the entry. The page numbers after the entry refer to the locations in original source (Council on Foreign Relations 1992-5).

TABLE 9.9 Description of Events between the United States, China, and Taiwan

Values and Categories		N	%
(a) Variable Name: ACTOR			
002	USA	171	80.7
710	China	41	19.3
(b) Variable Name: TARGET			
002	USA	41	19.3
710	China	131	61.8
713	Taiwan	40	18.9
(c) Variable Name: PROPAGAN (presence of propaganda)			
0	NO	92	43.4
1	YES	120	56.6
(d) Variable Name: DIPLOMAC (presence of diplomacy)			
0	NO	98	46.2
1	YES	114	53.8
(e) Variable Name: ECONOMIC (presence of economic tools)			
0	NO	178	84.0
1	YES	34	16.0
(f) Variable Name: MILITARY (presence of military tools)			
0	NO	178	84.0
1	YES	34	16.0
(g) Variable Name: STACRAFT (primary instruments used)			
1	Propaganda	57	26.9
2	Diplomacy	90	42.5
3	Economic tools	31	14.6
4	Military tools	34	16.0
(h) Variable Name: ISUTYPE1 (primary issue-type of the COPDAB system)			
1	Symbolic/political relations	3	1.4
2	Economic relations	41	19.3
3	Military/strategic relations	78	36.8
4	Cultural/scientific relations	7	3.3
5	Relations regarding physical environment/natural resources	1	.5
6	Relations regarding human /demographic/ethnic issues	12	5.7
7	Political order/law/organization	70	33.0
8	Missing	0	0

TABLE 9.9 (cont'd)

Values and Categories		N	%
(i) Variable Name: ISUTYPE2 (secondary issue-type of the COPDAB system)			
1	Symbolic/political relations	0	0
2	Economic relations	3	1.4
3	Military/strategic relations	16	7.5
4	Cultural/scientific relations	4	1.9
5	Relations regarding physical environment/natural resources	0	0
6	Relations regarding human /demographic/ethnic issues	5	2.4
7	Political order/law/organization	12	5.7
8	Missing	172	81.1
(j) Variable Name: NEGOTIAB			
1	Transcendent/low negotiability	10	4.7
2	Symbolic/medium negotiability	154	72.6
3	Substantive/high negotiability	48	22.6
(k) Variable Name: AFFECT			
- 1	Negative	70	33.0
0	Neutral	21	9.9
1	Positive	121	57.1
(l) Variable Name: FACINDEX			
- 4	Most hostile	8	3.8
- 3	Very hostile	9	4.2
- 2	Quite hostile	27	12.7
- 1	Least hostile	26	12.3
0	Neutral or ambiguous	21	9.9
1	Least cooperative	15	7.1
2	Quite cooperative	58	27.4
3	Very cooperative	22	10.4
4	Most cooperative	26	12.3

TABLE 9.9 (cont'd)

Values and Categories		N	%
(m) Variable Name: COPDABX			
1	Most cooperative	0	0
2		0	0
3		17	8.0
4		34	16.0
5		22	10.4
6		19	9.0
7	Least cooperative	50	23.6
9	Least hostile	12	5.7
10		31	14.6
11		25	11.8
12		2	.9
13		0	0
14		0	0
15	Most hostile	0	0

Note: For detailed single-word categories of the COPDAB project, see Appendix III.

(n) STACRAFT versus NEGOTIAB
Row=STACRAFT; Column=NEGOTIAB

	1	2	3
1	3	49	5
2	6	66	18
3		6	25
4	1	33	

	Value	Sig.
Chi-Square	77.6406	.0000
Gamma	.2861	.0019
Somers' d	.2167	.0019

(o) NEGOTIAB versus AFFECT
Row=AFFECT; Column=NEGOTIAB

	1	2	3
- 1	9	44	17
0		19	2
1	1	91	29

	Value	Sig.
	18.4317	.0010
	.1974	.1694
	.1116	.1694

(p) Correlation coefficient between COPDABX and FACINDEX

	COPDABX	FACINDEX
COPDABX	1.0000	- .9187
	(P = .)	(P = .000)
FACINDEX	- .9187	1.0000
	(P = .000)	(P = .)

Because there are relatively few observations concerning China → Taiwan, Taiwan → China, and Taiwan → US acts, they were excluded in the analysis. Table 9.8 lists the events between China and Taiwan, from 1978 to 1994, appearing in *Foreign Affairs Chronology*. It seems likely that the events between China and Taiwan were largely underreported. Despite this potential source bias, it is apparent that there was progress, however slow it was, in China-Taiwan relations as time went by. Next I will turn to the relationships between the US → China, China → US, and US → Taiwan acts.

Table 9.9 lists miscellaneous results after completing the coding of events involving the United States, China, and Taiwan. The most important finding is, as shown in Table 9.9.p, that COPDABX and FACINDEX have a highly significant, negative correlation coefficient (= -.9187). This implies that the FACINDEX scale is as good as the COPDAB scale in measuring the cooperation/conflict phenomenon.

Next I will briefly analyze the subtables. The total number of observations is 212. When Tables 9.9.a and 9.9.b are combined, it can be seen that 131 US → China acts, 41 China → US acts, and 40 US → Taiwan acts occurred in the period of from 1978 to 1994. In Table 9.9.g, propaganda and diplomacy together account for 70 % of the foreign policy instruments used, while economic and military tools account for 15 % each. As is shown in Table 9.9.h, the top three primary issue types are "Military/strategic relations" (N = 78; 36.8%), "Political order/law/organization" (N = 70; 33.0%), and "Economic relations" (N = 41; 19.3%). In Table 9.9.j, there are 154 cases of symbolic issues (= 72.6%), 48 cases of substantive issues (22.6%), and only 10 cases of transcendent issues (4.7%). As to the overall orientation toward the other nation, there are 121 cases of

positive affect (= 57.1%), 70 cases of negative effect (33.0%), and 21 cases of neutral affect (9.9%), as shown in Table 9.9.k.

Finally, I am interested in the relationships between NEGOTIAB and STACRAFT, and between NEGOTIAB and AFFECT. The contingency table in Table 9.9.n suggests a moderate, positive correlation between NEGOTIAB and STACRAFT (gamma = .2861). That is to say, in some of the triangular relations, the more negotiable the issue involved in an event, the more likely it is that costly policy instruments will be used. According to Table 9.9.o, the strength of the correlation between NEGOTIAB and AFFECT is close to moderate (gamma = .1974), but the large value of the observed significance level casts doubt on the certainty of this relationship.

In transforming the data above into the monthly scores, there are two choices: the sum of scores or the average scores of the individual acts within a month. The use of sum scores is questionable. For instance, suppose that there are three scores of 4 that signify three cooperative acts with China, initiated by the United States in a certain month. The resulting sum score is 12 in the US → China series, which can be mistakenly regarded as conflict between the United States and China within that month.[78] To further examine this potential problem, I include both the results using the sum and those using the average scores to represent the monthly relations in the following analysis.

[78] One solution is to recode 15 in the COPDAB scale as -7, 14 as -6, and so forth.

TABLE 9.10 Definitions of Time-Serial Variables

Variable Name	Description
F_{US_CH}	Frequency of monthly US → China acts
F_{CH_US}	Frequency of monthly China → US acts
F_{US_TW}	Frequency of monthly US → Taiwan acts
Y_{US_CH}	Sum of monthly COPDAB scores wrt (with regard to) US → China acts
Y_{CH_US}	Sum of monthly COPDAB scores wrt China → US acts
Y_{US_TW}	Sum of monthly COPDAB scores wrt US → Taiwan acts
X_{US_CH}	Sum of monthly FACINDEX scores wrt US → China acts
X_{CH_US}	Sum of monthly FACINDEX scores wrt China → US acts
X_{US_TW}	Sum of monthly FACINDEX scores wrt US → Taiwan acts
Z_{US_CH}	Average of monthly COPDAB scores wrt US → China acts
Z_{CH_US}	Average of monthly COPDAB scores wrt China → US acts
Z_{US_TW}	Average of monthly COPDAB scores wrt US → Taiwan acts
W_{US_CH}	Average of monthly FACINDEX scores wrt US → China acts
W_{CH_US}	Average of monthly FACINDEX scores wrt China → US acts
W_{US_TW}	Average of monthly FACINDEX scores wrt US → Taiwan acts

Note: In calculating the average scores, I adopted the following rule: $Z_{US_CH} = Y_{US_CH}$, if $F_{US_CH} = 0$, and $Z_{US_CH} = Y_{US_CH} / F_{US_CH}$, if $F_{US_CH} \neq 0$.

TABLE 9.11 Descriptive Statistics for Time-Serial Variables

Variable	Mean	Std. Dev.	Variance	Skewness	Kurtosis	Minimum	Maximum
Y_{US_CH}	8.6373	4.6963	22.0550	3.2418	15.5799	3	35
Y_{CH_US}	8.2745	1.4292	2.0425	4.9201	40.3405	4	21
Y_{US_TW}	8.1373	2.7953	7.8136	5.6430	46.2490	3	32
X_{US_CH}	.7696	2.1034	4.4245	1.5060	8.8270	−6	11
X_{CH_US}	−.1373	.6882	.4737	−1.2706	12.5983	−4	3
X_{US_TW}	.1618	1.1310	1.2791	1.4000	9.6055	−4	4
Z_{US_CH}	7.2745	1.7653	3.1164	−.5774	3.3025	3	11
Z_{CH_US}	8.1422	.8448	.7137	.4638	9.0111	4	11
Z_{US_TW}	7.7843	1.2368	1.5296	−2.3416	11.1948	3	11
W_{US_CH}	.5147	1.4638	2.1426	.2827	4.1165	−4	4
W_{CH_US}	−.1275	.6226	.3876	−.7672	10.9113	−3	3
W_{US_TW}	.1569	1.0759	1.1575	1.4934	10.7914	−4	4

TABLE 9.12 The Correlation Matrix between Series

(a) Correlation Coefficients between Series Using the COPDAB Scores

	Y_{US_CH}	Y_{CH_US}	Y_{US_TW}	Z_{US_CH}	Z_{CH_US}	Z_{US_TW}
Y_{US_CH}	1.0000					
	(P = .)					
Y_{CH_US}	.1257	1.0000				
	(P = .073)	(P = .)				
Y_{US_TW}	.2140	.0411	1.0000			
	(P = .002)	(P = .560)	(P = .)			
Z_{US_CH}	.2858	.0543	- .0633	1.0000		
	(P = .000)	(P = .440)	(P = .368)	(P = .)		
Z_{CH_US}	.0288	.6750	- .1400	- .0124	1.0000	
	(P = .682)	(P = .000)	(P = .046)	(P = .860)	(P = .)	
Z_{US_TW}	.0766	- .1945	.4718	.0385	- .2080	1.0000
	(P = .276)	(P = .005)	(P = .000)	(P = .585)	(P = .003)	(P = .)

(b) Correlation Coefficients between Series Using the FACINDEX Scores

	X_{US_CH}	X_{CH_US}	X_{US_TW}	W_{US_CH}	W_{CH_US}	W_{US_TW}
X_{US_CH}	1.0000					
	(P = .)					
X_{CH_US}	.0223	1.0000				
	(P = .752)	(P = .)				
X_{US_TW}	.0157	- .2814	1.0000			
	(P = .823)	(P = .000)	(P = .)			
W_{US_CH}	.8535	.0100	- .0005	1.0000		
	(P = .000)	(P = .887)	(P = .994)	(P = .)		
W_{CH_US}	- .0338	.9707	- .2714	- .0352	1.0000	
	(P = .631)	(P = .000)	(P = .000)	(P = .617)	(P = .)	
W_{US_TW}	.0420	- .2605	.9808	.0082	- .2561	1.0000
	(P = .550)	(P = .000)	(P = .000)	(P = .907)	(P = .000)	(P = .)

(c) Correlation Coefficients between the Correspondent Series

Y_{US_CH} vs. X_{US_CH}	Y_{CH_US} vs. X_{CH_US}	Y_{US_TW} vs. X_{US_TW}	Z_{US_CH} vs. W_{US_CH}	Z_{CH_US} vs. W_{CH_US}	Z_{US_TW} vs. W_{US_TW}
.0488	- .7478	- .4885	- .9477	- .9451	- .9727
(P = .488)	(P = .000)	(P = .000)	(P = .000)	(P = .000)	(P = .000)

Note: The results are listed in the form of Coefficient /(2-tailed Significance) and " . " is printed if a coefficient cannot be computed. The total number of observations is 204.

The definitions of individual series are presented in Table 9.10. There are three distinctive acts for analysis: US → China, China → US, and US → Taiwan. The series can be constructed using either of the scales, COPDAB or FACINDEX, and using either the sum or the average scores. Therefore, there are 12 series in total. *Y* stands for the series using the sum scores of the COPDAB scale, *Z* for the series using the average scores of the COPDAB scale, *X* for the series using the sum scores of the FACINDEX scale, and *W* for the series using the average scores of the FACINDEX scale. In addition, the subscripts are used to denote the types of acts in the triangular relations.

The descriptive statistics of individual series are listed in Table 9.11, which shows that the distributions of US → China acts using the average scores (i.e., the Z_{US_CH} and W_{US_CH} series) are approximate to the bell shape of a normal distribution. The distributions of the *Y* series, however, which are nowhere near the normal distribution, imply a much more volatile nature in the triangular relations. Overall, there seems to be a consistency between the series of *W*s, *X*s, and *Z*s. If 8 in the COPDAB scale or 0 in the FACINDEX scale is taken as the cutoff point that separates cooperation from conflict, a consistency can be found in the means of the series between *W*s and *Z*s. When the average scores are used, the monthly US → China or US → Taiwan acts are generally cooperative, while the monthly China → US acts are hostile overall. Note that these means over time are very close to the neutral midpoints, 0 in the FACINDEX scale and 8 in the COPDAB scale.

Table 9.12 contains the correlation matrix of individual series. From Tables 9.12.a and 9.12.b, it can be observed that in the series of *W*s, *X*s, and *Z*s, there is a highly

significant, negative correlation between the China → US and US → Taiwan acts. In these series, I did not find significant correlation coefficients either between the US → China and China → US acts, or between the US → China and US → Taiwan acts. In Table 9.12.a, the results concerning the *Y* series run counter to these findings. Again, this reaffirms the consistency between the series of *W*s, *X*s, and *Z*s.

Next, I calculated the correlation coefficients between the corresponding series that measure the same type of acts, use the same construction method (i.e., the sum or the average scores), but apply different scales (i.e., COPDAB or FACINDEX). Table 9.12.c shows that a highly significant correlation score of -.95 was found between any two series which apply different scales, whenever the average scores are used. When the sum scores are used, the results are far less impressive. This reassures me that in the process of aggregating individual acts into a single monthly score, the average scores are preferable to the sum scores.

The univariate analysis of individual series is crucial for time-series modeling because it can shed light on understanding the disturbance structure in the time-dependent process. In particular, the focus is on assessing whether the driving force of a series is due to deterministic trend or stochastic drift. Based on the resulting properties of individual series, I then could proceed with the application of various time-series models, such as the regression, Box-Jenkings, vector autoregression, and error correction approaches.[79]

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[79] Excellent introductions to time-series modeling techniques can be found in Freeman (1983), Freeman et al. (1989), Holden et al. (1990), McCleary and Hay (1980), McDowall et al. (1980), Ostrom (1990), and Pindyck and Rubinfeld (1981). For

First, I examined the graphs of individual series. In Figures 9.2-4, every individual series is plotted against time. My first impression was that none of the individual series exhibit any type of regularity, such as trends and cycles. In comparing the four graphs describing US → China acts, I could see that Figure 9.2.a differs from Figures 9.2.b-d in the first quarter of the whole time period. The method of using the sum of the monthly COPDAB scores (as in Figure 9.2.a) is incapable of showing the predominantly cooperative acts that the United States directed toward China during the first few years after 1978. This honeymoon period was the result of the normalization of the Sino-American relations. This again indicates that the use of the sum scores of the COPDAB scale can lead to a deceiving representation of bilateral relations.

Next, I moved on to a formal method for testing the stochastic properties of individual series, the Augmented Dickey-Fuller (ADF) test.[80] The critical values for the calculated ADF t-statistic can be found in MacKinnon (1991). If the value of the calculated t-statistic is less than the critical value (i.e., a larger negative value), the hypothesis of a unit root is rejected. That is, the series then can be considered stationary and integrated at order zero, I(0).

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univariate and multivariate tests of time serial data, see Cromwell et al. (1994a), and Cromwell et al. (1994b).

