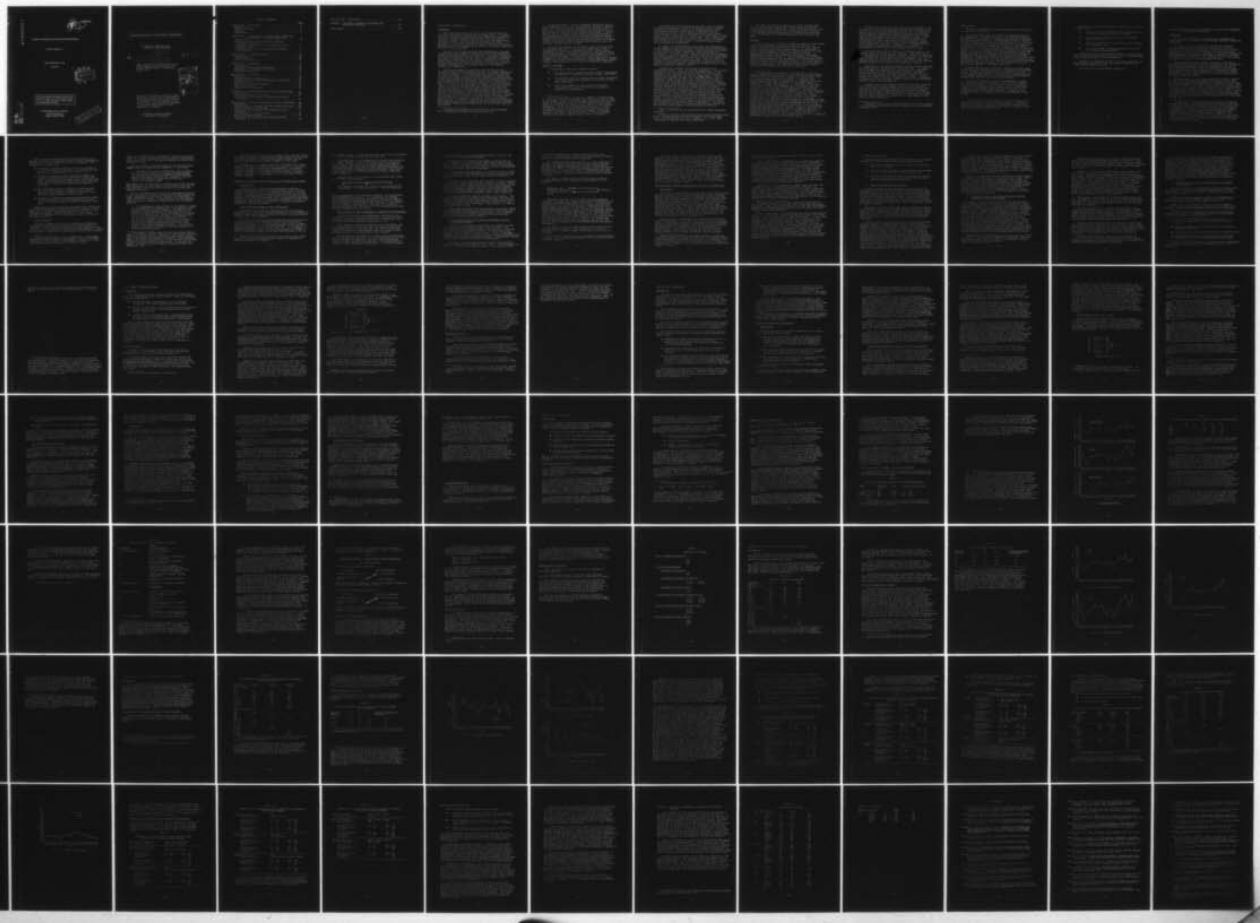
AD-A043 661 CENTER FOR NAVAL ANALYSES ARLINGTON VA F/G 5/4
EUROPEAN PERCEPTIONS AND EAST-WEST COMPETITION, (U)
JUL 77 R B MAHONEY
UNCLASSIFIED CNA-PROFESSIONAL PAPER-19 NL

1 OF 2
AD A043661



55 000190.00

1

B.S

EUROPEAN PERCEPTIONS AND EAST-WEST COMPETITION

Robert B. Mahoney, Jr.

Professional Paper No. 190

July 1977

The ideas expressed in this paper are those of the author. The paper does not necessarily represent the views of either the Center for Naval Analyses or the Department of Defense.

CENTER FOR NAVAL ANALYSES
1401 Wilson Boulevard
Arlington, Virginia 22209

(6) EUROPEAN PERCEPTIONS AND EAST-WEST COMPETITION,

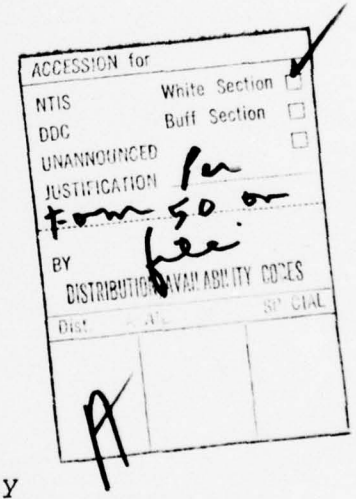
(10) Robert B. Mahoney, Jr.
Center for Naval Analyses

(11) Jul 77

(12) 193 p.

(14) CNA-Professional Paper-194

Paper prepared for presentation at the annual meeting of the International Studies Association, St. Louis, Mo., March, 1977.



077 270

TABLE OF CONTENTS

	Page
SECTION ONE: INTRODUCTION	1
Background	1
Focus of the paper	2
Approach	4
Organization	6
SECTION TWO: THE RELEVANCE OF PSYCHOLOGICAL FACTORS FOR ASSESSMENTS OF EAST-WEST COMPETITION	8
Introduction	8
The Role of Psychological Factors in American and Soviet Analysis	9
Psychological Factors and the Literature of International Studies	13
The Relationship etween Psychological Attributes and Behaviors	17
SECTION THREE: LITERATURE REVIEW	26
Introduction	26
Literature Review	26
Section Conclusions	29
SECTION FOUR: METHODOLOGY	31
Introduction	31
Analytical Problems and Assumptions	32
Responding to the Analytical Problems	38
Regression Statistics	41
SECTION FIVE: INDICATORS	44
Introduction	44
Evaluating the Perceptual Data	46
Tracing the Course of Western European Perceptions	47
Behavioral Data	51
Phases in the Strategic Balance	56
The Defense Burden	57
Summary List of Indicators	58
SECTION SIX: POSSIBLE INFLUENCES UPON ELITE PERCEPTIONS	60
Introduction	60
European Perceptions in Context	61
Sorting Out the Influences on European Perceptions of Tension	65
SECTION SEVEN: POSSIBLE CONSEQUENCES OF ELITE PERCEPTIONS	68
Introduction	68
The Correlates of European Behaviors Towards the USSR	68
Conflict Behaviors in Context	70
Sorting Out the Influences Upon European Conflict Behaviors	74
The Correlates of Defense Burdens	77
Defense Burdens in Context	79
Sorting Out the Influences Upon European Defense Burdens	82

SECTION EIGHT: CONCLUSIONS 85

APPENDIX: ADDITIONAL INFORMATION CONCERNING THE REGRESSION EQUATIONS 87

BIBLIOGRAPHY. 90

SECTION ONE: INTRODUCTION

Background

This paper has been written for a panel* dealing with the systematic assessment of Soviet-American competition. It focuses upon one psychological dimension of this competition, perceptions of Western European leaders concerning the state of East-West tension in Europe. Its goals are to show, in a systematic manner, the course taken by these perceptions in France, the United Kingdom, and the Federal Republic of Germany, and to relate these perceptions to other elements in the system of East-West competition that has existed since WWII.

The way in which these questions are approached in the paper is predicated upon a number of research interests and assumptions which form the background for the analysis. The first of these is my research interest in the role played by psychological phenomena (attitudes, perceptions, and the like) in determining inter-state interactions. While all of the evidence is not yet in, it is my working assumption that these factors have a major role to play in attempts to develop well-articulated models of international conflict and cooperation.

The second assumption is my belief that we need to take a long-term perspective on relationships such as East-West competition in order to capture, to the extent possible, the causal processes at work (particularly the 'structurally conditioned' effects) and to provide the proper context for policy analysis and deliberation. It has become common to deplore the short-term fixations which often seem to dominate the policy process. While much of this short-term focus may be due to situational demands, it is my belief that some of it is due to the fact that the academic and policy analysis communities have not devoted sufficient attention to long-term trends and processes. I believe that we need to take 20 and 30 year retrospective views (and to model processes over these spans) in order to understand the courses which policy could and should take over the next 20-30 years. Over the longer term (e.g., through the remainder of this century) the United States and Soviet Union are most likely to continue to be central actors on the global stage, linked in a network of conflictual and cooperative relations. More attention needs to be devoted to the forms which this structure of East-West competition and cooperation can (and should) take over this period.

---

*"Assessing Soviet-American Relations for the Post-Detente Era", International Studies Association, March 1977.

My third assumption is that 'structural' relations* play a major, underappreciated, role in determining interstate behaviors. Here I have been particularly impressed with the work of Erich Weede (e.g., (1975)) relating the pattern of inter-state war to the hierarchical ordering of the international system. I believe that we need to go beyond dyadic models of attribute distances and reciprocity in behaviors (with behaviors sent being seen as a function of behaviors received) to consider the impact of other factors, such as the strategic balance and the positions of actors within the hierarchic order of international politics, upon the behaviors exchanged between nations.

Finally, the arguments in this paper reflect my belief that the customary depiction of international relations in terms of international 'systems' is essentially correct. Much of the methodological work in the paper is devoted to the problems which result from adopting a systems perspective and attempting to deal with systems as systems, in their entirity, and with the more componential approaches to systems which can be employed in research programs such as the present one where we cannot adequately capture systemic relationships in all of their interdependent complexity.

Focus of the Paper

The paper deals with three substantive issues:

- the course taken by Western European leaders' perceptions of the state of East-West tension in Europe, 1946-1970;
- the possible causes and consequences of these perceptions, their links with other elements in the system of East-West competition;
- other relationships in this network of East-West relations that will be uncovered in the course of examining the perceptions.

---

*The term 'structure' is used in a number of different ways. In this paper the terms 'structure' and 'structural' will be used in two senses. In the first, structures consist of basic relationships, the fundamental elements and operations which any model attempts to capture (cf. Cortes et al., 1974 for a more detailed discussion). In the second meaning the terms refer to those relationships which are based on the order (particularly the hierarchical order) of the international system. The second meaning is obviously a subset of the first. Within the paper the particular sense entailed should be clear in context.

To address the first question we will trace out the pattern of leaders' perceptions in the United Kingdom, France, and West Germany, presenting on a national level data which have been collected and analyzed on the systemic (European) level by Kjell Goldmann (1974). These three states have been selected because of their importance for European and world affairs as major Western European powers on the Central Front. This analysis will use Goldmann's work to show what can be done, within the present state of the art in social science. to systematically monitor elite attitudes and perceptions.

To answer the second question--the causes and consequences of the leaders' perceptions--involves relating them to other facets of the East-West competitive system. Two general types of factors will be involved in these comparisons: non-hierarchical and hierarchical. An example of the former is Soviet conflict towards the United Kingdom as a possible influence upon British perceptions. Here the expectation is that reciprocity will have an effect, with Soviet behaviors influencing British views. With this type of indicator no reference is made (implicitly or explicitly) to the status or relative standing of the Western European nations in the global and regional political orders.

Hierarchical variables reflect the structure* of the international order. There are only two superpowers, each of which leads one of the two alliances in the East-West system. Both superpowers are superpowers because of their greater resources, relative to other nations, as reflected (inter alia) in their military and economic strength (e.g., the size of their nuclear stockpiles, number of men under arms, populations, and GDPs). Because of this international order, it is reasonable to expect some factors to influence the perceptions and behaviors of Western European leaders even though the Western European nations are not directly involved (as the United Kingdom was in the example presented in the previous paragraph). Variables in this category include the behaviors exchanged between the United States and Soviet Union, the state of the strategic balance between the two superpowers, and the articulated perceptions of Soviet and American leaders concerning the state of East-West relations in Europe. In each case the presupposition is that Western European leaders might partially orient their perceptions and actions on the perceptions and actions of the two superpowers. As a result, the hierarchic structure of East-West relations** may account for some of the European leaders' articulations and behaviors.

---

*This is structure in the second of the two senses specified previously.

**Here the term hierarchy refers solely to the differential rank of the European nations in terms of economic and military power. There is no connotation that their behaviors are in some sense 'controlled' or dominated by either superpower.

The answer to the third question, the other linkages which exist in the East-West system, will follow naturally from the investigation of the second issue. This will be particularly true in the analyses which compare the relative predictive efficacy of perceptions and other variables as influences upon criterions such as the behaviors the Western European states direct to the USSR.

Approach

Given the goal of providing a systematic analysis of the course, causes, and consequences of European elite perceptions; the limited amount of work which has been done in this area; and the nature of the questions being investigated (e.g., interactive causal linkages between perceptions and other factors of the sort that are not estimatable by OLS); the paper has a heavy methodological focus. The assumptions developed in the early sections drive later analyses. I believe strongly in the need to present these assumptions and the preliminary analyses they entail. Given relatively strong intercorrelations, it is all too easy to produce a 'final' set of structural equations. The early stages in research programs need to be publically presented to a greater extent than has commonly been the case in the past.*

---

* In methodological discussions it is popular to come out in favor of deduction in preference to induction and to favor causal modelling over the 'atheoretical' analysis of correlations. In my view these assertions miss the point. I think that the psychology and philosophy of research (e.g., Campbell (1966) and Popper (1972)) show that induction, in its purest forms, is impossible. Thought (and analysis) is a patterned activity that never proceeds with pure randomness (how, for example does one select the set of variables in an 'atheoretical' correlation analysis if not on the basis of assumptions?). The real issue, to my mind, is to develop schemes of research which will make implicit causal models and assumptions explicit to the extent that is feasible at a given point in a research program. As a result, I believe that it is important to report analysis of the sort presented in this paper which often precede the development of more 'finalized' causal models. As the presentation of the analysis will show, I prefer many of the research recommendations that often follow from the induction/deduction distinction, e.g., the use of directional hypotheses whenever possible. However, this and other considerations (detailed in the body of the paper) lead me to regard 'structural' equations which are produced on the basis of relatively weak theoretical 'priors' as highly contingent representations of reality. The difference here is one of analytical perspective rather than research methods, per se.