[80] Cromwell et al. (1994a) present a sequential procedure of identifying the underlying structure of individual series. The ADF test covers only the first stage of testing for *stationarity*. I do not go forward to the other stages to pursue testing for *normality*, *independence*, or *linear vs. nonlinear dependence*.

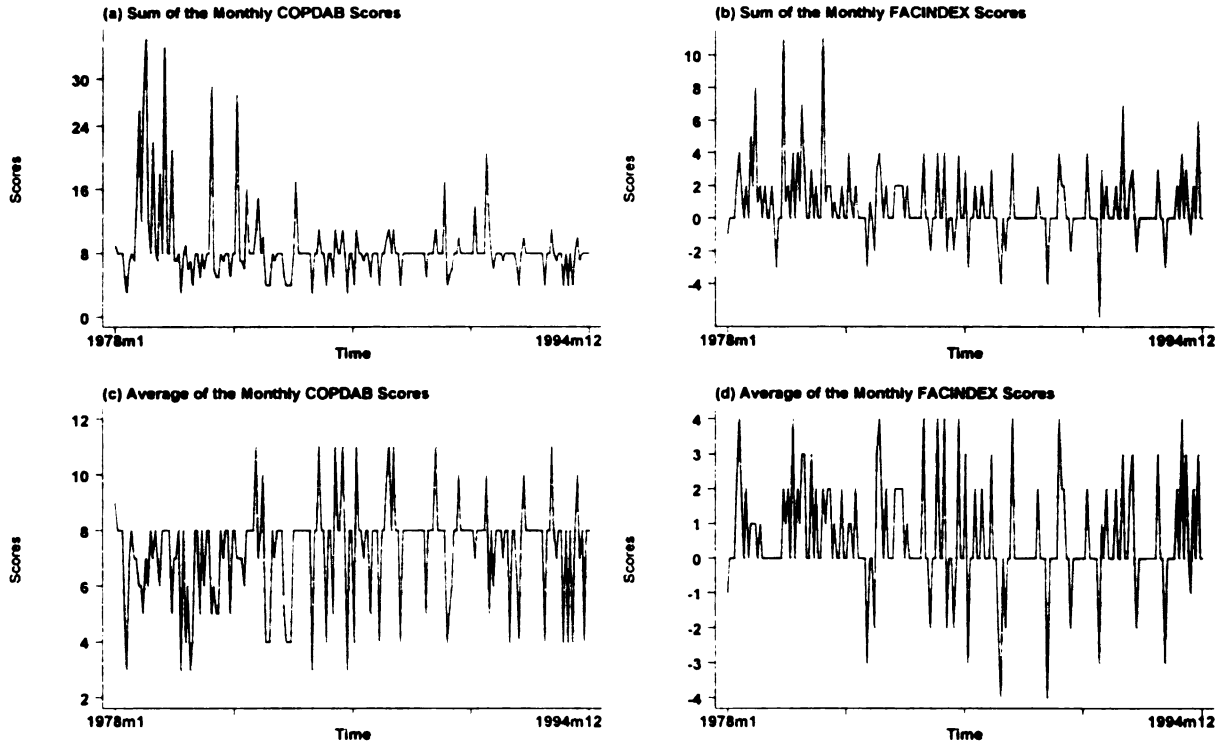

FIGURE 9.2 U.S. to China Acts, 1978-94

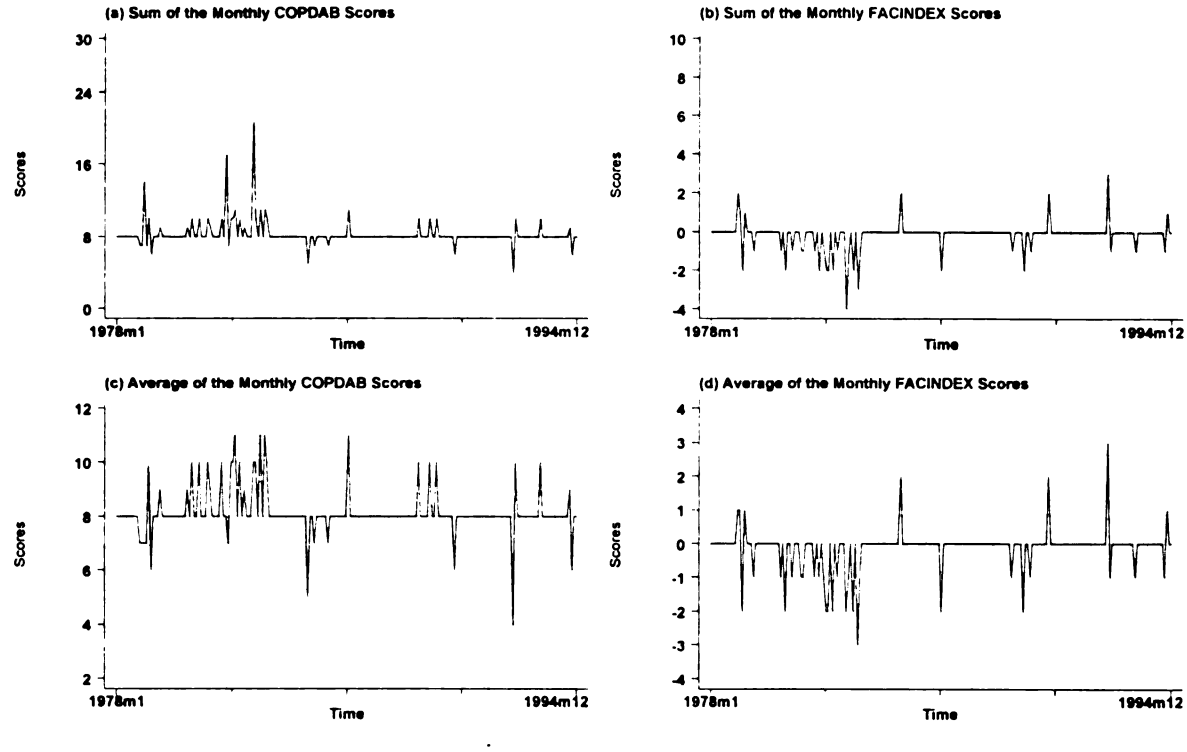

FIGURE 9.3 China to U.S. Acts, 1978-94

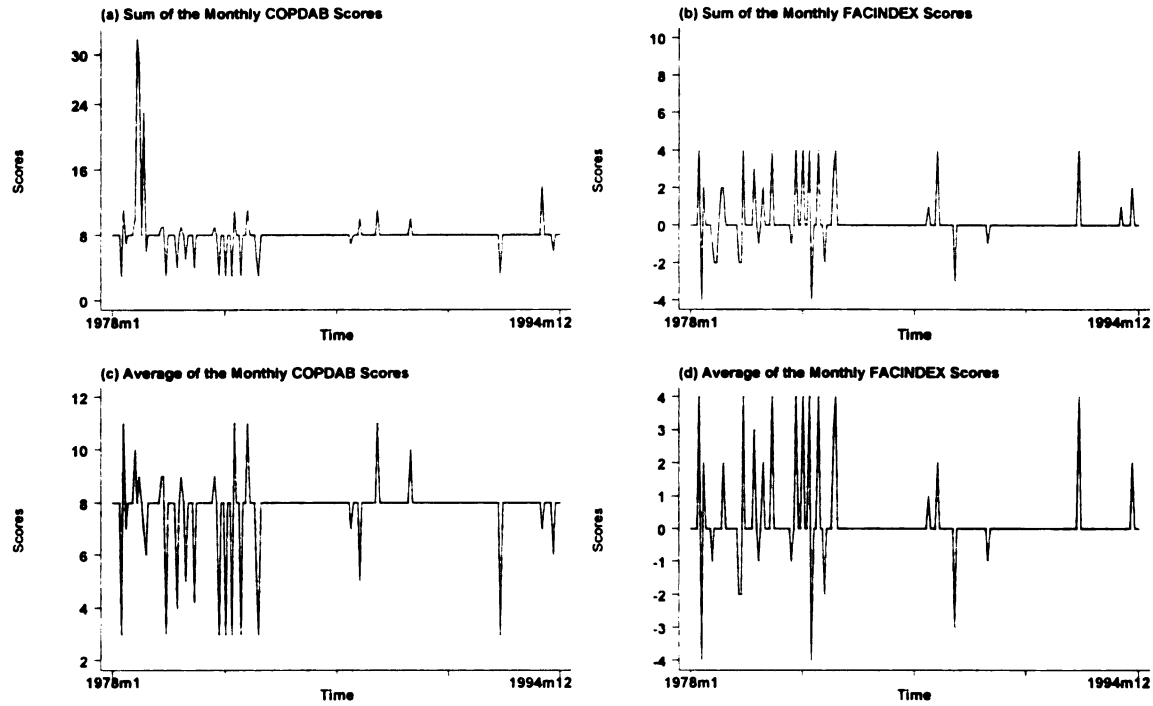

FIGURE 9.4 U.S. to Taiwan Acts, 1978-94

TABLE 9.13 Augmented Dickey-Fuller Test for Unit Roots

UROOT	Y_{US_CH}	Y_{CH_US}	Y_{US_TW}	X_{US_CH}	X_{CH_US}	X_{US_TW}
(C, 0)	-11.75	-14.50	-10.26	-14.07	-13.58	-15.76
(C, 1)	- 7.97	- 8.76	- 7.26	- 8.79	- 8.34	-11.31
UROOT	Z_{US_CH}	Z_{CH_US}	Z_{US_TW}	W_{US_CH}	W_{CH_US}	W_{US_TW}
(C, 0)	-12.76	-13.87	-15.64	-13.82	-13.88	-16.29
(C, 1)	- 8.85	- 8.05	-11.14	- 9.05	- 8.07	-11.53

Note:

1. This table results from the UROOT commands of the EVIEWS package. The option (C, 0) means the inclusion of a constant term, and no lagged differences in the test equation. As for (C, 1), the equation contains a constant term and the first difference of the series lagged once. A trend variable may also be included in the equation.
2. The MacKinnon Critical Values are -3.464 at the 1% level, -2.876 at the 5% level, and -2.574 at the 10% level. All the series above have test statistics that are significant at the .01 level. A large negative value leads to the rejection of the null hypothesis of a unit root and further suggests that the series is stationary.

TABLE 9.14 Comparing Variances Before and After Differencing

	Variance		*Variance*		*Variance*
Y_{US_CH}	21.95	Y_{CH_US}	2.03	Y_{US_TW}	7.76
Y_{US_CH}(D, 1)	35.92	Y_{CH_US}(D, 1)	4.18	Y_{US_TW}(D, 1)	10.74
Y_{US_CH}(D, 2)	106.73	Y_{CH_US}(D, 2)	13.27	Y_{US_TW}(D, 2)	30.84
X_{US_CH}	4.40	X_{CH_US}	.48	X_{US_TW}	1.27
X_{US_CH}(D, 1)	8.75	X_{CH_US}(D, 1)	.91	X_{US_TW}(D, 1)	2.83
X_{US_CH}(D, 2)	27.41	X_{CH_US}(D, 2)	2.84	X_{US_TW}(D, 2)	8.63
Z_{US_CH}	3.06	Z_{CH_US}	.74	Z_{US_TW}	1.54
Z_{US_CH}(D, 1)	5.48	Z_{CH_US}(D, 1)	1.45	Z_{US_TW}(D, 1)	3.39
Z_{US_CH}(D, 2)	16.33	Z_{CH_US}(D, 2)	4.63	Z_{US_TW}(D, 2)	10.36
W_{US_CH}	2.24	W_{CH_US}	.39	W_{US_TW}	1.17
W_{US_CH}(D, 1)	4.36	W_{CH_US}(D, 1)	.76	W_{US_TW}(D, 1)	2.68
W_{US_CH}(D, 2)	13.40	W_{CH_US}(D, 2)	2.43	W_{US_TW}(D, 2)	8.27

Note: (D, 1) = 1st difference; (D, 2) = 2nd difference.

TABLE 9.15 Regression Models of U.S.-China-Taiwan Relations

Model #1: Dependent Variable = Y_{US_CH}

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	2.5928	2.0738	1.2502	.2127
Y_{CH_US}	.3849	.2250	1.7111	.0886
Y_{US_TW}	.3514	.1150	3.0548	.0026

R-squared	.0595	Mean (Dep. Var.)	8.6373
Adjusted R-squared	.0501	S.D. (Dep. Var.)	4.6963
S.E. of regression	4.5771	Akaike information criterion	3.0567
Sum squared residual	4210.87	Schwarz criterion	3.1055
Log likelihood	- 598.25	F-statistic	6.3553
Durbin-Watson statistic	1.9274	Prob(F-statistic)	.0021

Model #2: Dependent Variable = Y_{CH_US}

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	7.8906	.3319	23.7708	.0000
Y_{US_CH}	.0373	.0218	1.7111	.0886
Y_{US_TW}	.0076	.0366	.2074	.8359

R-squared	.0160	Mean (Dep. Var.)	8.2745
Adjusted R-squared	.0062	S.D. (Dep. Var.)	1.4292
S.E. of regression	1.4247	Akaike information criterion	.7225
Sum squared residuals	407.99	Schwarz criterion	.7713
Log likelihood	- 360.16	F-statistic	1.6313
Durbin-Watson statistic	2.0672	Prob(F-statistic)	.1973

Model # 3: Dependent Variable = Y_{US_TW}

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	6.8135	1.1518	5.9156	.0000
Y_{US_CH}	.1263	.0414	3.0548	.0026
Y_{CH_US}	.0282	.1358	.2074	.8359

R-squared	.0460	Mean (Dep. Var.)	8.1373
Adjusted R-squared	.0365	S.D. (Dep. Var.)	2.7953
S.E. of regression	2.7438	Akaike information criterion	2.0333
Sum squared residuals	1513.23	Schwarz criterion	2.0821
Log likelihood	- 493.86	F-statistic	4.8438
Durbin-Watson statistic	1.6519	Prob(F-statistic)	.0088

TABLE 9.15 (cont'd)

Model #4: Dependent Variable = X_{US_CH}

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	.7746	.1515	5.1145	.0000
X_{CH_US}	.0887	.2245	.3949	.6933
X_{US_TW}	.0445	.1366	.3254	.7452

R-squared	.0010	Mean(Dep. Var.)	.7696
Adjusted R-squared	- .0089	S.D.(Dep. Var.)	2.1034
S.E. of regression	2.1128	Akaike information criterion	1.5106
Sum squared residuals	897.25	Schwarz criterion	1.5594
Log likelihood	- 440.55	F-statistic	.1029
Durbin-Watson statistic	1.9817	Prob(F-statistic)	.9023

Model #5: Dependent Variable = X_{CH_US}

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	- .1162	.0499	- 2.3300	.0208
X_{US_CH}	.0087	.0221	.3949	.6933
X_{US_TW}	- .1715	.0412	- 4.1654	.0000

R-squared	.0799	Mean(Dep. Var.)	- .1373
Adjusted R-squared	.0708	S.D.(Dep. Var.)	.6882
S.E. of regression	.6634	Akaike information criterion	- .8060
Sum squared residuals	88.472	Schwarz criterion	- .7572
Log likelihood	- 204.25	F-statistic	8.7296
Durbin-Watson statistic	1.8990	Prob(F-statistic)	.0002

Model #6: Dependent Variable = X_{US_TW}

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	.0891	.0829	1.0750	.2837
X_{US_CH}	.0118	.0364	.3254	.7452
X_{CH_US}	- .4633	.1112	- 4.1654	.0000

R-squared	.0797	Mean(Dep. Var.)	.1618
Adjusted R-squared	.0705	S.D.(Dep. Var.)	1.1310
S.E. of regression	1.0904	Akaike information criterion	.1876
Sum squared residuals	238.97	Schwarz criterion	.2364
Log likelihood	- 305.60	F-statistic	8.7024
Durbin-Watson statistic	2.2044	Prob(F-statistic)	.0002

TABLE 9.15 (cont'd)

Model #7: Dependent Variable = Z_{US_CH}

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	6.6489	1.5787	4.2117	.0000
Z_{CH_US}	.0201	.1471	.1368	.8913
Z_{US_TW}	.0655	.1019	.6431	.5209

R-squared	.0021	Mean(Dep. Var.)	7.3235
Adjusted R-squared	- .0079	S.D.(Dep. Var.)	1.7542
S.E. of regression	1.7611	Akaike information criterion	1.1464
Sum squared residuals	623.36	Schwarz criterion	1.1952
Log likelihood	- 403.40	F-statistic	.2068
Durbin-Watson statistic	1.8084	Prob(F-statistic)	.8134

Model #8: Dependent Variable = Z_{CH_US}

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	9.2799	.4418	21.0035	.0000
Z_{US_CH}	.0046	.0338	.1368	.8913
Z_{US_TW}	- .1491	.0478	- 3.1215	.0021

R-squared	.0462	Mean(Dep. Var.)	8.1520
Adjusted R-squared	.0367	S.D.(Dep. Var.)	.8604
S.E. of regression	.8445	Akaike information criterion	- .3235
Sum squared residuals	143.34	Schwarz criterion	- .2747
Log likelihood	- 253.47	F-statistic	4.8719
Durbin-Watson statistic	1.9725	Prob(F-statistic)	.0086

Model #9: Dependent Variable = Z_{US_TW}

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	10.0931	.8893	11.3490	.0000
Z_{US_CH}	.0313	.0487	.6431	.5209
Z_{CH_US}	- .3102	.0994	- 3.1215	.0021

R-squared	.0481	Mean(Dep. Var.)	7.7941
Adjusted R-squared	.0386	S.D.(Dep. Var.)	1.2424
S.E. of regression	1.2182	Akaike information criterion	.4093
Sum squared residuals	298.28	Schwarz criterion	.4581
Log likelihood	- 328.21	F-statistic	5.0789
Durbin-Watson statistic	2.2383	Prob(F-statistic)	.0071

TABLE 9.15 (cont'd)

Model #10: Dependent Variable = W_{US_CH}

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	.5389	.1081	4.9846	.0000
W_{CH_US}	- .0888	.1759	- .5049	.6142
W_{US_TW}	- .0074	.1009	- .0729	.9419

R-squared	.0013	Mean(Dep. Var.)	.5490
Adjusted R-squared	- .0087	S.D.(Dep. Var.)	1.4996
S.E. of regression	1.5061	Akaike information criterion	.8336
Sum squared residuals	455.92	Schwarz criterion	.8824
Log likelihood	- 371.49	F-statistic	.1294
Durbin-Watson statistic	1.9414	Prob(F-statistic)	.8787

Model #11: Dependent Variable = W_{CH_US}

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	- .0961	.0454	- 2.1153	.0356
W_{US_CH}	- .0143	.0282	- .5049	.6142
W_{US_TW}	- .1502	.0390	- 3.8484	.0002

R-squared	.0698	Mean(Dep. Var.)	- .1275
Adjusted R-squared	.0605	S.D.(Dep. Var.)	.6226
S.E. of regression	.6034	Akaike information criterion	- .9956
Sum squared residuals	73.194	Schwarz criterion	- .9468
Log likelihood	- 184.91	F-statistic	7.5413
Durbin-Watson statistic	1.9617	Prob(F-statistic)	.0007

Model #12: Dependent Variable = W_{US_TW}

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	.1006	.0798	1.2616	.2085
W_{US_CH}	- .0036	.0493	- .0729	.9419
W_{CH_US}	- .4568	.1187	- 3.8484	.0002

R-squared	.0686	Mean(Dep. Var.)	.1569
Adjusted R-squared	.0594	S.D.(Dep. Var.)	1.0850
S.E. of regression	1.0523	Akaike information criterion	.1166
Sum squared residuals	222.58	Schwarz criterion	.1654
Log likelihood	- 298.35	F-statistic	7.4072
Durbin-Watson statistic	2.2777	Prob (F-statistic)	.0008

According to the results of the unit root test in Table 9.13, all the 12 individual series are stationary, and integrated at order zero, namely, following the I(0) process. That is to say, there was no need to apply the differencing techniques to any of the 12 individual series.

To confirm this assessment, I examined the change of variances before and after differencing.[81] As shown in Table 9.14, all the 12 series have an increase in variances after applying first-order or second-order differencing. Since all the series under consideration are stationary, I could carry out a simple regression analysis to examine the triangular relations between the United States, China, and Taiwan. More specifically, I was interested in explaining the relationships between the US → China, China → US, and US → Taiwan acts.

Table 9.15 shows 12 regression models. In Models #1-3, each of the Y series takes its turn as the dependent variable. Models #1 and #3, dealing with U.S. acts toward China and Taiwan, exhibit a good model fit, while Model #2 concerning China → US acts displays a poor model fit. Looking at the significant parameter estimates, I found a positive relationship between Y_{US_CH} and Y_{US_TW}. This implies that when the United States acts friendly toward China, it is more likely to be friendly with Taiwan as well, and vice versa. This finding seems less believable because it is contradictory to what is found in the remaining regression models.

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[81] The comparison of variances can be used to facilitate the research decision of how far the differencing should go, thereby preventing over-differencing. It is also a useful technique for assessing the need for taking logarithms on the individual series and for examining the impact caused by the outliers.

Models #4-12 deal with the series of *W*s, *X*s, and *Z*s. I obtained some consistent results throughout these three subgroups of regression models. First, when the US → China acts serve as the dependent variable, the model fits are extremely poor and the parameter estimates of the other two types of acts are insignificant. This would suggest that the US → China acts cannot be explained by the China → US and US → Taiwan acts considered together. The United States is perhaps more an initiator that takes charge in U.S.-China relations; in other words, the United States is proactive rather than reactive in dealing with China. In addition, the United States seems to consider its relations with Taiwan as a separate issue in U.S.-China relations. From the U.S. perspective, US → Taiwan acts have no bearing on US → China acts.

Second, as can be seen in Models #5, #8 and #11, when China → US acts are used as the dependent variable, the overall model fits are good. The parameter estimates concerning US → China acts are not significant, but the parameter estimates concerning US → Taiwan acts are highly significant, with negative signs in all three models. It may seem strange at first glance that China is responsive to the United States about U.S. acts toward Taiwan and not about U.S. acts toward China. China's behavioral pattern becomes understandable, if one remembers the comment repeatedly made by the top officials in China: The Taiwan problem is the number one issue in Sino-American relations. Yet, based upon the magnitude of the negative coefficients (around -.15) I can say that over the period between 1978 and 1994, China tended to refrain from taking serious measures in response to U.S. acts toward Taiwan.

Third, in Models #6, #9, and #12, when the dependent variable is US → Taiwan acts, the overall model fits are good. As to parameter estimates, the coefficients of US → China acts are not significant, while the coefficients of the China → US acts are significant, with negative signs across the three models. The assertion that China → US acts have a negative impact on US → Taiwan acts, however, is likely to be considered absurd. Statistically, I may find correlations between US → Taiwan acts and China → US acts, but real events support the argument that China → US acts are caused by the US → Taiwan acts. Plenty of recurrent events can be found to demonstrate this point in relations between the United States, China, and Taiwan. The following examples are from the event records of *Foreign Affairs Chronology*:

> January 11, 1982 US approves sale of additional F-5E fighter aircraft to Republic of China (ROC), ...People's Republic of China (PRC) protests decision 1/12 (Council on Foreign Relations 1992, 146).
>
> June 15, 1983 Pan American World Airways resumes passenger service to Taipei, Taiwan; China lodges sharp protest 6/16, cancels Pan Am landing rights in China (Council on Foreign Relations 1992, 175).
>
> September 2, 1992 Despite virtual ban of US arms sales to Taiwan since 1982, President Bush announces plan to sell 150 advanced F-16 fighter jets to Taiwan. China 9/3 denounces Bush's decision, stating that the proposed sale will impair US-China relations (Council on Foreign Relations 1993, 239).

One rarely observes that the United States does something friendly or hostile to Taiwan as a reaction to what China has done to the United States.

TABLE 9.16 Detection of Serial Correlation in Various Regression Models

Model # (Dep. Var.)	Durbin-Watson Test	ACF & PACF	Box-Ljung Statistic	Breusch-Godfrey LM Test (6 lags)
1 (Y_{US_CH})	d = 1.927	Random Walk	Q = 74.245	$n \times R^2 = 15.423$
2 (Y_{CH_US})	d = 2.067	Random Walk	Q = 64.578	$n \times R^2 = 17.328$
3 (Y_{US_TW})	d = 1.652	Random Walk	Q = 44.514	$n \times R^2 = 19.814$
4 (X_{US_CH})	d = 1.982	Random Walk	Q = 51.824	$n \times R^2 = 4.845$
5 (X_{CH_US})	d = 1.899	Random Walk	Q = 60.051	$n \times R^2 = 19.238$
6 (X_{US_TW})	d = 2.204	Random Walk	Q = 35.718	$n \times R^2 = 7.517$
7 (Z_{US_CH})	d = 1.808	Random Walk	Q = 61.062	$n \times R^2 = 6.460$
8 (Z_{CH_US})	d = 1.973	Random Walk	Q = 55.362	$n \times R^2 = 16.377$
9 (Z_{US_TW})	d = 2.238	Random Walk	Q = 41.538	$n \times R^2 = 5.524$
10 (W_{US_CH})	d = 1.941	Random Walk	Q = 61.410	$n \times R^2 = 8.735$
11 (W_{CH_US})	d = 1.962	Random Walk	Q = 50.960	$n \times R^2 = 15.556$
12 (W_{US_TW})	d = 2.278	Random Walk	Q = 40.473	$n \times R^2 = 8.743$

Note:

1. According to Gujarati (1988, 378), the Durbin-Watson test for autocorrelated errors takes on the following criteria:

	Null Hypothesis	*Decision*	*If (After substitution for $\alpha = .05$)*
(i)	No positive autocor.	Reject	$0 < d < d_L$ $(0 < d < 1.748)$
(ii)	No positive autocor.	No decision	$d_L \le d \le d_U$ $(1.748 \le d \le 1.789)$
(iii)	No negative autocor.	Reject	$4 - d_L < d < 4$ $(2.252 < d < 4)$
(iv)	No negative autocor.	No decision	$4 - d_U \le d \le 4 - d_L$ $(2.211 \le d \le 2.252)$
(v)	No autocor., positive or negative	Do not reject	$d_U < d < 4 - d_U$ $(1.789 < d < 2.211)$

"Autocor." is shorthand for "autocorrelation." The critical d_L and d_U values are 1.748 and 1.789, given $n \ge 200$, k' (the number of explanatory variables except the constant term) = 2, and $\alpha = .05$. If $\alpha = .01$, the critical d_L and d_U values are 1.653 and 1.693.

2. The critical values for the Box-Ljung Q-statistic (40 lags, with 39 degrees of freedom) are 54.29, if $\alpha = .05$, and 61.62, if $\alpha = .01$. A large value leads to a rejection of the null hypothesis of white noise.

3. The critical values for the Breusch-Godfrey LM test (six lags, with six degrees of freedom) are 12.59, if $\alpha = .05$, and 16.81, if $\alpha = .01$. A large value would suggest a rejection of the null hypothesis of white noise.

The interpretations above would be compromised if some of the regression assumptions were not met in the twelve models. Since time series data were used, I concentrated on examining whether or not serial correlation is present. Table 9.16 contains the results of four tests on the least square residuals: the Durbin-Watson d-statistic, the ACF and PACF correlograms, the Box-Ljung Q-statistic, and the Breusch-Godfrey LM (Lagrange Multiplier) test (6 lags). There is partial evidence indicating the presence of autocorrelated errors in some models. For instance, at the .05 significance level, Model #11 fails to reject the null hypothesis of white noise in the Breusch-Godfrey LM test, but not in the other three tests.

Because there is no consistent, strong evidence of autocorrelated errors in any of the 12 models, I will not pursue the issue of correction. Various techniques for correcting the serial correlation problem in the regression models can be found in Ostrom (1990), and Pindyck and Rubinfeld (1981).

To what extent do nations interact? As summarized in Zinnes (1980), the empirical findings with regard to this puzzle are mixed, and thus inconclusive. In a study concerning the reciprocity between the United States, the Soviet Union, and China, Goldstein and Freeman (1990, 76) report some evidence in three major event data sets supporting the proposition that US → China and China → US acts are Granger-caused by each other.[82] This is contrary to what I have found in this project—that there is no relationship between US → China and China → US acts. Instead, I found that US →

[82] Granger-causality is a terminology in the vector autoregression (VAR) method. See Freeman (1983), and Freeman et al. (1989) for detailed discussions.

Taiwan acts have a negative impact on China → US acts, while these two types of acts have no bearing on the U.S. policy toward China. More importantly, I have established a strong link between the COPDAB and FACINDEX scales, which measure the cooperation/conflict phenomenon in a like manner.

9.3 FUTURE STUDIES

Several directions could be followed in future studies. First, everything that has been done in this study, including the model, data source, and methodology, is ready for duplication, and could be applied to the foreign policy behavior of another nation, e.g., the Soviet Union, Japan, or Israel. In the context of a meaningful pairing, a bi-nation comparison could then be executed. As more nations were included in the framework used in this project, the comparative study could be extended to small vs. large nation-states, East vs. West, or North vs. South. If there were generous grants to support a cross-national project, every piece of information in *Foreign Affairs Chronology* could be utilized to form a major event data set that covers the period from 1978 to 1994. Should this be done, I suggest using *Keesing's Contemporary Archives* as a supplementary news source to minimize source bias.

Second, the extension of time beyond the seventeen-year period would provide a more complete picture of the long-term patterns in U.S. foreign policy. *Foreign Affairs Chronology* was started in 1978, but unfortunately was discontinued after 1994. Other feasible sources of event records are (1) text files in the major event data sets, such as COPDAB, WEIS, and CREON, (2) electric news sources such as the Nexis data base and

the Reuters wire service, and (3) traditional news sources such as the *New York Times* and the *Wall Street Journal*. The latter is the least favorable, because typing event records into a text file is laborious and time-consuming. The addition of event records before 1978 or after 1994 would allow for an examination of the predictive validity of this project.

Third, with little effort, event records extracted from *Foreign Affairs Chronology* and stored in a text file could be analyzed by existing machine-coding programs, such as the Kansas Event-Data System (KEDS). The KEDS program is designed to code events by the WEIS classification scheme (Gerner et al. 1994; Schrodt 1993). Without a doubt, machine coding will be increasingly popular in future event studies, because it is cheap, fast, and reliable. Caution is advised, however, in applying the KEDS program to the text file of this project. First, since different projects ask different questions and thus use different classifying schemes, some work needs to be done in finding common ground for a meaningful comparison. Second, the machine-coding programs, even though reliable, may not be sophisticated enough to detect the precise meaning of an event. The following event record provides an example of this problem: "May 30, 1982 Senate majority leader Howard H. Baker, Jr. visits PRC to discuss strained US-PRC relations; says Chinese leaders 'took my hide off' over issue of arms sales to ROC" (Council on Foreign Relations 1992, 146). The machine-coding programs might not be able to identify the idiomatic meaning of "took my hide off" in the context of a China→ U.S. act. Perhaps, such semantic difficulties can be overcome by future machine-coding programs.

Fourth, additional explanatory variables can be included. Appendix IV contains a list of possible candidates. Notably, in addition to the size of nations (i.e., national power), the type of nations could serve as a representative measure of the actor dimension. The Democracy/Autocracy index in the Polity III and IIId data set is the most popular among the measures of regime types (Gleditsch and Ward 1997; Jaggers and Gurr 1995; McLaughlin et al. 1998). Moreover, issue salience, apart from the negotiability of issues, could serve as a leading indicator of the issue dimension. Gamson and Modigliani (1971, 128-9) suggest the use of headline size to measure the magnitude of an event, while Meernik (1991, 212) proposes an evaluation of the length of media coverage to gauge the salience of an event.

Finally, future studies could be extended to account for behavioral change by the target nation, i.e., policy outcome. Doing so would increase the understanding of the effectiveness of various foreign policy instruments. In other words, more emphasis could be placed on the evaluation of policy performance, which is a neglected area in foreign policy analysis (Raymond 1987; Smith and Clarke 1985; Vasquez 1986). I do not wish to witness foreign policy analysis becoming a heuristic product of the ivory tower and having nothing to do with solving substantive problems around the world.

CONCLUSION

In this chapter, I assess the reliability and validity of this study. I concede that source biases exist in *Foreign Affairs Chronology*. As compared to the event records in *Keesing's Contemporary Archives* for the first quarter of 1989, the news source of my data set appears to leave out some rather significant events. Moreover, traces of evidence

reveal that the different editing styles of various editors led to different frequency distributions of key variables in this study. The inclusion of *Keesing's Contemporary Archives* as an additional news source would certainly help reduce the degree of source bias.