At this point in this research program, I believe that it is not possible to deal with the system of East-West relations in its entirety as a complex interdependent 'whole'. As a result I have opted to employ a componential approach, searching for patterns of covariation--'connections' between elements--that might index some of the dimensions of this larger underlying system. A key question is the extent to which the perceptions analyzed are 'well-connected' with other elements in this (putative) system of East-West relations. While I will, for convenience, employ causal terminology ('causes', 'consequences', 'influences') in my discussions, the network of relationships is too weakly articulated to allow definite causal assertions to be made.

As a political scientist working as a defense analyst, I am concerned with, and write for, two audiences. This paper is of interest primarily to the academic audience. However, it does have some features that are of potential policy interest. The first is that it shows (by a secondary analysis of Goldmann's data) that perceptual matters which play a central role in Soviet and American defense thinking can be assessed in a systematic fashion.

Secondly, one can draw some potential policy implications from the course taken by the perceptual data since 1946. For example, if one assumes that longevity is a partial index of stability, the early dates at which 'psychological detente' (favorable perceptions of East-West relations) occurred in Europe may bear on the long term stability of the 'detente' process. In this regard it is significant that Goldmann's work (1974) is expressly presented as a work of defense analysis designed to assist Swedish national defense decision making.*

Finally, some of the results presented in the paper show that it is feasible, within the present state of the art in social science, to relate aggregate indices such as the perceptual data and data on inter-nation interactions in a meaningful fashion. Over the longer term I expect such indices to play a role in the policy analysis process, with new kinds of 'event data' and other measures being developed in response to the requirements of the policy analysis community.*

---

*Additional implications and speculations based on the analysis of the perceptual data and USIA public opinion polls are presented in Mahoney (1976).

Organization

The paper is divided into eight major sections, of which this introduction is the first.

Section Two deals with the relevance of perceptual matters for assessments of East-West relations. It begins by detailing the important role accorded to psychological concerns in American and Soviet defense thinking.* It then examines some of the ways in which psychological factors have been treated in the literature of international studies, focusing upon their role as causes and consequences of other phenomena, the validity of using public statements as indicators of leaders' perceptions, and the practical research merits of including psychological variables in explanatory models. The section concludes with an examination of one of the major challenges to the prominent role that has been accorded to perceptions (and other psychological dispositions) in defense analysis and international studies: the common finding in the social psychology literature that such factors have low correlations with the behaviors of the actors who have these perceptions and attitudes. This section lays the foundation for our interest in the role played by perceptions in East-West relations.

Section Three reviews literature, focusing on studies which develop systematic assessments of elite attitudes and perceptions; attempt to relate these perceptions to the behaviors of the actors' nations; and attempt to evaluate these relationships over a considerable period of time, in line with the present paper's emphasis upon long-term competitive relationships.

Section Four develops the paper's methodology, It shows why a particular type of regression analysis has been adopted to reflect an interest in systems and the role of structural relations within systems and in response to our limited understanding of the East-West competitive system and the role of perceptions within this larger framework. It deals at some length with some of the analytical concerns introduced in this section.

---

*Some of the Soviet international relations literature is used as the source for Soviet defense analysis. I think it is important to examine the Soviet literature when dealing with questions of the type addressed in this paper in order to avoid unconscious research 'ethnocentrism'.

Section Five presents the indicators that will be involved in the analysis:

- British, French, and German leaders' perceptions of the state of East-West tension in Europe;
- conflictual and cooperative behaviors exchanged between nations;
- phases in the strategic balance relationship between the superpowers; and
- the defense burdens (defense spending/GDP) of the three Western European powers.

Section Six uses the methodology developed in Section Four and the indicators presented in Section Five to investigate some of the possible causes of elite perceptions.

Section Seven compares the impact of elite perceptions and other factors upon the behaviors and defense burdens of the three Western European nations.

Section Eight provides summary conclusions.

SECTION TWO: THE RELEVANCE OF PSYCHOLOGICAL FACTORS FOR ASSESSMENTS OF EAST-WEST COMPETITION

Introduction

This section considers the relevance which psychological factors* have for assessments of the long-term East-West competitive relationship.

The first portion of the section outlines the prominent position which has been accorded to psychological factors in American and Soviet defense analysis. In the course of reviewing this material, some of the more general reasons for directing attention to these factors in evaluations of East-West relations are also considered. The material also helps to correct the mistaken impression that the Soviets are not concerned with the role played by 'subjective' factors in international relations.

The second portion deals briefly with some of the ways in which psychological factors have been considered in the theoretical literature of international studies, focusing upon the ways in which attitudes (and other types of psychological dispositions) can be connected with other factors in the international system, the validity of using public statements as a source for leaders' perceptions, and the practical merits of including psychological factors in explanatory models.

The final portion of the section provides a critical assessment of one of the major challenges to the prominent role that has been given to psychological factors in defense policy analysis and in the theoretical literature of international relations. This challenge consists of the common finding in the social psychological literature that attitudes (and other psychological attributes) are not consistently related to behaviors (e.g., Wicker, 1969). Because one of the major reasons for an interest in perceptions and other psychological factors is their presumed link to national behaviors, this body of social psychological literature needs to be considered in some detail.

---

*At this point in the discussion no distinctions are being made between various types of psychological factors: perceptions, beliefs, attitudes, and intentions. While such distinctions will be relevant at a later point in the analysis, for the moment it is sufficient to consider all of them in terms of their common characteristics. All are acquired (learned) psychological dispositions that might influence behavior (Campbell, 1963). This paper construes perceptions in a fairly narrow sense; other authors (e.g., Cottam (1977) and Kirk (1976) use the construct in a different, more general, way to refer to the total world view or stimulus field of an actor.

The Role of Psychological Factors in American and Soviet Analysis

American Analysis

Within American strategic thought, psychological factors interact with defense policy in at least five ways. The first is that psychological factors help to establish the outline of the questions considered in defense policy analyses (the 'definition of the situation' (Brody, 1966) or policy agenda). Elite and public perceptions help to determine which defense problems are regarded as relatively more important issues, what policy tools are to be considered appropriate means for addressing these problems, and what causal processes are expected to influence policy (the effects that are expected to follow from various courses of action).

Secondly, psychological factors influence the direction policy takes, the ends that are defined as 'national interests' and pursued. In the case of elites*, the effect is fairly direct. In the case of mass publics the effect is indirect, with publics serving (inter alia) to set limits or constraints upon the range of actions that can be taken by leaders (Rosenberg, 1965).**

Thirdly, the strength with which beliefs, attitudes, and intentions are held influences the steadfastness or resolve of policy. In terms of attitude theory, the previous point had to do with the valence of opinion; here the point concerns the intensity with which views are held. Once again elites, as defined, have a fairly direct impact upon policy; publics, an indirect effect.