The assessment of intercoder reliability shows some encouraging results. The basic components of an event, such as the date, the actor, and the target, exhibit a high degree (at least 95%) of observed agreement between two coders. Furthermore, all the key variables reveal at least a *moderate* degree of intercoder agreement. These encouraging results strengthen my confidence in the classification scheme of this study.

The overall assessment of validity indicates that this study does better in guarding against the threats to internal validity than against the threats to external validity. I have reservations about generalizing my findings about U.S. foreign policy behavior to other nations' behavior. Moreover, I obtained strong evidence to support the contention that the FACINDEX scales is as good as the COPDAB scale in measuring cooperation/conflict phenomenon between two nations. In investigating the triangular relations between the United States, China, and Taiwan, the findings suggest that US → Taiwan acts have an impact on China → US acts.

In the last section, I provide several plausible leads for improving or extending this study. For practical reasons, I do not go so far as to propose a relaxation of the unitary-actor or rationality assumption. Unless one has a firm grip on what a simple model can do, introducing a complex model may produce confusion rather than clarity.

CHAPTER TEN

CONCLUSION

> It is time to give up the notions of so-called truth, objectivity, progress, and so forth, because questions concerning these notions cannot be answered. Whatever foundation of knowledge there is is in flux and changing on a daily basis. Every day we think of what our community needs and what makes our community better off. What we believe and how we act is evaluated according to the consequences of our actions...[83]

> [T]he crusading motif has been as much overstated as the isolationist one, ...the rhetorical excesses of American bellicosity have matched those of American pacifism, and ...the policy actually pursued has been rather consistently set by the pragmatic device of deciding as you go and doing what you seem to have to do (Claude 1986, x).

Professor Cherryholmes's succinct characterization of American pragmatism has little to do with my empirical approach toward the central research question. It is closely related, however, to the subject of my inquiry—American foreign policy. In the making of U.S. foreign policy, pragmatism seems to be the middle ground between idealism and realism, or between isolationism and internationalism (globalism). Thus far, very few scholars, e.g., Claude (1986, 1993) and Crabb (1985), have attempted to analyze foreign policy behavior from the pragmatic perspective. One obvious reason is that pragmatism is so fluid as to be subject to many meanings. The pragmatist "device of deciding as you go," as suggested by Professor Claude, is difficult to analyze. It is my contention,

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[83] This quote is based on Professor Cleo H. Cherryholmes's lecture notes on "Philosophy of Social Science and Social Criticism," a course taught at Michigan State University in the fall of 1989.

however, that one might be able to observe and assess a pragmatist's behavioral pattern over a long period of time if the pragmatist keeps taking action.

Several findings of this study seems to be in agreement with the pragmatic view of American foreign policy. First, the more negotiable the issue is in an event, the more likely the United States is to select costly policy instruments. This is consistent with pragmatists' belief in a pluralistic universe and their advocacy of evolutionary, gradual changes. Second, the more powerful the target nation, the less likely the United States is to take strong measures. High-cost, positive tools, such as economic aid or arms sales, directed toward a more powerful nation, might eventually undermine the American's competitive edge in the race for national power. High-cost, negative tools, such as economic sanctions or armed conflict, directed toward another major power, might cause an intense confrontation so contagious as to escalate to a trade war or a breakdown of peace in the international system. In a pragmatist's view, the United States should not be too easy or too hard on other major powers. Third, the more powerful the target nation, the more likely the United States is to express negative affect. A pragmatist would contend that the United States, as a superpower, should not hesitate to verbally attack other major powers to keep them in check, as long as these negative expressions do not lead to the use of high-cost policies.

The fundamental purpose of the United States Constitution is

> ...to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity....

The object of American foreign policy derived from this purpose is, however, not so clear. In particular, the realist notion of "national interest" is so ambiguous that realists can claim that almost every policy is in the national interest when they see fit. The findings stated above can be easily accommodated to a realist frame of reference. A realist with moderate views would make the following argument: The advent and mass production of nuclear weapons demanded prudence. U.S. foreign policymakers came to realize that a nuclear war between the two superpowers would be a global catastrophe. Avoiding conventional wars or armed conflicts among major powers could prevent a nuclear war. In short, a realist could declare that it would be in the U.S. *national interest* to do what my findings above have suggested. Because existent theories offer little to explain, or generally are unclear about, how a nation would or should act in response to events, I am unable confidently to establish a linkage between my findings and any of the major theories in international relations.

Next I will selectively sum up the findings in Chapters 5 through 9.

Chapter 5 compares three power equations. I demonstrate that Model 2 (= Critical Mass + GNP + Military Expenditure) has more theoretical relevance and better strategic implications than the other two models. I argue that the capacity (comprising intangible factors) of a nation contributes to its achieving and maintaining the level of productivity and force (i.e., GNP and military expenditure). Therefore, although Model 2 does not include a capacity index, it yields a valid measure of national power.

Chapter 6 presents frequency distributions of the variables stemming from the coding of event records in *Foreign Affairs Chronology*. American foreign policy exhibits selective attention, particularly, in the specific nations and the number of nations with

which the United States frequently interacts. U.S. foreign policy is a product of both constancy and contingency—that is, the United States frequently interacted with major players, friends and enemies alike, and it promptly responded to key actors in the crisis situations which were perceived as vital to its national interest.

In Chapter 7, contingency tables are constructed to examine the relationships between variables. Most significantly, some evidence in the three-way contingency table analysis suggests that the causal mechanism between issue, actor and statecraft displays a moderated or specified relationship—i.e., the original relationship sustains or becomes stronger when the controlling variable is set at a certain level. Accordingly, there is some truth in saying that "Power is issue-specific," or "Issues are power-specific." Moreover, the subsample analysis proves to be a useful tool for exploring the morality of U.S. foreign policy behavior.

Chapter 8 applies various multivariate methods to the full model. I discovered that the dummy variable distinguishing between verbal and physical actions is misspecified because it generates some inconsistent results as compared to the statecraft variable. At the end of Chapter 8, I discuss the relative importance of explanatory variables and formulate a group of propositions based upon the results of multivariate analysis. Across various full models concerning American foreign policy behavior, the most important explanatory variables are issue-types classified by the degree of negotiability (NEGOTIAB), the target's relative capability (RCAPFRA2), the end of the Cold War era (PCOLDWAR), the number of target nations involved (MULTAR), and the proximity of the problem location (DIRECT). The less important explanatory variables are the number of types of statecraft used (MULTOOLS) and the presence of multiple

issues (MULISSUE), while the least important are presidential election years (ELECTION) and the presidential party (PARTY).

Here I focus on the answer to the central research question in this study. According to my findings, the American selection of statecraft is both issue-specific and actor-specific—that is, both the issue and actor dimensions are essential in U.S. foreign policy decisionmaking. The results of applying standardization techniques in several full models indicate that, across the board, the relative capability of target nations is more important than the negotiability of issues. Too much emphasis should not be placed on this conclusion, however, partly because these two variables are in sharp contrast to each other, and partly because the discrepancies in their standardized coefficients are not sufficiently large.

In Chapter 9, I demonstrate that there is some degree of source bias in *Foreign Affairs Chronology*. For future studies, I recommend using *Keesing's Contemporary Archives* as an additional news source. Moreover, I discuss the test of intercoder reliability, which indicates at least a moderate degree of intercoder agreement for all the key variables. This encouraging result gives me some confidence in the coding scheme designed for this study. In addition, I demonstrate that the FACINDEX scale is as valid as the COPDAB scale in measuring the cooperation/conflict phenomenon.

Next I will elaborate possible contributions of this project to the study of foreign policy or international relations.

First, the commonsensical approach used to examine U.S. foreign policy in this project reveals some interesting concepts behind the who-did-what-to-whom formula. In exploring the subject, I intended to strike a balance between imagination and logic.

Through analogous thinking, I was able to link the selection of foreign policy instruments to everyday decision making at the office and to identify the issue and actor dimensions as the central components of foreign policy decision making. This led to a simplified, three-variable foreign policy model, consisting of power relations, issue-type, and the costliness of statecraft. Following the logic of empirical inquiry, I developed a research design to examine the explanatory power of the framework. I made a great effort to reduce, although I could not eliminate, ambiguities and uncertainties at each stage of the research process. This makes me feel more confident about the claims based on the results of this project.

Second, this project employed the concept of statecraft and addressed its potential utility in studying foreign policy behavior. As shown earlier, statecraft has been frequently used as an organizing concept in many book-length works, but its richness has not been theoretically and empirically explored. On one hand, this concept is inherently ordinal in nature in terms of policy cost. Foreign policy analysts often complain about the difficulty of finding variables that are both theoretically rich and quantifiable beyond the nominal level. As demonstrated in this study, the statecraft concept is valuable, partly because it facilitates the study of foreign policy in a cost-benefit context, and partly because using it as the dependent variable allows for applications of more sophisticated statistical methods. On the other hand, the statecraft concept presents a comprehensive range of foreign policy choices, similar to those decision makers or practitioners have at hand in dealing with constant problems with other nations or in responding to slowly emerging or abrupt external events. Instead of focusing on a single foreign policy behavior, such as economic sanctions or the use of force, the statecraft concept is

multidimensional and thus yields a more realistic representation of foreign policy decision making.

Third, in this project I adopted a hands-on approach to measuring national power. I would not have chosen to do so if there were available and sound data regarding national power to meet my research needs. In the process of measuring national power, I found two major problems that undermined the quality of data. One problem was the inconsistency among agencies providing aggregate statistics of nations. Sometimes there were tremendous discrepancies between estimates from different data sources measuring a specific indicator of a nation in a certain year. Additionally, not all data-collection agencies supplied the appropriate method of monetary conversion for the application of their data. The other problem was the number of missing values, particularly in the data for military expenditure and GNP. I demonstrated that the replacement of missing values with the average scores of the series was economical and acceptable. After appraising three power equations based on strategic analysis and real-world implications, I was able to determine the superiority of Model 2 over Models 1 and 3. I have shown, at the very least, that national power is a quantifiable and thus viable concept in the study of foreign policy or international relations.

Fourth, in this project I made extra efforts to develop detailed typologies of issues and foreign policies. The strategy of deriving small issue items and policy items allows for a mapping between issues and the specific policies most frequently used. Such a cross-classification explores the set patterns (or the unspoken rules) that prevailed in daily decision making about foreign affairs. For example, U.S. policymakers rarely took severe measures (e.g., used economic or military instruments) to deal with environmental

issues. Another example is that American policymakers in charge of the control of nuclear weapons avoided "fighting fire with fire" and strived instead for diplomatic solutions with the Soviet Union. The strategy of developing detailed typology is conducive to narrowing the gap between research and the practice of foreign policy.

Finally, the most important contribution of this project is the construction of the FACINDEX scale to measure the cooperation/conflict phenomenon. I started this project with a partial specification of foreign policy behavior. In the research process, I found that the concept of statecraft represents merely the magnitude of foreign policy behavior, and a more complete picture requires the concept of affect to represent its orientation. The FACINDEX scale was a valuable discovery in the late stages of this project. For future studies, I suggest two directions: First, one can substitute the FACINDEX scale as a summary measure of foreign policy behavior for the statecraft variable, as shown in Figure 2.4. Second, one can focus on the two-dependent-variable models, as illustrated in Figure 7.2.c.

In closing, I reiterate that the study of foreign policy or international relations is extremely challenging. The subject is important, yet complex; the theories are pluralistic, yet weak; and the data are plentiful, yet poor. Continuous efforts are required to create more coherent theories, to generate more and better data, and to gain a more complete understanding of the subject.

APPENDIX

APPENDIX I

A CODEBOOK OF EVENTS DESCRIPTION

Source: *Foreign Affair Chronology*, 1978-94

Time Period: January 1978 to December 1994

Coverage: U.S.-related Foreign Events

Description: On the right side are categories and their corresponding codes, and on the left side are raw frequencies and percentages.

Cols. 1-6 DATE: Year, month, and day of the event

Col. 7 NONCASE: Case qualification

N	%	Code
3,689	73.6	1 = It is a case when the following conditions are satisfied: (1) the sender is the United States; (2) the target is another nation-state, with the exception of the EC; and (3) there are no more than 7 targets if multiple targets are present.
332	6.6	2 = The sender is not the United States.
539	10.8	3 = The target is the United States and the sender is another nation-state.
62	1.2	4 = The target is not nation-state but the UN, its affiliates (e.g., UNESCO, IMF, ICJ, etc.), NATO, or other regional blocs or organizations.
25	.5	5 = More than 7 targets.
97	1.9	6 = Domestic event; the event is in principle concerned with policy debates or the policymaking process, despite showing external reference to some extent.

71	1.4	7 = Indirect case; the event implies "U.S. action" but secondary in the context.
199	4.0	8 = Ambiguous; not enough information.
0	0	9 = Missing.

Cols. 8-10 ACTOR: Sender nation

N	%	Code	
3,689	100	002	US/U.S./U.S.A. (United States of America)

Cols. 11-13 TARGET: Target nation

N	%	Code	
North and Central America:			
0	0	002	US/U.S./U.S.A. (United States of America)
0	0	005	Virgin Islands of the United States *US*
0	0	006	Puerto Rico *US*
0	0	010	Greenland *Danish*
0	0	011	Faroe Islands *Danish*
82	2.2	020	Canada
0	0	022	St. Pierr and Miquelon *France*
0	0	030	Bermuda *UK*
0	0	031	Bahamas
0	0	032	Anquilla *UK*
0	0	033	Aruba *Dutch*
0	0	034	British Virgin Islands *UK*
0	0	035	Cayman Islands *UK*
0	0	036	Navassa Island *US*
0	0	037	Turks and Caicos Islands *UK*
73	2.0	040	Cuba
37	1.0	041	Haiti
1	.0	042	Dominican Republic
5	.1	051	Jamaica
1	.0	052	Trinidad-Tobago
2	.1	053	Barbados
0	.0	054	Dominica
9	.2	055	Grenada
0	0	056	St. Lucia
1	.0	057	St. Vincent and Grenadines
1	.0	058	Antigua and Barbuda

0	0	059	Montserrat *UK*
1	.0	060	St. Kitts-Nevis
0	0	065	Guadeloupe
0	0	066	Martinique *France*
0	0	068	Netherlands Antilles *Dutch*
42	1.1	070	Mexico
3	.1	089	Belize
14	.4	090	Guatemala
17	.5	091	Honduras
71	1.9	092	El Salvador
104	2.8	093	Nicaragua
11	.3	094	Costa Rica
37	1.0	095	Panama

South America:

15	.4	100	Colombia
9	.2	101	Venezuela
1	.0	110	Guyana
1	.0	111	Suriname
0	.0	120	French Guiana *France*
6	.2	130	Ecuador
12	.3	135	Peru
16	.4	140	Brazil
15	.4	145	Bolivia
2	.1	150	Paraguay
21	.6	155	Chile
26	.7	160	Argentina
0	0	161	Falkland Islands *UK*
0	0	162	South Georgia and the South Sandwich Islands *UK*
3	.1	165	Uruguay

Western Europe:

124	3.4	200	UK (United Kingdom)/ Great Britain/ England
0	0	201	Isle of Man *UK*
0	0	202	Guernsey *UK*
0	0	203	Jersey *UK*
2	.1	205	Ireland
6	.2	210	Netherlands
9	.2	211	Belgium
3	.1	212	Luxembourg
90	2.4	220	France
0	0	221	Monaco
0	0	223	Liechtenstein

3	.1	225	Switzerland
10	.3	230	Spain
0	0	231	Gibraltar *UK*
0	0	232	Andorra
5	.1	235	Portugal
65	1.8	255	West Germany (Federal Republic of Germany)
23	.6	260	Germany (United)
10	.3	265	East Germany (Democratic Republic of Germany)
39	1.1	290	Poland
39	1.1	299	EC/EEC/EU

Eastern Europe, Scandinavia, and the Mediterranean:

5	.1	305	Austria
9	.2	310	Hungary
9	.2	315	Czechoslovakia
1	.0	316	Czech Republic
0	0	317	Slovakia
54	1.5	325	Italy
8	.2	328	Vatican
0	0	331	San Marino
1	.0	338	Malta
0	0	339	Albania
11	.3	342	Serbia & Montenegro
1	.0	344	Macedonia
8	.2	345	Yugoslavia
10	.3	346	Bosnia-Herzegovina
3	.1	347	Croatia
1	.0	348	Slovenia
10	.3	350	Greece
4	.1	352	Cyprus
5	.1	355	Bulgaria
1	.0	358	Georgia
0	0	359	Kyrgyzstan
11	.3	360	Romania
1	.0	361	Moldova
1	.0	362	Armenia
44	1.2	363	Russia
2	.1	364	Azerbaijan
619	16.8	365	Soviet/USSR (Union of Soviet Socialist Republics)
4	.1	366	Estonia
4	.1	367	Latvia
4	.1	368	Lithuania
12	.3	369	Ukraine
3	.1	370	Belarus/Byelorussia