Fourthly, certain psychological states are likely to be valued in their own right and hence serve as ends for policy actions. One example is the fostering of a prudent level of confidence in the adequacy of American forces, a persistent theme

---

* In this paper elites are defined in structural terms as those individuals who hold leadership positions in national governments. This is similar to the definition proposed and examined by Higley et al. (1976) and matches the definition employed in the collection of the elite perceptual data to be used in subsequent analyses (Goldmann, 1974).

** While there is some argument concerning the extent to which leaders are in fact influenced or constrained by the beliefs and attitudes of mass publics (see especially Caspary (1970), it appears reasonable to assume that there is some general relationship, if only in the perceptions of elites. The focus of this paper is upon elite rather than public perceptions.

in recent annual posture statements by the Secretary of Defense (Schlesinger, 1975; Rumsfeld, 1976). Similarly, high levels of perceived tension would probably be regarded as undesirable states of affairs in and of themselves, the reduction of which would be a major policy concern.

Finally, U.S. policy attempts to influence the psychological assessments of other actors (allied, neutral, and adversary). This influence is directed at all of the points cited previously:

- the formation of national policy agendas,
- the development of national goals,
- the resolution with which policies are pursued, and
- attempts to foster certain psychological states within national populations.

The operation of each of these factors can be seen in American deterrence theory (e.g., as summarized by George and Smoke, 1974). The growth of deterrence theory helped to create a new policy agenda (e.g., the development of new national goals such as secure second strike capabilities). The utility calculations that have become a hallmark of formal deterrence theory (e.g., Schelling, 1960) bear an obvious resemblance to the second of the factors cited above. By the same token, deterrence theory's emphasis upon commitment and credibility indexes the third factor--the intensity with which preferences are held (George and Smoke, 1974: 60; Rummel, 1976: 49).

The fourth point, the notion that defense policy makers attempt to achieve (or maintain) certain psychological states within their national populations is reflected in the course of the evolution of deterrence theory itself. Notable examples are the postulation of the theory of massive retaliation as a response to the 'frustrations' engendered by the Korean War (George and Smoke, 1974: 27) and the goal (in mutual assured destruction approaches to deterrence) of fostering in one's opponent confidence in the survivability of both sides' major deterrent forces (on the latter point, see Chatterjee, 1975: 216-252).

Finally, it has become commonplace in the deterrence literature to note that military actions are undertaken, in large part, for their presumed impact upon the perceptions and evaluations of potential opponents in addition to any tangible ends they might achieve.

These conceptual points have also been expressed in the language of policy, as evidenced by recent posture statements by Secretaries of Defense Schlesinger (1975) and Rumsfeld (1976) concerning such factors as:

- the need for national resolve, as the U.S. engages in a long-term deterrent/competitive relationship with the Soviet Union (Schlesinger, 1975: I-11-12; I-3);

- the need to maintain a rough equivalence between the strategic forces of the U.S. and USSR to ensure that major asymemetries do not develop and to avoid the possibility that misperceptions about the balance might lead to pressures, crises, and confrontations (Rumsfeld, 1976: 48);

- the requirement that U.S. planners be concerned with the confidence of Western European allies in their ability to resist direct or indirect challenges from the Soviet Union (Rumsfeld, 1976: 7); and

- the need to consider the peacetime psychological impact of military forces, such as the employment of naval forces to achieve diplomatic influence (Rumsfeld, 1976: 120).

These policy concerns have also had organization reflections, one of the most prominent of which has been the creation of the office of the Director, Net Assessment within the Office of the Secretary of Defense. One of the concerns of this office has been the assessment of the psychological impact of American and Soviet forces.*

Soviet Analysis

Parallel concern for the role of psychological factors in international relations can be found in the Soviet analytical literature. Georgi Arbatov, the director of the Institute of the United States of America and Canada of the USSR Academy of Sciences, has stressed the importance of psychological factors such as public

*Another manifestation of this interest was a recent DARPA sponsored conference (held at the Washington office of the RAND Corporation in April, 1976) on the themes: "Perception of U.S.-Soviet Balance and Peacetime Uses of Military Power."

opinion in considerations of contemporary inter-bloc relations (1973: 38). Arbatov argues that tactics aimed at influencing public opinion are one of the central elements of modern diplomacy (1973: 7-16).

In his analysis of East-West competition, Arbatov places emphasis upon its psychological component. In his words:

> The cold war is not an ideological conflict between the two opposing systems but a state of acute tension in international relations witnessing a ceaseless arms race and political, economic, and, frequently, military clashes precipitated by imperialism's policies. (1973: 270, emphasis added)

This emphasis on the importance of tension as a factor in East-West competition is quite similar to that found in the work of Kjell Goldmann (1974) which will form part of the basis for subsequent analyses.

In his consideration of the role of psychological factors in the "correlation of forces" (or balance of power between the blocs), Tomashevsky (1974: 82-83) discusses the importance of these "subjective" factors in terms which are not far removed from those found in American considerations of net assessment questions:

> The complexity of the category of the balance of power and its components is apparent also in the peculiar range of objective and subjective factors. For example, the subjective factor--evaluation by participants in international relations of the relative strength of one another and of the general balance of power, may sometimes play the role of an element of the objective situation. Irrespective of whether such an evaluation is correct or not, it may engender certain actions and bring about consequences of an altogether objective nature, and a change in the objective balance of power. In this connection, the role of information (and misinformation) is growing in world politics.*

*Tomashevsky's analysis also reflects the growing sophistication of Marxist-Leninist theories of international relations, which grant greater relative autonomy to non-economic factors (such as the subjective elements cited above) in the determination of inter-state behaviors (e.g., 1974: 36) than was the case in earlier Soviet theoretical formulations. There have been parallel developments within democratic marxian theory (e.g., Harrington, 1976).

There is also reason to believe (Jones, 1975) that the Soviets are highly concerned with the domestic psychological ramifications of their foreign policy actions, particularly insofar as they might influence the Soviet public's support of the regime.

Finally, as is the case in the U.S., the theoretical concern with the importance of psychological considerations in interstate relations has had organizational manifestations. For example, a recent assessment of the Soviet Institute of the U.S.A. and Canada notes that it is concerned with the analysis of American policies, opinions, and attitudes (C.I.A., CR 76-10844, 1976: v (emphasis added)).

Psychological Factors and the Literature of International Studies

Introduction

Interest in the role played by psychological factors in inter-nation relations has been a major concern within the international studies literature. In examining this body of research we are, at present, most interested in work dealing with the ways in which elite perceptions and attitudes might be related to other factors in the political environment (e.g., the behaviors exchanged by nations), the validity of using public statements to index elite perceptions, and the practical merits of including psychological variables in explanatory models.

Causes and Consequences of Elite Perceptions

Considering the system* of elements that make up East-West relations (e.g., intra and inter-bloc behaviors), elite perceptions appear to have two obvious connections to other, non-psychological, elements within this framework.

The first is that they influence (and hence are predictors of) foreign behaviors. This connection between perceptions (and attitudes) and action is so obvious and so much a part of common-sense thinking that it is often simply asserted in discussions of psychological factors (e.g., Hveem, 1972: 10). It is, however, a somewhat problematic assertion, given the findings of a number of social psychological studies which have found attitudes to be, at

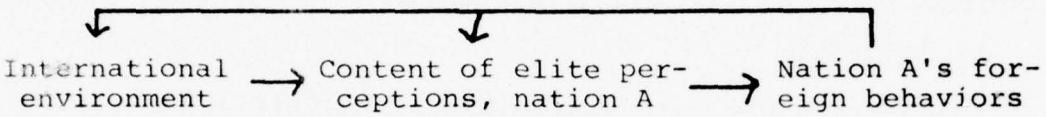
---

*Most of the literature reviewed in this section has focused upon the larger international system of which the ensemble of East-West relations is a subset.

best, weakly related to behaviors (an issue that will be considered at length in the final portion of this section).

The second type of relationship has to do with the influences which other factors have upon the content of elite perceptions. For example, in her analysis of elite and public attitudes in Norway, Hveem (1972) found that in many instances the content of Norwegian elite attitudes took the forms that would have been predicted on the basis of Norway's structural position within the global system (e.g., its characteristics as a small, developed, Western nation).

Combining these two perspectives (and inserting some reasonable feedback relationships):



gives us some ideas of the potential complexity of the questions being addressed in this paper. It is apparent, for example, that standard (OLS) regression techniques could not be used to estimate a set of equations which reflected this set of relationships (because of the feedback; Heise (1975: 155)). (This point will be pursued in Section Four). Both types of connection between perceptions and other facets of the international environment will be examined in this paper.

The Validity of Public Statements as Indicators of Perceptions

There are essentially two methodologies with which elite perceptions can be systematically assessed: surveys and content analysis. Since the relevant surveys were not conducted in the past, only the latter approach is available to us.

This, however, leads to an important set of questions. Can we believe what politicians say? Are their publicly expressed views necessarily their true beliefs? Are these articulations necessarily related to their actions (and, as a result of their leadership roles, to the behaviors of their nations)?

The first point that needs to be noted is the key difference between the last two questions. It is not necessary that we delve into the psyches of leaders to find their "true" perceptions (indeed, in some respects actors may not be completely aware of their own "true" perceptions and beliefs). It suffices, rather,

that we find some set of articulations which are likely to be related to their behaviors as leaders.

Construed in this fashion, the answer to the question is that it appears that we can believe what leaders say, at least a large part of the time. The reasons for this (as presented by Brodin (1972)) are based on their roles as national spokespersons addressing domestic and foreign audiences.

As spokespersons leaders have to be concerned with the probable impacts which their statements will have upon domestic and foreign audiences. There are at least two major effects of concern.

The first is the confusion that can result if their behaviors are manifestly inconsistent with their public statements. While in some cases leaders might attempt to exploit this confusion for tactical advantage (by saying one thing, to mislead opponents, while doing another), there is always a concomittant danger of confusing allies and domestic groups as well. The dangers that follow from confusing one's supporters are no small liability.

The second effect is upon the credibility of leaders. Persistent inconsistency can reduce their legitimacy and status as leaders. At some point the inconsistencies between their articulations and actions will no longer matter, because no one will place any credit in their statements. This results in a loss of status and effectiveness.

While these two effects do not guarantee that leaders' statements will always correlate with their actions, they do provide some reasonably strong grounds for expecting to find a general congruence between the public statements of elites and the actions they have their nations take.

The Practical Merits of Including Psychological Factors in Explanatory Models

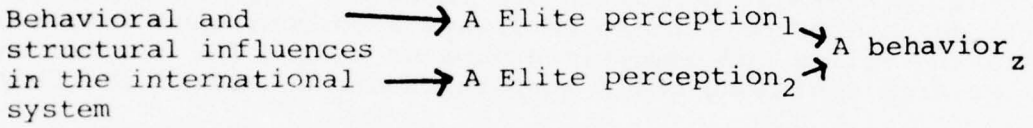
Because of the practical difficulties and expense involved in collecting content analytical data, the question of the practical merits of including psychological variables in explanatory models has considerable relevance. Any modelling effort involves simplifications of various types. Does a "black-box" approach suffice? Given a regression equation with non-psychological variables as predictors, does the inclusion of psychological factors significantly increase the accuracy of predictions?

Relatively little research has been done on this question. The best recent review is that of Holsti (1976). Based on Holsti's survey it is fair to say that the issue of the practical merits

of including psychological variables remains largely open, though some promising signs indicate that psychological variables may make a genuine and significant difference.

In considering this issue, however, it is also important to consider the various forms which the practical merits question can take. The model presented above, in which psychological variables are added to a regression equation, is only one form of the question. It is not just a case of adding additional independent variance to a model, it is also a question of producing an accurate causal (structural) model which will lead to correct inferences.

For example, assume that the following model accurately reflects the major causal influences upon a behavior "z" of nation A.



This model could be true, yet adding the two perceptual variables to a model that already incorporated the behavioral and structural influences might have little effect. This would be particularly so if the perceptions were highly correlated with the behavioral and structural influences. Obviously this is a highly simplified example. In more realistic situations, perceptions could be important yet add little to non-perceptual explanations for a number of additional reasons (e.g., the wrong perceptions are being included, only a portion of the relevant perceptions are being used, the reliabilities of the perceptual data may attenuate correlations, etc.). However, the example does make the necessary point, that one needs to make at least two types of test in evaluating the relationship between perceptions and behaviors.

The first is the relationship between psychological factors and the criterion behavior. This establishes the initial plausibility of a linkage between psychological factors and the criterion.

The second is a test which also incorporates non-psychological predictors. This considers some aspects of the relative efficacy or "merit" question.

The point to note is the type of evidence that each test provides. The absence of a relationship in the first case is fairly strong evidence against a relationship between the psychological factors and the criterion behavior (assuming adequate measurement, etc.). Given a set of psychological factors that have some relationship to a criterion behavior, the finding that they add little to an explanatory model of non-psychological factors provides much more ambiguous evidence, particularly when the test takes the form of a single OLS regression equation. The possibility exists that the underlying process is one that a single OLS equation test of this type cannot adequately capture and that the role of psychological factors in some intermediary process might be lost. While this may have little practical effect for some purposes, for certain types of structural modelling it can have critical import.

The Relationship Between Psychological Attributes and Behaviors

The Problem

It is fair to say that much, if not most, of the interest that has been directed to the roles played by perceptions, attitudes, beliefs, and intentions in Soviet and American analyses has been based on the simple assumption that attitudes (and kindred psychological factors) cause, and hence predict to, the behaviors of the actors who hold them. Beliefs, values, and perceptions are of interest primarily because of their presumed impact upon decisions (Brodin, 1972). Stated in these terms, the assumption hardly appears controversial. While there may be disputes concerning our practical ability to isolate the "true" perceptions and beliefs of leaders, the notion that these factors should, once identified, predict to their behaviors is a commonsensical one, similar to assumptions used in everyday life.