9	.2	371	Kazakhstan
1	.0	372	Turkmenistan
1	.0	373	Tajikistan
1	.0	374	Uzbekistan
2	.1	375	Finland
3	.1	380	Sweden
5	.1	385	Norway
0	0	386	Jan Mayen *Norway*
0	0	387	Svalbard *Norway*
4	.1	390	Denmark
2	.1	395	Iceland

Central and Western Africa:

0	0	403	Sao Tome and Principe
0	0	404	Guinea-Bissau
1	.0	420	Gambia
1	.0	430	Cape Verde
1	.0	432	Mali
2	.1	433	Senegal
0	0	434	Benin (Dahomey)
0	0	435	Mauritania
2	.1	436	Niger
2	.1	437	Ivory Coast
1	.0	438	Guinea
1	.0	439	Burkina Faso (Upper Volta)
1	.0	440	Equatorial Guinea
7	.2	450	Liberia
1	.0	451	Sierra Leone
1	.0	452	Ghana
0	0	461	Togo
1	.0	471	Cameroon
7	.2	475	Nigeria
0	0	481	Gabon
1	.0	482	Central African Republic
6	.2	483	Chad
0	0	484	Congo (Brazzaville)
6	.2	490	Zaire (Belgian Congo)
24	.7	495	Angola

Southern and Eastern Africa:

6	.2	500	Uganda
6	.2	501	Kenya
0	0	510	Tanzania

1	.0	516	Burundi
2	.1	517	Rwanda
31	.8	520	Somalia
0	0	522	Djibouti
9	.2	530	Ethiopia
0	0	531	Eritrea
3	.1	551	Zambia
35	.9	552	Zimbabwe (Rhodesia)
1	.0	553	Malawi
7	.2	554	Mozambique
85	2.3	560	South Africa
14	.4	561	Namibia
1	.0	570	Lesotho
0	0	571	Botswana
0	0	572	Swaziland
0	0	580	Madagascar (Malagasy Republic)
0	0	581	Comoros
0	0	582	Bassas da India *France*
0	0	583	Europa Island *France*
0	0	584	Glorioso Islands *France*
0	0	585	Reunion *France*
0	0	586	Heard Island and McDonald Islands *Australia*
0	0	587	Mayotte *France*
0	0	588	St. Helen *UK*
0	0	589	Tromelin Island *France*
0	0	590	Mauritius
0	0	591	Seychelles
0	0	592	Juan de Nova Island *France*

Middle East and North Africa:

10	.3	600	Morocco
0	0	609	Western Sahara
4	.1	615	Algeria
3	.1	616	Tunisia
41	1.1	620	Libya
9	.2	625	Sudan
109	3.0	630	Iran
3	.1	632	Qatar
16	.4	640	Turkey
82	2.2	645	Iraq
0	0	646	Iraq-Saudi Arabia Neutral Zone
87	2.4	651	Egypt (United Arab Republic)
35	.9	652	Syria
56	1.5	660	Lebanon

30	.8	663	Jordan
37	1.0	664	West Bank or PLO
239	6.5	666	Israel
48	1.3	670	Saudi Arabia
3	.1	672	Bahrain
4	.1	673	United Arab Emirates (Trucial Coast)
3	.1	678	North Yemen(Sanaa)/Yemen Arab Republic
0	0	679	Yemen (United)
1	.0	681	South Yemen(Aden)/ People's Democratic Republic of Yemen
13	.4	690	Kuwait
5	.1	698	Oman (Muscat)

East and South Asia:

13	.4	700	Afghanistan
131	3.6	710	China/People's Republic of China
2	.1	712	Mongolia
40	1.1	713	Taiwan (Republic of China)
4	.1	720	Hong Kong *UK*
0	0	721	Macau *Portugal*
18	.5	731	Korea (North)
53	1.4	732	Korea (South)
143	3.9	740	Japan
21	.6	750	India
0	0	753	British India Ocean Territory *UK*
0	0	754	Cocos (Keeling) Islands *Australia*
0	0	755	Paracel Islands
0	0	756	Spratly Islands
0	0	757	French Southern and Antarctic Lands *France*
0	0	760	Bhutan
23	.6	770	Pakistan
1	.0	771	Bangladesh (East Pakistan)
1	.0	775	Burma (Myanmar)
2	.1	780	Sri Lanka (Ceylon)
0	0	790	Nepal

South East Asia and the Pacific:

13	.4	800	Thailand
21	.6	811	Kampuchea (Cambodia)
4	.1	812	Laos
55	1.5	819	Vietnam/Republic of Vietnam
1	.0	820	Malaysia
8	.2	830	Singapore
2	.1	835	Brunei

45	1.2	840	Philippines
0	0	841	Christmas Island *Australia*
7	.2	850	Indonesia
0	0	860	East Timor
11	.3	900	Australia
0	0	901	Papua-New Guinea
10	.3	920	New Zealand
0	0	925	Cook Islands *New Zealand*
0	0	930	New Caledonia *France*
0	0	931	Ashmore and Cartier Islands *Australia*
0	0	932	Baker Island *US*
0	0	933	Clipperton Island *France*
0	0	934	Coral Sea Islands *Australia*
0	0	935	Vanuatu
0	0	936	Howland Island *US*
0	0	937	Jervis Island *US*
0	0	938	Johnston Atoll *US*
0	0	939	Kingman Reef *US*
0	0	940	Solomon Islands
0	0	941	Nauru
0	0	942	Niue *New Zealand*
0	0	943	Norfolk Island *Australia*
0	0	944	Palmyra Atoll *US*
0	0	945	Kiribati
0	0	946	Pitcairn Islands *UK*
0	0	947	Tokelau *New Zealand*
0	0	948	Tuvalu
0	0	949	Wake Island *US*
2	.1	950	Fiji
0	0	951	Wallis and Futuna *France*
0	0	952	Midway Islands *US*
0	0	955	Tonga
0	0	960	French Polynesia *France*
0	0	961	Bouvet Island *Norway*
5	.1	981	Federated States of Micronesia *US*
5	.1	982	Marshall Islands *US*
1	.0	983	Palau (Trust Territory of the Pacific Islands) *US*
1	.0	984	Northern Mariana Islands *US*
0	0	985	Guam *US*
0	0	990	Western Samoa
0	0	991	American Samoa *US*

NOTE: In addition to nation-states, the list includes quasi-sovereign states, areas under trusteeship, and occupied or undetermined territories. Names included within parentheses are alternative or earlier names for the given target (state or other

entity); those within asterisks are the states within which a given nonsovereign target is located, or the states exercising authority there. This classification of regions does not pinpoint the exact locations of oceanic islands. The listing of nation names and their corresponding codes generally follows the design of the COPDAB project (Azar 1993). Additional sources such as the Polity III or IIId project (Jaggers and Gurr 1995; McLaughlin et al. 1998), and the standardized list by Russett et al. (1968) are used in a few instances.

Col. 14 PROPAGAN: Presence of propaganda instruments

N	%	Code
1,699	46.0	1 = Yes
1,990	54.0	0 = No

Cols. 15-17 PROPITEM: Primary propaganda instrument used

N	%	Code
		Positive propaganda instruments:
30	1.8	101 Praise (This category includes expressions of gratitude and ceremonial salutations [hail/applaud/congratulate].)
1	.1	102 Condole (The sender expresses condolence, sympathy, distress, etc.)
1	.1	103 Send seasonal greetings
58	3.4	105 Give verbal support; endorse other's policy or position (approve /welcome move)
23	1.4	111 Promise own policy support without indicating specific positive sanctions (pledge)
9	.5	112 Promise policy support with diplomatic actions or efforts specified
54	3.2	113 Promise policy support with economic positive sanctions (e.g., aids or materials) specified
45	2.7	114 Promise policy support with force or other military assistance specified
0	0	116 Promise future support action
32	1.9	118 Assure/reassure (This category is used for expressions or reiterations of earlier pledges [reaffirm/repeat/confirm commitment].)

19	1.1	121 Make substantive verbal agreement
32	1.9	122 Agree to future action or procedure; agree to meet or negotiate
0	0	126 Request or ask for information
12	.7	127 Request or ask for policy assistance or support without specifying exact means
6	.4	128 Request or ask for diplomatic assistance (This includes bids for United Nations membership and requests for asylum [request/call for action].)
8	.5	129 Request or ask for economic assistance
10	.6	130 Request or ask for military assistance
4	.2	131 Appeal to; entreat; plead for help (This category applies to requests made from a distinctly suppliant [humble] position; that is, the actor nation pleads for aid or support.)
4	.2	135 Apply negative propaganda tools (condemn, reject, etc.) to rebels or dissidents
1	.0	137 Withdraw threats or harsh comments made earlier
83	4.9	139 Comment on situation—optimistic (This category is used only when the actor explicitly expresses the feeling that the situation is favorable.)

Neutral or ambiguous propaganda instruments:

107	6.2	141 Offer proposal (initiate/suggest/recommend/table a proposal)
55	3.2	143 Urge action or policy
342	20.1	145 Explain policy or future position (This category is used when governments express their goals, hopes, policies, or future plans to others [announce/declare].)
0	0	146 Decline to comment explicitly (This category is reserved for an expressed "decline to comment" statement by an official spokesperson. It does not include a reported "failure to comment.")

3	.2	147 Comment on situation with mixed (both positive and negative) expression
164	9.7	148 Comment on situation—neutral (report/release/confirm/disclose information)

Negative propaganda instruments:

157	9.2	152 Comment on situation—pessimistic (This category is used only when the actor explicitly expresses the feeling that the situation is adverse or foreboding.)
41	2.4	155 Reject or turn down proposal (dismiss/rebuff plan)
18	1.1	157 Refuse, oppose; refuse to allow (block/bar)
1	.1	159 Joke; mock; ridicule
0	0	161 Make complaint (not formal)
29	1.7	163 Express concerns
6	.4	167 Deny an accusation
11	.6	169 Deny attributed policy, action, role or position
155	9.1	171 Criticize; charge; blame; disapprove (accuse /rebuke /assail /condemn /deplore /dispute /attack /press attacks)
41	2.4	173 Denounce; denigrate; abuse (This category often applies when derogatory adjectives embellish the accusation.)
18	1.1	174 Repeat previous criticism; stand firm on early policies unfavorable to the target
20	1.2	177 Issue order or command; insist; demand compliance
42	2.5	179 Give warning
7	.4	181 Threaten without indicating specific negative sanctions
10	.6	182 Threaten with specific diplomatic negative sanctions (suggest /propose /imply such orientation)

23	1.4	183 Threaten with specific economic negative sanctions (suggest /propose /imply such orientation)
15	.9	184 Threaten with force or other military policies specified (suggest /propose /imply such orientation)
2	.1	186 Apply positive propaganda tools (hail, give verbal support, etc.) to rebels or dissidents
0	0	198 Others (propaganda instruments not specified above)
1,990	--	199 Missing

Col. 18 DIPLOMAC: Presence of diplomatic instruments

N	%	Code
2,232	60.5	1 = Yes
1,457	39.5	0 = No

Cols. 19-21 DIPLITEM: Primary diplomatic instrument used

N	%	Code

Positive diplomatic instruments:

0	0	201 Yield to demand or order
1	.0	202 Make diplomatic concession to cooperate; yield position
5	.2	203 Admit wrongdoing; retract statement; apologize
12	.5	205 Give state invitation; invite to meet in general
4	.2	206 Grant diplomatic privilege, e.g., special visa
13	.6	207 Grant diplomatic recognition, i.e., normalization
0	0	208 Establish de facto relations
6	.3	209 Take joint diplomatic action, e.g., present joint proposal, set up task force or commission
12	.5	210 Release or return persons

28	1.2	211 Receive or admit persons, e.g. refugees, boat people, immigrants, the accused
2	.1	212 Exchange persons (e.g., alleged spies) based on mutual consent
3	.1	213 Reopen embassy; resume diplomatic relations
34	1.5	214 Participate in diplomatic activities such as banquets, ceremonies, commemorations, funerals
19	.9	215 Issue joint communiqué
217	9.7	216 Sign accord or agreements (establish/initial)
16	.7	217 President (or head of state) signs law, legislation or executive order, or vetoes bill
14	.6	218 Treaty takes effect or enters into force; signatories start observing the treaty (abide by agreement)
1	.0	219 Warships visit port
169	7.6	220 Visit; go to (head of state, president, V.P., first lady, ex-president)
190	8.5	221 Visit; go to (non-head of state, Senate, Congress, ministerial-level officials or below)
133	6.0	222 Receive visit; host (head of state, president, V.P., etc.)
34	1.5	223 Receive visit; host (non-head of state, Senate, Congress, etc.)
186	8.3	224 Hold formal meeting with agreement, results or progress
122	5.5	225 Hold summit meeting between leaders; hold annual bilateral conference
51	2.3	226 Confer, consult, meet with leaders or high-level officials
7	.3	227 Increase, resume, open diplomatic dialogues; establish communication channels (e.g., hot line) for dialogues between leaders or high-level officials; send notes or letters through ambassadors
5	.2	228 Apply negative diplomatic tools to rebels or dissidents
10	.4	229 Certify nation; grant waiver

15	.7	230 Have trial or court decision, or commission arbitration in favor of the target nation, e. g., reject complaint
82	3.7	231 Senate and/or House vote in favor of the target nation, e.g., pass foreign aid legislation
2	.1	232 Delay negative diplomatic action against the target nation
35	1.6	233 Vote favorably in the UN Security Council (UNSC)
13	.6	234 Vote favorably in the UN General Assembly (UNGA)
2	.1	235 Vote favorably in regional international organizations (IOs), e.g., Organization of American States (OAS)
26	1.2	236 Make collaborative, diplomatic efforts with other third-party nations to deal with the problems that are associated with the target, e.g., urge multiparty conference for peace
2	.1	237 Start, resume, or increase cultural exchange
14	.6	238 Start, resume, or increase scientific exchange
1	.0	239 Start, resume, or increase educational exchange
1	.0	240 Start, resume, or increase exchange in general

Neutral or ambiguous diplomatic instruments:

178	8.0	241 Simply hold formal meeting (resume meeting /open talks)
5	.2	242 Hold preliminary meeting or talks
17	.8	243 Conduct covert diplomacy; make unofficial, secret visit; hold secret meeting; send notes of which the contents are kept in secrecy
0	0	244 Meet at neutral place (This is used only when the neutrality of the meeting place is stressed.)
12	.5	246 File suit through courts; file complaint through commissions
0	0	247 Have trial or court decision, or commission arbitration showing indecision or indifference toward the target nation.

7	.3	248 Senate and/or House vote and show no preference; leave final decision to president or executive agency in charge; Senate and House vote opposing each other and thus leave the issues pending
8	.4	249 Send treaty or legislation to Senate or House
9	.4	250 Hold Senate or House subcommittee hearings; call for inquiry or review policy by appointing bipartisan commission
2	.1	251 Send observers
22	1.0	252 Vote by abstention in UNSC
3	.1	253 Vote by abstention in UNGA
5	.2	254 Vote by abstention in regional IOs
1	.0	255 Work through International Court of Justice (ICJ)
29	1.3	256 Work through UN in general, e.g., make speeches, call for debates (This includes undertaking actions through UN organizations or affiliates other than the ones listed in 252 to 255.)
2	.1	257 Make formal declaration, e.g., declare war or the end of war
27	1.2	258 Seek support from allies or other nations (often shuttle diplomacy) to side with sender's policy toward target
5	.2	259 Permit domestic demonstration or public opinion poll that has implications, positive or negative, for target nation

Negative diplomatic instruments:

38	1.7	260 Hold formal meeting with no results, no progress, or failure to conclude
47	2.1	261 Have trial or court decision, or commission arbitration that implicates target nation negatively or is unfavorable to target, e.g., indict persons of crimes or accuse companies of unfair practices
54	2.4	262 Senate and/or House vote against target, e.g., reject aid plans or pass resolutions to condemn
44	2.0	265 Vote unfavorably in UNSC.

11	.5	266 Vote unfavorably in UNGA.
4	.2	267 Vote unfavorably in regional IOs.
2	.1	268 Obstruct target's gaining or doing something, by diplomatic means that may include covert methods
7	.3	269 Issue formal regret
2	.1	270 Engage in unwanted cultural or information penetration, e.g., TV Marti broadcasting
1	.0	271 End, suspend, or decrease cultural exchange
2	.1	272 End, suspend, or decrease scientific exchange
0	0	273 End, suspend, or decrease educational exchange
0	0	274 End, suspend, or decrease exchange in general
20	.9	275 Make formal complaint or protest
2	.1	276 Issue ultimatum, i.e., threaten with negative sanctions and specify time limit
20	.9	277 Cancel planned events, e.g., scheduled meetings, Olympics Games
8	.4	278 Postpone planned events, e.g., delay treaty approval by extending policy review
23	1.0	279 Reduce routine international activity; recall ambassador or other officials; cut back diplomatic relations; reduce embassy staff; advise nationals to leave; ban travel
11	.5	280 Put diplomatic restrictions or limits on policies concerning target's officials or citizens
11	.5	281 Evacuate personnel; close embassy
13	.6	282 Grant asylum to dissidents, including political, military and religious asylum seekers
25	1.1	283 Apply positive diplomatic tools to rebels or dissidents, e.g., meet (contact) dissidents, give them diplomatic privileges, or show support by other diplomatic means

3	.1	284 Halt negotiation
5	.2	285 Break diplomatic relations; refuse or withhold recognition of new government
1	.0	286 Walk out of meetings or conferences in protest
31	1.4	289 Expel personnel; order persons out of country; close consulates; declare certain individuals persona non grata
0	0	290 Expel organization or group
21	.9	291 Detain, arrest, or indict person(s)
0	0	292 Allow noninjurious destructive act, such as demonstration that causes physical destruction, e.g., damages to embassy or other institutes linked to target
1	.0	293 Suspend diplomatic dialogues
4	.2	294 Suspend treaty; cease observing treaty
1	.0	295 Summon ambassador of target nation for information
1	.0	296 Strengthen and upgrade security in embassy to counter espionage
0	0	298 Others (diplomatic instruments not specified above)
1,457	--	299 Missing

Col. 22 ECONOMIC: Presence of economic instruments

N	%	Code
401	10.9	1 = Yes
3,288	89.1	0 = No

Cols. 23-25 ECONITEM: Primary economic instrument used

N	%	Code
		Positive economic instruments:
		Positive trade policies:
4	1.0	301 Implement a tariff discrimination policy favorable to target nation, i.e., impose lesser duties on target's imports as compared to other nations in general
13	3.2	302 Grant most-favored-nation status, i.e., treat imports from target nation as favorably as imports of similar products from other nations
3	.7	303 Reduce or lower tariffs in general or on particular products
5	1.2	304 Implement direct purchase or direct sale that involves payment for service or goods
4	1.0	305 Give subsidies to exports to or imports from the target nation
19	4.7	306 Grant licenses to approve the import or export of particular goods
2	.5	311 Give trade credits to target nation (This category includes farm credits.)
2	.5	312 Grant industrial-technological transfer or assistance
5	1.2	313 Establish transportation agreement
0	0	314 Establish tourist agreement
		Positive capital policies:
96	23.9	321 Provide aid in the form of grants or loans
0	0	322 Grant investment guarantees, i.e., provide governmental insurance against some of the risks of private foreign investors
1	.2	323 Encourage private capital exports or imports, i.e., supply a variety of incentives to promote capital flows
0	0	324 Provide a taxation policy favorable to foreign capital investment
3	.7	327 Give money to finance and support action or project

12	3.0	328 Implement joint venture, i.e., both sender and target pour money into project
4	1.0	329 Release frozen foreign assets; return property
1	.2	330 Pay interest on frozen assets
1	.2	331 Obtain loans from target nation
9	2.2	332 Resolve settlement of financial claims such as damage compensation for sender and/or target; offer or accept compensation
2	.5	333 Implement direct investment in target nation
15	3.7	334 Grant preferential treatment regarding loans or debt repayment, e.g., pay interest for target nation, reschedule debt, defer repayment

Miscellaneous positive policies:

17	4.2	335 Provide emergency aid for disaster relief
5	1.2	336 Resume economic aid
21	5.2	337 End, lift, or suspend sanctions
1	.2	338 Provide aid in secrecy
12	3.0	340 Ease, relax trade or financial restrictions; reduce scope of sanctions
1	.2	341 Set up joint economic commission to address problems
4	1.0	342 Take joint economic action; implement economic cooperation
2	.5	343 Delay implementing negative sanctions
2	.5	344 Apply negative economic tools to rebels or dissidents
3	.7	347 Solicit and receive money to finance a project

Neutral or ambiguous economic instruments:

1	.2	350 Review economic policy toward or relations with the target nation

Negative economic instruments:

Negative trade sanctions:

3	.7	351 Ban or prohibit exports to target nation (embargo)
2	.5	352 Ban or suspend imports from target nation (boycott)
7	1.7	353 Increase tariffs on import from target nation
1	.2	354 Implement a tariff discrimination policy unfavorable toward target nation, i.e., impose more duties on imports from target than on similar products from other nations
2	.5	355 Withdraw or suspend most-favored-nation status of target nation
1	.2	356 Delay granting most-favored-nation status to target nation
4	1.0	359 Blacklist nation for unfair trade practice; impose trade laws such as Super 301
10	2.5	360 Ban doing business with firms that have trade with target nation (blacklist)
4	1.0	361 Impose quantitative restrictions on particular imports or exports (quota)
15	3.7	362 Deny licenses to import or export particular goods
0	0	363 Sell specific exports to target nation at prices below cost to disrupt target's economy or to gain market shares (dumping)
0	0	364 Purchase particular commodities to deny their availability to target nation (preclusive buying)
1	.2	365 Place constrains (e.g., prior approval) on imports from target nation
0	0	366 End transportation agreement
0	0	367 End tourist agreement
4	1.0	368 End special trade privileges

Negative capital sanctions:

3	.7	371 Freeze assets of target nation, i.e., deny target's access to bank accounts or other financial assets
1	.2	372 Tighten capital flows; restrict imports or exports of capital between sender and target
19	4.7	373 Suspend aid
4	1.0	374 Reduce or cut back aid
5	1.2	375 Terminate aid
0	0	377 Seize property belonging to target nation (expropriation)
0	0	378 Impose discriminatory taxation on target's assets
1	.2	379 Withhold, delay or reduce dues to international organization (This may affect economic interests of target nation)
1	.2	380 Deny loans
9	2.2	381 Interfere through investment or other financial instruments to influence target nation's action or policy

Miscellaneous negative sanctions:

13	3.2	382 Apply positive economic tools (e.g., provide aid) to rebels or dissidents
3	.7	384 Impose limited sanctions
13	3.2	385 Impose overall sanctions, including bans on imports and exports, and restrictions on financial transactions (loans, assets, and investment)
4	1.0	386 Tighten previous sanctions
1	.2	387 Cut back economic relations.
0	0	398 Others (economic instruments not specified above)
3,287	--	399 Missing

Col. 26 MILITARY: Presence of military instruments

N	%	Code
419	11.4	1 = Yes
3,270	88.6	0 = No

Cols. 27-29 MILIITEM: Primary military instrument used

N	%	Code

Positive military instruments:

Military alliance:

0	0	401 Fight war as allies
1	.2	402 Establish military alliance
7	1.7	403 Conduct joint military maneuvers or exercises

Military support:

8	1.9	411 Provide air or naval assistance to transport or evacuate troops
11	2.6	412 Provide air or naval assistance for emergency relief or rescue efforts, e.g., evacuate citizens of target nation or pick up refugees
14	3.3	413 Provide air, naval, or land facilities for bases or other uses for target nation, e.g., escort ships to ensure safe passage
9	2.1	414 Use air, naval, or land facilities of target nation for bases or other military purposes
15	3.6	416 Send troops for assistance, e.g., peacekeeping
6	1.4	417 Withdraw troops from regions next to target nation, either for completion of mission or for improvement of security alert
4	1.0	418 Withdraw or remove weapons aimed at target nation
1	.2	419 Adopt or extend nuclear test moratorium
1	.2	420 Share military command; provide troops for use
5	1.2	421 Give technical or advisory military assistance

7	1.7	422 Train military personnel for target nation
15	3.6	423 Sell or send highly advanced technology (e.g., UNIVAC computers) to target nation
1	.2	424 Buy or receive highly advanced technology from target nation
75	17.9	425 Sell or send arms, ranging from guns to tanks, to aircraft (nonlethal military equipment or spare parts included), to target nation (resume or speed up the arms delivery)
2	.5	426 Buy or get arms, ranging from guns to tanks, to aircraft (nonlethal military equipment or spare parts included), from target nation
5	1.2	427 Sell or send strategic materials, e.g., uranium and plutonium, to target nation
1	.2	428 Buy or receive strategic materials, e.g., uranium and plutonium, from target nation
1	.2	429 Ease restrictions on arms sales
1	.2	430 Lift arms embargo
7	1.7	431 Engage in joint R & D (research and development) of advanced technology that has military implications
17	4.1	432 Take joint military action for arms control, nuclear nonproliferation, etc.
39	9.3	433 Provide or grant military aid to target nation
1	.2	434 Provide secret military aid or assistance in any form to target nation
1	.2	435 Resume military aid
3	.7	436 Set up joint military commission or defense group
1	.2	438 Delay or suspend negative military action
6	1.4	439 Apply negative military tools to rebels or dissidents

Neutral or ambiguous military instruments:

4	1.0	441 Cut troops deployed; reduce size of bases; turn over bases to the target nation (This category is "neutral" if the act is based upon mutual consent, "negative" if it signifies less commitment to military relations, and "positive" if it is a cooperative response to the target's request.)
0	0	442 Review military policy toward, or relations with, target nation
0	0	443 Retreat or surrender in reaction to military force of the target nation (This category is highly controversial in terms of "affect.")
5	1.2	444 Withdraw troops in a neutral or negative sense, when adversity occurs

Negative military instruments:

Military hostile actions:

19	4.5	451 Apply positive military tools to rebels or dissidents, e.g., provide arms, other material support, or military training for dissidents to encourage rebellious, subversive or guerrilla activities against target's government
0	0	452 Incite limited and sporadic terrorist actions against target nation
0	0	453 Give sanctuary to terrorists
6	1.4	454 Ban all arms sales or technology transfer to target nation (arms embargo)
5	1.2	455 Reduce or cut back arms sales or technology transfer
18	4.3	456 Reject or suspend particular (i.e., specified) arms sales or advanced technology transfer (deny /refuse /postpone)
1	.2	457 End or terminate military aid
7	1.7	458 Suspend military aid
4	1.0	459 Reduce military aid
1	.2	460 Form alliance with other nations against target nation
1	.2	461 Terminate military alliance; end military ties

6	1.4	462 Reduce military relations
3	.7	463 Resume reconnaissance flights (AWACs) over target nation to increase alert watch in area
2	.5	464 Call on reserves registration; activate conscription
2	.5	465 Use troops (marines/military police) to disperse protest or demonstration by people of target nation; use troops to search or surround target's embassy for security reason
23	5.5	466 Set up task force in the region or at nearby high sea; place troops nearby on alert
3	.7	467 Hold military exercises nearby to demonstrate force or resolve
4	1.0	468 Implement forced repatriation
1	.2	469 Intercept airliners, ships in open space

Small scale military acts:

7	1.7	471 Engage in limited air, naval or border skirmishes
4	1.0	472 Initiate border police acts; strengthen monitoring of no-fly zone; escort UN inspectors
0	0	473 Annex territory already occupied
0	0	474 Seize or raid material of target nation
1	.2	475 Impose blockades
0	0	476 Assassinate leaders of target nation

Limited war acts:

12	2.9	480 Launch air strike; fire missiles
2	.5	481 Shell intermittently
6	1.4	482 Bomb military or industrial areas
1	.2	483 Intercept or sink ships on a small scale

1	.2	484 Install mining at territorial waters of target nation

Extensive war:

0	0	486 Use nuclear weapons
2	.5	487 Engage in full-scale air, naval, or land battles
2	.5	488 Invade territory of target nation
1	.2	489 Occupy territory of target nation; recover occupied territory
0	0	490 Massively bomb civilian areas
0	0	491 Mobilize and deploy troops on a large scale
0	0	492 Use chemical, biological weapons
0	0	498 Others (military instruments not specified above)
3,269	--	499 Missing

Col. 30 ISUTYPE1: COPDAB issue-type of primary issue

N	%	Code
95	2.6	1 = Symbolic political relations
573	15.5	2 = Economic relations
1528	41.4	3 = Military and strategic relations
33	.9	4 = Cultural and scientific relations
12	.3	5 = Relations regarding physical environment and natural resources
296	8.0	6 = Relations regarding human/demographic/ethnic issues
1152	31.2	7 = Political order and law/organization relations
0	0	8 = Missing
0	0	9 = Residual category

Cols. 31-33 ISUITEM1: Specific item of primary issue

N	%	Code
		Issue-Type 1—Symbolic political relations:
11	.3	101 Positive symbolic expression of good faith, friendship or agreement
0	0	102 Neutral symbolic expression that displays indifference
84	2.3	103 Negative symbolic expression of hostility, e.g., accusations, criticism, distortion, misinterpretation, deception, denials, expulsion or killing of sender's personnel or citizens, negative economic measures
0	0	104 Mixed symbolic expression that presents both positive and negative gestures
0	0	198 Others
		Issue-Type 2—Economic relations:
184	5.0	201 Trade and tariffs (This includes nontariff trade barriers.)
3	.1	202 International commodities, e.g., coffee, wheat, copper
108	2.9	203 Macroeconomic policy coordination, i.e., using monetary or fiscal policy tools to deal with inflation, unemployment, growth, exchange rate, etc.
38	1.0	204 Financial transaction, e.g., loans, assets, taxes, investments, compensations
42	1.1	205 Oil and energy
21	.6	206 International debt crisis
0	0	207 Multinational firms
3	.1	208 High-tech nonmilitary products or transfers (imports or exports)
4	.1	209 Industrial and technological cooperation (This concerns the perspective of "wealth" rather than the perspective of "enlightenment" as in scientific exchange.)
1	.0	210 Intellectual property rights, copyrights

61	1.7	211 Positive economic sanctions, e.g., economic aid, the granting of MFN status, aid in general
42	1.1	212 Negative economic sanctions, e.g., boycotts or embargoes already in force
2	.1	213 Economic development of target nation, or regional economic development
64	1.7	220 Overall economic relations
0	0	298 Others

Issue-Type 3—Military and strategic relations:

187	5.1	301 Arms control of nuclear weapons; strategic arms limitation talks, e.g., SALT I, II, III (also called START); ABM, ILBM, SLBM, TNFs (long-range Theater Nuclear Forces), and cruise missiles
55	1.5	302 Nonproliferation of nuclear weapons or other weapons of massive destruction; nuclear weapons development in Pakistan, India; control of nuclear raw materials, i.e., uranium and plutonium; nuclear free zone; nuclear nonproliferation treaty
20	.5	303 Nuclear test ban
28	.8	304 Research, development, and production of new weapons systems; satellite, laser beam, or other advanced technology for military use
29	.8	305 Chemical or biological weapons; binary weapons; nerve gas
14	.4	306 Nuclear cooperation; sale of nuclear power plant
46	1.2	307 Arms control of conventional arms sales; arms flow between nations
7	.2	311 Arms control in general
22	.6	312 Arms race; military buildup; defense budget increase to match rivals; concerns over defense cuts of allies
10	.3	313 Strategic tactics; military doctrine
34	.9	314 Security or balance-of-power in Europe; deployment of missiles, other weapons, troops in Europe

5	.1	315 Intelligence facilities and related activities, e.g., listening post, tracking station, sharing of intelligence information
9	.2	316 Military activities; troop movements; ship appearance; military base information
41	1.1	321 Access to military facilities in other countries, e.g., using military bases, installing intelligence, sending troops
8	.2	322 Military or security aid
126	3.4	323 Military cooperation in general, e.g., arms transactions between sender and target, assistance in training military personnel
40	1.1	324 Military alliance; mutual defense treaty (e.g., NATO, U.S.-Japan alliance, U.S.-ROK [Republic of Korea/South Korea] alliance); joint exercises
8	.2	325 Burden sharing of military alliance
12	.3	326 Overall military and strategic relations
37	1.0	331 International war; border war
87	2.4	332 Isolated military incidents; guerrilla raids, air strikes, naval encounters, or border encounters between two nations
129	3.5	333 Invasion of other nations by target nation; military intervention on a large scale
97	2.6	334 Military involvement or intervention in the third-world region, e.g., the Horn of Africa, Southern Africa, Cuba, and Afghanistan; sending military advisors; granting money; selling arms
31	.8	336 Civil war; large-scale combat actions within a nation
59	1.6	337 Military activities occurring within a nation; riot/demonstration/strike control; counterinsurgency; coup d'état
31	.8	339 Security alert such as military mobilization on border
217	5.9	341 Conflict resolution; cease-fire negotiation