However, despite the prevalence and intuitive plausibility of this assumption, beginning with the pioneering work of LaPiere (1934), a large body of work has accumulated in the social psychological literature which supports the proposition that psychological dispositions (attitudes and the like*) do not predict to behaviors (e.g., the reviews of Tittle and Hill (1967) and Wicker (1969)). Psychological factors, at least as they are usually measured (e.g., survey instruments, content analysis)

*While most of this literature deals specifically with the relationship between attitudes and behaviors, the arguments can be readily generalized to beliefs, perceptions, and intentions. All are acquired psychological dispositions which are of interest, to a large extent, because of their presumed relationship to behaviors (Campbell, 1963).

do not appear to be systematically related to the actions of the actors who hold them.

Clearly this finding, corroborated in an impressive number of studies, constitutes a direct challenge to the role customarily accorded to psychological factors in defense analysis and international studies. Moreover, it is not an easy challenge to meet. It is not enough to defend the assumption of a linkage between attitudes and behaviors by directing general criticism at the methodologies employed in these studies--some are quite respectable illustrations of the state of the art in attitude measurement.* If the state of the art is inadequate, then there is little hope for empirical research into the role played by these factors in prompting the interstate interactions that are the focus of much of defense analysis and international studies**

Similarly, it is not possible to simply ignore the issue and attempt to settle the question empirically by searching for correlations between psychological factors and leaders' behaviors. Such findings have no meaning outside of a conceptual schema that gives them some a priori interpretability. Any conceptual system that does not come to terms with the "challenge" of the social psychological studies noted previously would simply beg the question. Relief has to be sought along other avenues.

---

*Moreover, the state of the art in attitude measurement is not far different from that in other areas of personal and social psychology. Argyle and Little (1972: 10-11) note that questionnaire measures of intelligence and personality traits usually have very low correlations with behaviors.

**Other "challenges" to the importance accorded to psychological factors in international relations and defense analysis also exist, but are of less relevance for our immediate purposes. In some cases it may be that the preponderant direction of causality is from behaviors to attitudes (Larsen et al., 1969 review some of this literature). Even if this is the case, there should still be a correlation between the two. Similarly, whatever the empirical relationships that are involved, it is often likely to be the case that systematic analyses of psychological factors falls outside of the area of "comparative advantage" for researchers who lack access to highly classified policy documents. Some perceptions are unlikely to be available for analysis, whatever their relevance. Again, this does not bear directly on the theoretical point being considered here.

Solving the Problem

Three approaches offer promising responses to the "challenge" posed by the social psychological studies cited previously:

(1) some detailed methodological critiques that have been made of the studies;

(2) criticisms that have been directed at the non-contextual designs employed in some of these studies; and

(3) efforts to redefine the types of psychological factors that are of potential interest and the varying ways in which they might relate to behaviors.

(1) Detailed Methodological Critiques

A number of analyses have made detailed criticisms of the techniques employed in the studies which have found little relationship between attitudes and behaviors. These analyses differ from the general criticisms considered (and rejected) previously in that they are made within the context of the prevailing state of the art in attitude measurement. As a result, to the extent that their "counter-challenges" are accepted, their results augur favorably for attempts to empirically relate psychological factors to leaders' behaviors.

The first criticism is that the criteria employed to select the attitude(s) to be correlated with behaviors are often unclear. There is always the possibility that the wrong attitude is being examined. As a result, (as Fishbein and Ajzen note (1975: 356)), many tests of the relationship between attitudes and behaviors can be regarded to a large extent as tests of the researcher's intuition.

Secondly, many of these studies fail to distinguish between attitudes towards an object or actor and attitudes towards a behavior (Fishbein and Ajzen, 1975). While, in certain contexts, either or both might be related to behavior, the relationship between attitude towards a behavior and subsequent action is likely to be the stronger of the two. For example, a Western decision-maker might have a very negative attitude towards the Soviet Union (an actor/object) while also having a very positive opinion concerning the conclusion of certain types of international agreements with the USSR (a behavior). Obviously the latter attitude would be the better predictor of her/his nation's propensity to conclude agreements of that type with the USSR. In their review of the literature, Fishbein and Ajzen note that when attitudes towards a behavior have been employed, significant relationships with behavioral criteria have often been found (1975: 361).

Turning to the indices of behaviors employed in these studies, it can be seen that they suffer from a number of problems. In many instances only a single action is used as a criterion (a behavior is or is not performed). This raises obvious questions concerning the validity and reliability of the behavioral indices (Campbell, 1963). Low reliabilities can act to attenuate correlations. In this regard it is significant that Fishbein and Ajzen's review indicates that when multiple actions are used to construct an index of behavior, attitudes are more likely to be found to have a relationship with behaviors (1975: 361).

Finally, the behavioral and attitudinal measurements employed in a number of studies (cf. the review of Campbell, 1963) suffer from the problem of differential thresholds. For example, an attitude instrument may reflect many shades of prejudice while behavioral criteria may only distinguish between extremely prejudiced individuals who are willing to act in a prejudiced manner in public settings where norms clearly do not favor such behaviors and those who are not extremely prejudiced. These threshold differences can act to reduce the observed correlation between attitudes and behaviors.

(2) Criticisms Directed at the Non-Contextual Designs Employed in Some of the Studies

A number of recent international relations studies have placed increased emphasis upon the need to consider the context within which interactions take place as one guide to the understanding of behaviors (e.g., Senghaas, 1975; Druckman and Mahoney, 1977). It is not enough to simply monitor the flow of behaviors between actors. Similar patterns of behavior (e.g., a certain level of verbal conflict) can have markedly different meanings in different contexts. Within an established alliance relationship, verbal hostility (even threats) may be used to seek tactical advantage without necessarily challenging the basic structure of the relationship itself (Senghaas, 1975). It may even be taken as an index of the strength of the relationship, demonstrating that it can survive a given level of stress. In the absence of such a structure, the same level of verbal hostility (as reported, for example, on one of the standard event data scales) may have a markedly different meaning, denoting a substantial deterioration in the relationship between two parties.*

*The structure of the relationship need not take the form of an alliance. Other forms of "common fate" (Campbell, 1958) may also serve in this role. This point is considered at greater length in Druckman and Mahoney (1977).

Considerations of context are of direct relevance when dealing with the relationship between attitudes and behaviors. Attitudes are acquired psychological dispositions which are presumed to affect subsequent behaviors (Campbell, 1963). However, attitudes are not the only (or even necessarily the principal) influences upon actions.

Behaviors, in field theory terms (Lewin, 1951; Rummel, 1975) are a function of all of the forces acting upon an actor at a given time. Environmental contingencies are also of significance. For example, Fishbein and Ajzen (1975) posit that actor's subjective norms concerning the performance of specific behaviors also influence actions. These norms (1975: 302) deal with the influence of the social environment upon the actions. Hence, if extremely detrimental consequences are likely to follow from certain behaviors (such as being fired if one acts in a prejudiced manner on the job or having customers make a scene if an interracial group is not given lodging in Lapiere's classic study (1934)), these norms, and not attitudes (however prejudiced), are likely to be the preponderant influence upon behavior.

This suggests a reformulation of the attitude-behavior linkage. Attitudes are most likely to predict to behaviors when the environmental contingencies and social norms at the time that the attitudes are measured are most similar to those at the time the behaviors are performed.

This reformulation helps to account for Hovland's finding (1959) that attitudinal change tends to be much greater in experimental studies than in survey research. The attitudes in the former case are likely to be adapting to an artificial environment whose contingencies have little relevance to the universe in which the attitudes tapped by survey items deal and in which a more general range of criterion behaviors are performed.

Moreover, the reformulation has the interesting implication that content analysis techniques may be superior to survey instruments not only because they are non-reactive (Webb, et al., 1966),* but also because they are likely to implicitly incorporate the same set of norms and environmental contingencies at the time of measurement of the attitudes and of the criterion behaviors.

---

*In this regard, Gaertner (1976) has recently shown the utility of non-reactive field experiment methods for the identification of prejudiced attitudes and behaviors in situations which have few clear-cut norms prescribing behaviors.

Some empirical support for this field theory perspective is provided in the work of Argyle and Little (1972) and Acock and DeFleur (1972). Both studies conclude that psychological dispositions, situational factors, and (quite significantly) the interaction effect of attitudes * situational factors contribute independently to the determination of behaviors. Similarly, in their evaluation of subjects' coalition formation behavior in simulated negotiating environments, Krause, Druckman, Rozelle, and Mahoney (1975) found that both programmed (situational) factors and subjective utility estimates (analgous to other forms of psychological dispositions) make statistically significant and independent contributions to the determination of coalition formation outcomes.

(3) Reconceptualizations of the Psychological Influences Upon Behavior

The final response to the "challenge" involves the development of a better theoretical specification of the problem. The two best efforts in this vein are those of Fishbein and Ajzen (1975) and Campbell (1963).*

Fishbein and Ajzen's approach involves the disaggregation of the various types of psychological disposition involved in the attitude-behavior relationship, as shown in Figure 2.1.

Three points are noteworthy. The first is that Fishbein and Ajzen clearly distinguish between psychological dispositions having to do with objects and those having to do with behaviors.

The second point of significance is that they distinguish between various types of psychological disposition (types which are often confounded in other studies):

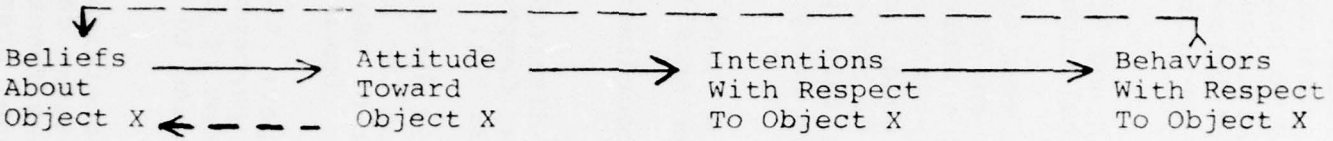
- various cognitive beliefs concerning objects, the estimated consequences of actions, and relevant social norms;
- subjective norms which mediate the impact of situational factors upon the actor;
- intentions, which are the proximate causes of behaviors; and
- attitudes, which deal with the evaluative or affective orientation of the actor towards behaviors and objects.

*By this point the reader will have noted my heavy indebtedness to both works, as reflected in the preceding two parts of the discussion.

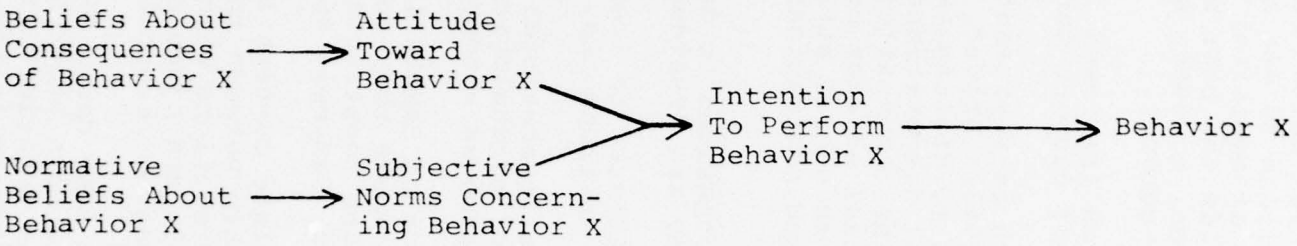
FIGURE 2.1

FISHBEIN AND AJZEN'S (1975) MODELS OF THE RELATIONSHIP BETWEEN PSYCHOLOGICAL FACTORS AND BEHAVIORS

(A) Attitudes/Behaviors Towards an Object:



(B) Attitudes/Behaviors Towards Specific Behaviors:



(Fishbein and Ajzen (1975: 15-16))

Influence ——→

Feedback ←- - -

The third point of importance is that Fishbein and Ajzen specify causal structures which relate these various types of psychological dispositions to one another and to behaviors. Clearly, for purposes of empirical prediction, intentions will (in this scheme) provide the best estimates of behavior. For purposes of explanation, however, all of the psychological factors have to be taken into account.

Empirical research (reviewed in Fishbein and Ajzen (1975)) provides a good deal of support for this formulation.

A second approach is represented in the work of Donald Campbell (Campbell (1963); Brewer, Campbell, and Crano (1970)). Instead of attempting to distinguish between a number of separate types of psychological dispositions (e.g., intentions vs. attitudes), Campbell emphasizes the communalities which underlie more than 50 seeming disparate social science concepts. He notes (1963: 95-107) that such constructs as social attitudes, beliefs, percepts, intentions, habits, and evaluations all share two points in common:

- they are hypothesized to develop as a function of learning (they are "residues of experience");
- they are postulated to lead to the coordination of behaviors in environments.

In the absence of operational evidence distinguishing between these various types of psychological factors, Campbell argues that the terms can be treated as synonyms (1963: 97).

Clearly the tenor of Campbell's analysis differs from that of Fishbein and Ajzen. Where they postulate, on the basis of the a priori nature of the constructs, a number of separate types of psychological factors, Campbell searches for communalities.

Given our immediate concern in this paper: the search for a meaningful relationship between the tension perceptions of Western European leaders (perceptions which share some of the aspects attributed by Fishbein and Ajzen to beliefs and to attitudes), can these two orientations be reconciled?

It appears that they can. Given the specification of Fishbein and Ajzen's model, factors other than intentions can have a nearly direct influence upon behaviors if intentions function as an "open" switching mechanism in the causal model presented in figure 2.1. Thus, in either scheme, there can be a theoretically meaningful relationship between attitudes (or any other element in the causal network) and behaviors. Fishbein and Ajzen conduct exactly

this sort of analysis in their investigation of the relationship between attitudes towards and object and behaviors (1975: 361-368).*

*A more general reconciliation of the two approaches would involve two steps. The first would be to show that items tapping the constructs in Fishbein and Ajzen's formulation represent different dimensions or factors (Brewer, Campbell and Crano (1970)). The second step would be to demonstrate that the postulated causal sequence is superior to alternative models, e.g., a regression model in which each factor had a direct influence upon behavior without being mediated by intentions. The best study in the latter vein is that of Mlotek and Rosen (1974).