122	3.3	342 Peacekeeping; enforcing cease-fire or peace agreement; disarmament, demilitarization, demobilization; withdrawal of force
17	.5	350 Regional stability
0	0	398 Others

Issue-Type 4—Cultural and scientific relations:

13	.4	401 Communication agreements, e.g., Voice of America
0	0	402 Tourism pacts
1	.0	403 Cultural exchange, e.g., Olympic Games
1	.0	404 Educational exchange
9	.2	405 Technological and scientific interactions
8	.2	406 Joint scientific surveys or explorations including space cooperation
1	.0	410 Exchange in general
0	0	498 Others

Issue-Type 5—Relations regarding physical environment and natural resources:

4	.1	501 Natural resources (conservation and allocation); environmental protection; preservation of endangered wildlife
0	0	502 Climate change; greenhouse effect
5	.1	503 Pollution control; hazardous wastes in air, water, and land, e.g., oil spills
0	0	504 Water management
0	0	505 Reforestation
3	.1	506 Ocean; preservation of fishing and marine resources, e.g., whaling
0	0	598 Others

Issue-Type 6—Relations regarding human/demographic/ethnic issues:

39	1.1	601 Refugee assistance/admission/repatriation/resettlement
14	.4	602 Population control; immigration policy
12	.3	603 Food production/storage/distribution
131	3.6	604 Human rights; emphasis on core rights—freedom from extrajudicial killing, freedom from torture, freedom from hunger, freedom from discrimination
15	.4	605 Emergency relief for natural disasters, e.g., floods, hurricanes, tornadoes, cyclones, typhoons, earthquakes, fires, droughts, volcanoes; insect and crop/feed and animal diseases; radioactive fallout
61	1.7	606 Delivery or relief of individuals: prisoners, hostages, asylum seekers, prisoners of war, soldiers missing in action
11	.3	607 Foreign aid for human development; medical aid; development aid
0	0	608 Existence of disease or epidemics: malaria, typhoid, smallpox, tuberculosis, cholera, viral influenza, AIDS
13	.4	609 Disasters caused by human errors, e.g., shooting down of commercial plane
0	0	610 Labor protection
0	0	698 Others

Issue-Type 7—Political order and law/organization relations:

586	15.9	701 Diplomatic relations; routine visits; overall bilateral relations; joint policy acts; commitments to be involved and help; treaties or agreements previously established
41	1.1	705 War on drugs and crime; collaborative efforts to fight drugs, organized crime across border
9	.2	706 Extradition treaty; agreement on prisoner repatriation
6	.2	707 Illegal influence-buying, lobbying; attempt to influence policymaking process

44	1.2	708 Espionage or spying
14	.4	711 Welfare of sender's nationals in target nation; loss of lives, damage to property, pertinent compensation issues, relief of individuals arrested or detained, etc.
5	.1	712 Acts against foreigners, e.g., anti-Americanism; attack on sender's embassy, bases, diplomats, soldiers in target nation
98	2.7	713 Terrorism: kidnapping, hijacking, bombing, sabotage, assassination
9	.2	714 Deteriorating political order in target nation, e.g., widespread strikes and civil riots, leading to declaration of curfew, martial law, or state of siege
2	.1	715 Improving or restoring political order in target nation
54	1.5	718 Legitimacy of regime
9	.2	719 Status in IO; target nation's credentials
30	.8	721 Democratization; liberalization; emphasis on freedom of association, right to vote, and right to participation
2	.1	722 Censorship; controls on information flow into or out of the country; suppression of freedom of opinion
30	.8	723 Containment of communism, i.e., concerns over communist aggression or expansion of sphere of influence
6	.2	724 Free market economy
4	.1	725 Noninterference; nonintervention; sovereignty
46	1.2	726 Independence; self-determination
57	1.5	727 Occupied territories, where status is undecided
4	.1	728 Disputed lands, islands, waters
9	.2	729 Annexation
3	.1	730 Issues in open space (high sea, air space, etc.): right of passage; interception of carriers for examination

33	.9	731 Unification, the highest degree of integration, politically, economically and militarily
13	.4	732 Economic integration; common market; trade union
11	.3	733 Free association
1	.0	734 Disintegration
9	.2	735 Establishment of peace, e.g., Austrian Peace Treaty, Camp David Accord
2	.1	736 International law; abiding by or violation of past agreements
5	.1	737 International organization
10	.3	740 Superpower summit
0	0	750 Fundamental changes in international system; global security and leadership in the post-Cold War era
0	0	798 Others

Issue-Type 8—Missing:

0	0	888 Missing

Issue-Type 9—Residual category:

Residual categories will be specified and added if the number of cases is significant.

Col. 34 ISUTYPE2: COPDAB issue-type of secondary issue
(Categories are the same as those under ISUTYPE1)

N	%	Code
0	0	1 = Symbolic political relations
162	4.4	2 = Economic relations
262	7.1	3 = Military and strategic relations
13	.4	4 = Cultural and scientific relations
8	.2	5 = Relations regarding physical environment and natural resources

60	1.6	6 = Relations regarding human/demographic/ethnic issues
237	6.4	7 = Political order and law/organization relations
2,947	79.9	8 = Missing
0	0	9 = Residual category

Cols. 35-37 ISUITEM2: Specific item of secondary issue
(Categories are the same as those under ISUITEM1)

N	%	Code
		Issue-Type 1—Symbolic political relations:
0	0	101 Positive symbolic expression of good faith, friendship or agreement
0	0	102 Neutral symbolic expression that displays indifference
0	0	103 Negative symbolic expression of hostility, e.g., accusations, criticism, distortion, misinterpretation, deception, denials, expulsion or killing of sender's personnel or citizens, negative economic measures
0	0	104 Mixed symbolic expression that presents both positive and negative gestures
0	0	198 Others
		Issue-Type 2—Economic relations:
33	4.4	201 Trade and tariffs (This includes nontariff trade barriers.)
2	.3	202 International commodities, e.g., coffee, wheat, copper
23	3.1	203 Macroeconomic policy coordination, i.e., using monetary or fiscal policy tools to deal with inflation, unemployment, growth, exchange rate, etc.
17	2.3	204 Financial transaction, e.g., loans, assets, taxes, investments, and compensations
10	1.3	205 Oil and energy
15	2.0	206 International debt crisis

0	0	207 Multinational firms
0	0	208 High-tech nonmilitary products or transfers (imports or exports)
1	.1	209 Industrial and technological cooperation (This concerns the perspective of "wealth" rather than the perspective of "enlightenment" as in scientific exchange.)
0	0	210 Intellectual property rights, copyrights
18	2.4	211 Positive economic sanctions, e.g., economic aid, granting MFN status, aid in general
38	5.1	212 Negative economic sanctions, e.g., boycotts or embargoes already in force
3	.4	213 Economic development of target nation, or regional economic development
2	.3	220 Overall economic relations
0	0	298 Others

Issue-Type 3—Military and strategic relations:

31	4.2	301 Arms control of nuclear weapons; strategic arms limitation talks, e.g., SALT I, II, III (also called START); ABM, ILBM, SLBM, TNFs (long-range Theater Nuclear Forces), cruise missiles
24	3.2	302 Nonproliferation of nuclear weapons or other weapons of massive destruction; nuclear weapons development in Pakistan, India; control of nuclear raw materials, i.e., uranium and plutonium; nuclear free zone nuclear nonproliferation treaty
4	.5	303 Nuclear test ban
5	.7	304 Research, development, and production of new weapons systems; satellite, laser beam, or other advanced technology for military use
10	1.3	305 Chemical or biological weapons; binary weapons; nerve gas
8	1.1	306 Nuclear cooperation; sale of nuclear power plant
5	.7	307 Arms control of conventional arms sales; arms flow between nations

4	.5	311 Arms control in general
6	.8	312 Arms race; military buildup; defense budget increase to match rivals; concerns over defense cuts of allies
5	.7	313 Strategic tactics; military doctrine
6	.8	314 Security or balance-of-power in Europe; deployment of missiles, other weapons, troops in Europe
3	.4	315 Intelligence facilities and related activities, e.g., listening post, tracking station, sharing of intelligence information
1	.1	316 Military activities; troop movements; ship appearance; military base information
3	.4	321 Access to military facilities in other countries, e.g., using military bases, installing intelligence, sending troops
3	.4	322 Military or security aid
14	1.9	323 Military cooperation in general, e.g., arms transactions between sender and target, assistance in training military personnel
11	1.1	324 Military alliance; mutual defense treaty (e.g., NATO, U.S.-Japan alliance, U.S.-ROK [Republic of Korea/South Korea] alliance); joint exercises
0	0	325 Burden sharing of military alliance
6	.8	326 Overall military and strategic relations
6	.8	331 International war; border war
8	1.1	332 Isolated military incidents; guerrilla raids, air strikes, naval encounters, or border encounters between two nations
14	1.9	333 Invasion of other nations by target nation; military intervention on a large scale
17	2.3	334 Military involvement or intervention in the third-world region, e.g., the Horn of Africa, Southern Africa, Cuba, and Afghanistan; sending military advisors; granting money; selling arms

1	.1	336 Civil war; large scale combat actions within a nation
5	.7	337 Military activities occurring within a nation; riot/demonstration/strike control; counterinsurgency; coup d'état
2	.3	339 Security alert such as military mobilization on border
23	3.1	341 Conflict resolution; cease-fire negotiation
21	2.8	342 Peacekeeping; enforcing cease-fire or peace agreement; disarmament, demilitarization, demobilization; withdrawal of force
16	2.2	350 Regional stability
0	0	398 Others

Issue-Type 4—Cultural and scientific relations:

2	.3	401 Communication agreements, e.g., Voice of America
0	0	402 Tourism pacts
3	.4	403 Cultural exchange, e.g., Olympic Games
0	0	404 Educational exchange
5	.7	405 Technological and scientific interactions
2	.3	406 Joint scientific surveys or explorations including space cooperation
1	.1	410 Exchange in general
0	0	498 Others

Issue-Type 5—Relations regarding physical environment and natural resources:

0	0	501 Natural resources (conservation and allocation); environmental protection; preservation of endangered wildlife
0	0	502 Climate change; greenhouse effect
5	.7	503 Pollution control; hazardous wastes in air, water, and land, e.g., oil spills
0	0	504 Water management

0	0	505 Reforestation
3	.4	506 Ocean; preservation of fishing and marine resources, e.g., whaling
0	0	598 Others

Issue-Type 6—Relations regarding human/demographic/ethnic issues:

3	.4	601 Refugees assistance/admission/repatriation/resettlement
7	.9	602 Population control; immigration policy
1	.1	603 Food production/storage/distribution
42	5.7	604 Human rights; emphasis on core rights—freedom from extrajudicial killing, freedom from torture, freedom from hunger, freedom from discrimination
1	.1	605 Emergency relief for natural disasters, e.g., floods, hurricanes, tornadoes, cyclones, typhoons, earthquakes, fires, droughts, volcanoes; insect and crop/feed and animal diseases; radioactive fallout
4	.5	606 Delivery or relief of individuals: prisoners, hostages, asylum seekers, prisoners of war, soldiers missing in action
0	0	607 Foreign aid for human development; medical aid; development aid
0	0	608 Existence of disease or epidemics: malaria, typhoid, smallpox, tuberculosis, cholera, viral influenza, AIDS
0	0	609 Disasters caused by human errors, e.g., shooting down of commercial plane
2	.3	610 Labor protection
0	0	698 Others

Issue-Type 7—Political order and law/organization relations:

34	4.6	701 Diplomatic relations; routine visits; overall bilateral relations; joint policy acts; commitments to be involved and help; treaties or agreements previously established

8	1.1	705 War on drugs and crime; collaborative efforts to fight drugs, organized crime across border
6	.8	706 Extradition treaty; agreement on prisoner repatriation
0	0	707 Illegal influence-buying, lobbying; attempt to influence policymaking process
8	1.1	708 Espionage or spying
5	.7	711 Welfare of sender's nationals in target nation; loss of lives, damage to property, pertinent compensation issues, relief of individuals arrested or detained, etc.
4	.5	712 Acts against foreigners, e.g., anti-Americanism; attack on sender's embassy, bases, diplomats, soldiers in target nation
19	2.6	713 Terrorism: kidnapping, hijacking, bombing, sabotage, assassination
0	0	714 Deteriorating political order in target nation, e.g., widespread strikes and civil riots, leading to declaration of curfew, martial law, or state of siege
1	.1	715 Improving or restoring political order in target nation
3	.4	718 Legitimacy of regime
1	.1	719 Status in IO; target nation's credentials
17	2.3	721 Democratization; liberalization; emphasis on freedom of association, right to vote, and right to participation
2	.3	722 Censorship; controls on information flow into or out of the country; suppression of freedom of opinion
8	1.1	723 Containment of communism; concerns over communist aggression or expansion of sphere of influence
8	1.1	724 Free market economy
4	.5	725 Noninterference; nonintervention; sovereignty
7	.9	726 Independence; self-determination
3	.4	727 Occupied territories, where status is undecided

1	.1	728 Disputed lands, islands, waters
1	.1	729 Annexation
1	.1	730 Issues in open space (high sea, air space, etc.): right of passage; interception of carriers for examination
0	0	731 Unification, the highest degree of integration, politically, economically and militarily
2	.3	732 Economic integration; common market; trade union
0	0	733 Free association
0	0	734 Disintegration
0	0	735 Establishment of peace, e.g., Austrian Peace Treaty, Camp David Accord
17	2.3	736 International law; abiding by or violation of past agreements
63	8.5	737 International organization
6	.8	740 Superpower summit
8	1.1	750 Fundamental changes in international system; security and leadership in the post-Cold War era
0	0	798 Others

Issue-Type 8—Missing:

2,947	--	888 Missing

Issue-Type 9—Residual category:

Residual categories will be specified and added if the number of cases is significant.

Col. 38 MULTAR: Number of target nations involved

N	%	Code
2,289	62.1	1 = Only one target nation involved
506	13.7	2 = Two target nations involved
195	5.3	3 = Three target nations involved
168	4.6	4 = Four target nations involved
125	3.4	5 = Five target nations involved
288	7.8	6 = Six target nations involved
77	2.1	7 = Seven target nations involved
41	1.1	8 = Multiple targets, but some (less than 8) are specified and the remaining are unspecified
0	0	9 = Missing

Col. 39-40 LOCATION: Location of the problem

N	%	Code
2	.1	01 = Within the sender's boundary
156	4.2	02 = Within the target's boundary
1,895	51.4	03 = Between the sender and the target / between the sender and another nation besides the target
89	2.4	04 = Between the targets when multiple targets are involved / between the target(s) and another nation or other nations
26	.7	05 = Within a geographical region next to or nearby the sender
691	18.7	06 = Within a geographical region next to or nearby the target
108	2.9	07 = Within a region neither close to the sender nor the target
56	1.5	08 = Within common space, e.g., high seas, Antarctica
25	.7	09 = Throughout the globe

575	15.6	10 = Symbolic relationships or ideas, e.g., human rights and democratization
66	1.8	11 = Intergovernmental organization
0	0	12 = Nongovernmental transnational organization
0	0	98 = Others; none of the above; ambiguous; difficult to identify
0	0	99 = Missing

Col. 41 GESTURE: Nature of action with regard to the primary instrument used, or the most costly with the presence of multiple instruments

N	%	Code
2,044	55.4	1 = Positive action
474	12.9	2 = Neutral action
1,166	31.6	3 = Negative action
5	.1	4 = Mixed action; presence of both positive and negative actions
0	0	8 = Others; ambiguous; difficult to identify
0	0	9 = Missing

APPENDIX II

CODER'S INSTRUCTION MANUAL

This manual of coding instructions is written for the dissertation entitled "Selection of Statecraft: Issue-specific or Actor-specific? The American Case, 1978-1994." It is a summary of general rules governing the coding task. Such a manual is necessary to assure consistency throughout the coding procedure, or to facilitate and promote consistency when two or more coders are involved. This manual is a supplement to a set of classification schemes devised to obtain variables of interest. The coding task involves putting numbers of pertinent variables into the coding sheets according to the classification scheme. Every coding sheet, usually one page only, contains an event entry at the top and thereafter follows a variables template. Future coders should quickly go through this manual before starting their coding and return to the relevant sections to seek answers when uncertain about the coding of specific variables regarding some events.

1. DATE: This variable contains six digits in the order year/month/day. For this project, coders should simply copy the numbers for the date at the very beginning of the event entry. A problem here is with the distinction between the day the event was reported and the day on which the event was reported to have occurred. In this project, I have

maintained the integrity of the event entries in *Foreign Affairs Chronology*, i.e., I have not divided a single entry into several entries based on time lines. The main reason for this is that it makes it easier to trace the original records. This treatment is disputable, however, especially when an event entry is an aggregate of several distinctive events and covers a long period of time.

2. NONCASE: This is a variable about case qualification. The original selection from *Foreign Affairs Chronology* was based on a broad standard: all U.S.-related records and all events relating to the UN, NATO, EC, etc. To meet the scope of inquiry laid out in the project, it is necessary to winnow out unsuitable cases. An event entry is qualified as a case (= 1), if it satisfies the following criteria: (1) the sender is the United States, (2) the target is another nation-state, with the exception of the EC, and (3) there are no more than 7 target nations when multiple targets are involved. By contrast, a case is disqualified if it shows that the sender is not the United States (= 2), the target is the United States and the sender is another nation-state (= 3), the target is not a nation-state but the UN, its affiliates, or other IOs (= 4), there are more than 7 target nations (= 5), it is a domestic event (= 6), it is an indirect case where US action is secondary in the context (= 7), and it is ambiguous or has insufficient information for coding (= 8). Continue the subsequent coding, only when NONCASE = 1. Moreover, coders should sometimes screen out part of an event entry for coding when only one portion fits the selection criteria.

3. ACTOR: This category is coded "002" invariably, since the sender is always the United States.

4. TARGET: The coder should attempt to identify the primary target nation(s) to which U.S. actions are directed. When there are multiple (i.e., more than one) target nations involved, additional blank coding sheets (ones without event entries on top) will be used and attached to the original coding sheet. The identification of the sender and receiver is not often as straightforward as expected. For example, in the event "810422 -0423 Western 'contact group' (the U.S., Canada, Great Britain, France, West Germany) meets in London, agrees to seek revised UN Namibia plan," there are three options for coding:

(1) The sender is the U.S.; the target is Namibia; and the involvement of other Western nations is coded as a policy instrument of "Making collaborative efforts with other nations to solve problems of the target."

(2) The sender is the U.S.; the targets are Canada, Great Britain, France and West Germany; and the event involves the policy instrument "Meeting with results" or "Taking joint diplomatic actions."

(3) A combination of (1) and (2).

In this case, option (1) is adopted, where other members of the contact group are regarded as the remaining senders. In other similar events, however, option (2) or (3) may be more reasonable, depending upon the event context. This is a potential threat to the consistency of case selection, but there are no clear-cut solutions.

5. FOREIGN POLICY BEHAVIOR: When taking into account the sender's actions, it is easier for the coder first to identify the broad categories to which the pertinent policy instruments belong, and then to pinpoint the detailed categories associated with those instruments. The variables, PROPAGAN, DIPLOMAC, ECONOMIC and MILITARY are binary in nature, concerning the presence of four archetypes of statecraft: propaganda, diplomacy, economics, and force, respectively. On the other hand, the variables, PROPITEM, DIPLITEM, ECONITEM and MILIITEM, represent categories of more specific policy items used. To address possible ambiguities, these rules should be followed:

- When an event consists of only one type of statecraft but multiple policy items, record the most significant policy item in the coding sheet. This rule also applies to the cases with multiple types of statecraft.
- When an event contains announcements, promises, or threats within a substantive policy context, particularly one involving economic or military instruments, the coders, more often than not, should treat the case as if it actually happened. The main reason for doing so is that there are usually no news follow-ups on the actions proposed. For instance, in the event "780404 The Administration tells Congress of plans to sell 12 F-5 jet fighters to the Sudan," the coder should record both the propaganda (i.e., "Announce") and the military (i.e., "Sell arms") statecraft.
- Voting in UNSC, UNGA, or other international organizations plays an important part in foreign policy. The coder should consider the context when deciding whether the

sender is for, against, or neutral to the target nations involved in an issue. This rule also applies to the voting results in both the House and Senate and to court decisions.

- When the coders cannot find an appropriate policy item to map the policy action, they should use the category "Others" and write down a short passage to describe the policy act. This will be helpful for improving the present classification scheme, which may not be perfectly inclusive and exhaustive.

6. "ISSUE-TYPE" Category: The variables ISUTYPE1 and ISUITEM1 are designated for the primary issue involved in the events, where ISUITEM1 concerns more detailed specification of issues. ISUTYPE2 and ISUITEM2 are for the secondary issue in question. The distinction between the primary and secondary issue is not always clear. The coders must make their own judgments. The following are rules about the coding of issue-type:

- The broad categories of issue types are borrowed from COPDAB. The category of "Symbolic political relations" often overlaps with other categories. To avoid confusion, this category is reassigned here to signify the sender's reactions to an earlier action by the target that upset or pleased the sender. In other words, this category will be used as the primary issue-type when such reactions are obvious in the events.
- Some issue categories are more general than others. Examples are "Diplomatic relations" and "Regional stability." These can be used when either the nature of an event or its issue-type is not precisely stated. For instance, "Diplomatic relations" is

suitable for describing routine, planned state visits, while "Regional stability" is appropriate for characterizing frequent shuttle diplomacy to the Middle East, given that more specific purposes are not reported.

- Overlapping between the primary and secondary issue types is prohibited; that is, coders should not record the same issue type as both ISUTYPE1 and ISUTYPE2. When an event involves more than one issue item belonging to the same issue type, the coders should choose only one issue item for the coding of ISUITEM1 or ISUITEM2. When there are more than two issue types involved in an event, coders should list the extra issue types and items in the designated space. This might be useful for further exploration of the problem of multiple issues.

7. MULTAR: This variable deals with the problem of multiple target nations in a single event entry. The values from 1 to 7 literally represent the targets involved. The value 8 is used, when no more than 7 targets are identified, but some others are indirectly involved or not specified. Throughout the project, there are very few (no more than 5) events when more than 7 targets are identifiable but the number of targets does not reach a very high level. For these events, the coders may divide all the target nations into two groups to make the coding feasible.

8. LOCATION: This variable concerns the location of the problem in an event. The coders will have difficulties with the distinction between local and global problems, if such distinctions indeed exist in an increasingly interdependent world. A G-7 summit

can be viewed as promoting bilateral economic relations between major industrialized nations, but it also can be viewed as having global economic implications. The same can be said about the SALT and START negotiations between the United States and the USSR. Cases like these are coded as "Between the sender and target," but not "Throughout the globe." When the issues in question are related to "Symbolic political relations," "Human rights," "Democratization," and other humanitarian subjects, the location of the problem is coded as "Symbolic ideas/relationships." In dealing with this variable, the coders should think about where the geographical location of the problem is, if the problem has a contagious nature, if there are symbolic ideas or expressions involved, and if the problem is concerned with international organizations.

9. GESTURE: This variable represents the overall affect, positive, neutral or negative, shown in the sender's actions toward the target. The general rule is to look at the most costly instrument used and assess it as being positive or negative. The classification scheme of this study provides subheadings to indicate the nature of policy instruments. The coders can refer to these subheadings when in doubt. In general, a positive instrument shows positive affect, while a negative instrument shows negative affect. A neutral instrument, however, may show positive or negative affect, depending upon the context of the event. The coders should be cautious in this regard.

Finally, when the coders are not familiar with the meaning or background of certain events, they should consult with someone who has expertise in contemporary history or current affairs.

APPENDIX III

THE COPDAB CONFLICT/COOPERATION SCALE

Application: Used as a single index measuring the bilateral relations between the United States, China, and Taiwan.

Variable Name: COPDABX, the resultant scores applying the COPDAB conflict/cooperation scale.

code

Preferred Activity List - International Events Scale

Scale Point	*Good/Preferred*	*Bad*
15	bomb	open
	attack	continue
	raid	take
	shell	punch
	sink	push
	down (planes)	
	capture	
	kill	
	ambush	
	repel	
	launch (offensive)	
	occupy	
14	clash	continue
	shoot (depending	exchange
	shell on	skirmish
	raid severity)	
	attack	
13	clash	
	blockade	

APPENDIX III (cont'd)

Scale Point	*Good/Preferred*	*Bad*
12	break (relations)	sever
	nationalize	
	destroy	
11	seize	hold
	restrict	
	detain	
	confiscate	
	blacklist	
	boycott	
	mobilize	
	ban	
	curb	
	block (loan, etc.)	
	suspend	
	cancel	
	expel	oust
	impose	
	halt	
	convict	
	arrest	
	sentence	
10	denounce	deplore
	accuse	
	threaten	score
	warn	allege
	demand	ridicule
	protest	rebuke
	demonstrate	disclose
	condemn	attack
	reject	aim
	blame	collapse
	charge	blast
	oppose	
	declare	
	challenge	
	assail	
	suspend (talks)	

APPENDIX III (cont'd)

Scale Point	*Good/Preferred*	*Bad*
09	criticize	call
	deny (depending on severity)	aim
	express (dislike, concern)	collapse
	disagree	
	fail (to reach an agreement, etc.)	
	caution	
	oppose (depending on severity)	
	terminate	
07	appoint	name
		hold
	confer	continue
	state	say
	request	want
	discuss	believe
	visit (non-head of state)	end
	meet (SCS, Congress)	
	issue	tell
	ask	call
	present (credentials ambas.)	arrive
	announce	set
	propose	view
	express (desire/hope in issue area)	hope
		desire
	invite	push
	urge	press
	negotiate	parade
		see
	review	begin
	inform	exchange
	recommend	
	appeal	
	emphasize	stress
	admit	
	plan	

APPENDIX III (cont'd)

Scale Point	*Good/Preferred*	*Bad*
06	support	laud
	agree (policy concerning third party)	vow
	endorse	back
	praise	hail
	recognize	see
	apologize	
	announce (cease-fires)	
	offer (aid)	
	assure	
	promise	
	reaffirm	
05	agree (limited --cultural, friendship)	make
		reach
		approve
	thank (aid)	
	open (services)	
	establish	inaugurate
	form	
	visit (head of state, President, V.P., with other head of state)	
04	lend	borrow
	sell	buy
	give	contribute
	agree (economic)	
	aid	
	release (assets)	
	grant	
	repay	
	donate	
	allocate	
	reduce (tariff restrictions)	

APPENDIX III (cont'd)

Scale Point	*Good/Preferred*	*Bad*
03	agree	
	sell (military)	buy
	give (material)	
	train	
	supply	
	construct	
	grant	
02	plan (military exercises)	
	participate (maneuvers)	
	conduct (maneuvers)	maneuver
01	unite	agree

Source: Azar (1993).

APPEXDIX IV

CANDIDATES FOR ADDITIONAL VARIABLES

Variable	Description/Classification	Source
Regions	Western Hemisphere (002-199); Europe (200-399); Africa (400-599); Middle East (600-699); Asia (700-899); Oceania (900-999)	Russett et al. (1968)
Regions	North and Central America (002-99); South America (100-199); Western Europe (200-299); Eastern Europe, Scandinavia, and the Mediterranean (300-399); Central and Western Africa (400-499); Southern and Eastern Africa (500-599); Middle East and North Africa (600-699); East and South Asia (700-799); South East Asia and the Pacific (800-999)	COPDAB; Azar (1993)
Regions	Africa; East Asia; Europe (NATO Europe, Warsaw Pact, Other Europe); Latin America; Middle East; North America; Oceania; South Asia	*World Military Expenditures & Arms Transfers*
Regions	Europe; the Americas; Africa; West and South Asia; East Asia and Oceania	Spence (1992)
Great Cultural Domains	European (domain); Chinese; Russian; Islamic; Black African; Hindu; Latin American	Chaliand and Rageau (1992)
Great Religions	Catholicism; Protestantism; Oriental Christianity; Islam (Sunni); Islam (Shiite); Buddhism; Hinduism; Chinese syncretism; Japanese syncretism; Others	Chaliand and Rageau (1992)
Imperial Languages of the World	English; French; Spanish; Portuguese; Arabic; Russian; Chinese; Others	Chaliand and Rageau (1992)
North-South	North = North America, Western Europe, USSR/CIS, Japan, Australia, New Zealand South = Rest of the world	Chaliand and Rageau (1992)
Nuclear Non-Proliferation Treaty	Nonmember states = Cuba, Guyana, Brazil, Argentina, Chile, Spain, N. Korea, India, Pakistan, Iran, Iraq, United Arab Emirates, Oman, Libya, Algeria, Mauritania, Guinea, Tanzania, Zambia, Angola, Zimbabwe, Mozambique, Malawi, South Africa	Chaliand and Rageau (1992)

APPENDIX IV (cont'd)

Variable	Description/Classification	Source
NATO	NATO = Belgium, Canada, Denmark, France, (W.) Germany, Greece, Iceland, Italy, Luxembourg, The Netherlands, Norway, Portugal, Spain, Turkey, UK, the United States	Spence (1992); *World Factbook*
OECD	OECD = Australia, Austria, Belgium, Canada, Denmark, Finland, France, (W.) Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, The Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, UK, the United States	*World Factbook*
OPEC	OPEC = Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, Venezuela	Spence (1992); *World Factbook*
EC	EC = Belgium, Denmark, France, (W.) Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, UK	Spence (1992); *World Factbook*
Warsaw Pact	Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Romania, USSR	Spence (1992)
Arab League	Algeria, Bahrain, Djibouti, Egypt (Suspended), Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, United Arab Emirates, N. Yemen, S. Yemen	*World Factbook*
Commonwealth	50 countries until 1991	
U.S. Core Strategic Associates	Canada, UK, France, Germany, Italy, Japan, Australia, Israel, China/Taiwan, Mexico, Brazil, Spain, Turkey, Egypt, South Africa, Philippines, Indonesia, S. Korea	Cline (1994)
Ideology	The First World, the Second World, the Third World	
Military Base	The presence of U.S. military base in the target nation	
Military Alliance	Formal military alliance between the United States and the target nation	
Cultural Exchange	The annual number of students studying in the United States	
Export	The annual volume of exports from the United States to the target nation	
Import	The annual volume of imports from the target nation to the United States	
Trade Ratio	Import/Export	
DFIhome	The annual volume of direct foreign investment by the target nation in the United States	
DFIaway	The annual volume of direct foreign investment by the United States in the target nation	
DFI Ratio	DFIaway/DFIhome	

APPENDIX IV (cont'd)

Variable	Description/Classification	Source
Geographical Distance	The geographical distance between the United States and the target nation	
National Coastlines	Length of coastlines of the target nation; 1988 data	Kurian (1991)
International Borders	Length of international borders of the target nation; 1988 data	Kurian (1991)
Homogeneity Index	Linguistic and ethnic homogeneity in the target nation; 1960-65 data	Kurian (1991)
Christians in 2000	Estimated percentage of Christians in the target nation in the year 2000; projected data	Kurian (1991)
Muslims in 2000	Estimated percentage of Muslims in the target nation in the year 2000; projected data	Kurian (1991)
Political Rights Index	Justice and order in political rights and liberties in the target nation; 1987 data	Kurian (1991)
Civil Rights Index	Specific rights of individuals in the target nation; 1987 data	Kurian (1991)
Economic Aid Per Capita	Foreign economic aid per capita of aid recipients (the target nations); 1988 data	Kurian (1991)
Development Assistance	Development Assistance as Percentage of GNP in the target nation; 1986 data	Kurian (1991)
Multiple Senders	The number of the sending nations involved in an event	
International Support	The degree of international cooperation supporting the sender's action	Hufbauer et al. (1990a)
Linkage	The presence of issue linkage	
Threat	The presence of threat	
Reciprocation	Is the sender's action a reciprocal response to the action of the target nation?	
Reaction from the Target	Does the sender's action lead to a reciprocal response from the target nation?	
Regime Type	The Democracy/Autocracy Scores in the Polity III or IIId data set as the regime types of the target nations	Jaggers and Gurr (1995); McLaughlin et al. (1998)
Issue Salience	The headline size or the length of media coverage	Gamson and Modigliani(1971); Meernik (1991)
Effectiveness of Foreign Policy	To what extent does the sender's action lead to positive behavioral changes by the target nation, or improvement of the situation?	

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