SECTION THREE: LITERATURE REVIEW

Introduction

This section reviews the findings of previous studies which share, to a substantial extent, the principal focuses of this paper. These are studies which:

- develop systematic assessments of elite attitudes, perceptions, and other psychological dispositions,
- attempt to relate these elite psychological characteristics to the internal and/or external policy actions of the elites' nations, and
- evaluate these relationships over a considerable period of time, in line with the present paper's emphasis upon the assessment of long-term competitive relationships.

After a fairly extensive review of the literature, very few studies have been found which meet these criteria: Peterson (1972), Holsti and Sullivan (1969), Goldmann (1974), and Rattinger (1975). This in itself is an important finding which will influence the methodological orientation of the analyses to follow (methodology is the focus of the next section). While there have been many studies dealing with psychological factors that might bear on interstate relations (cf. the remarks of Jones and Singer, 1972: 8-9), there are very few works which attempt to come to a systematic assessment of the roles these factors play as consequences and causes of other factors in the international system.

Literature Review

Peterson's analysis (1972) deals with the relationship between official U.S. attitudes, American public opinion, and Soviet-American conflict over the period 1955-1964.

The favorableness of American elite attitudes towards the Soviet Union was obtained by means of a content analysis of the Department of State Bulletin, using the Janis-Fadner coefficient of imbalance* to index variations in favorableness over time. The low point over the decade surveyed was 1961--the year of the Berlin Crisis--followed by 1956--the year of the Hungarian and Suez Crises.

*This statistic is described in Section Five.

Public opinion data was obtained from standard survey sources. Items dealing with the American public's impression of the USSR were combined to produce yearly assessments of favorableness. As was the case with the elite data, the low point during the period surveyed was 1961. American-Soviet conflict behavior was obtained by applying Rummel's event data coding scheme (1966) to Facts on File.

Using rank-order correlation analysis, Peterson found that neither elite nor public attitudes had any strong relationship with the amount of conflict directed to the Soviet Union by the U.S. There were, however, strong relationships between American and Soviet conflict behaviors (rho = .66) and between American public and elite opinion (rho = .75) and a modest relationship (rho = .38) between American elite attitudes towards the USSR and American conflict behaviors directed to the Soviet Union. This last correlation is of the most immediate concern, since it supports the proposition that national elite attitudes are related to the foreign behaviors of their nations, a substantive proposition whose methodological implications were examined in the previous section.

Holsti and Sullivan (1969) relate Chinese and French elite attitudes to the behavior of their nations as non-conforming members of their respective alliances in the 1950s and 1960s.

Elite attitudes were derived from a content analysis of the Chinese press (People's Daily and People's China) and from the speeches and press conferences of the Presidents, Premiers, and Foreign Ministers of the 4th and 5th French Republics. Data were collected over the period 1950-1965 for the Chinese elite and 1945-1966 for the French.

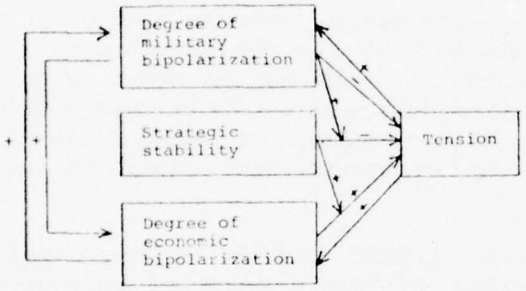
These elite attitudes were then related to changes in the relationships of both nations with their alliances, comparing attitudes before and after major shifts. The major shift for France was set in 1958, with DeGaulle's accession to power and the beginning of the 5th Republic. The Chinese break-point was set in 1962, the year of the Quemoy crisis.

Comparing pre and post-shift attitudes, it was found that the Chinese elites tended to direct more criticism to the alliance leader (the USSR) across a wide variety of topical areas. The French elites displayed a different pattern. While post-1958 statements were more critical of the alliance leader (the U.S.), this criticism was more focused than in the case of the Chinese, centering on security issues rather than a broader range of concerns. There were also more favorable remarks concerning the Western Alliance system as a whole following the break than before it.

Kjell Goldmann's analysis of tensions and detente in Europe, 1946-1970, is the study of most obvious relevance for present purposes (1974). The perceptual data to be presented in Section Five were taken from this research project.*

Goldmann's analysis differs from the present effort in one key respect. Goldmann conceives of tension as a systemic property. As a result he aggregates his national level tension scores (e.g., the yearly tension perception values for the UK) into alliance (NATO and WTO) and regional (European) scores. These aggregate, system-level, values are then related to a variety of European systemic factors in the model presented in Table 3.1.

TABLE 3.1



(Goldmann, 1974: 202) Relations between tension, bipolarization, and strategic stability.

In this model, which is the focal point of Goldmann's study, strategic stability ('parity') tends to promote a lower level of perceived tension. At the same time, however, military bipolarization (the strength of the NATO and WTO alliances) also has a major role in affecting the course of tension. It is Goldmann's contention (1974: 215) that even in an era of 'detente' these alliances continue to have a major role to play in fostering lower levels of East-West tension since they help to ensure that strategic stability will be maintained and assist in restraining the more adventurous members of each bloc from undertaking actions that might exacerbate East-West relations.

The final study to be reviewed in this section (Rattinger, 1975) also employs the Goldmann perceptual data set, but on the national level. Rattinger's interest is in the comparative impact of bureaucratic momentum (previous expenditures), tension

*Because this data is presented and evaluated in Section Five it will not be considered in detail here.

levels (measured, using a variant scoring technique, by Goldmann's elite perceptions of tension data), and the spending of members of the opposing alliance (action-reaction) as influences upon the military expenditures of European nations.

As would be expected, he finds that previous expenditures are, by and large, efficacious predictors of current defense spending levels in both NATO and WTO nations. There is also some evidence for reactive spending (in response to the effort made by the opposing alliance), particularly so in the cases of France and Great Britain.

When Rattinger 'removes' the effect of bureaucratic momentum from the defense expenditure estimates (by regressing them on previous values and using the residuals as his new dependent variable) the relationship between these deviations from expected trend levels and the perception scores varies over the two alliances. Tension scores were more effective predictors for the expenditures of WTO states (except for Hungary and the GDR) than they were for NATO nations. He suggests (1975:594) that this difference may be due to the more centralized nature of political-military decision making in the Warsaw Treaty nations, which allows external influences (such as tension) to have wider ramifications within the policy and budgetary processes.*

Section Conclusions

Given a review of only four studies, it is difficult to come to any detailed conclusions that could guide the present analysis. However, two points do stand out.

The first is that each of the studies reviewed found some relationship between elite attitudes and perceptions and a national behavior which had political-military import. Hence it appears to be within the state of the art in international studies to attempt to come to grips with questions of the sort being examined in this paper.

The second point is that while we are far from an comprehensive understanding of the details and dynamics of the process by which elite perceptions interrelate with other facets

*Another facet of this question, the relationship between elite perceptions of tension and the defense burdens (defense expenditures/GDP) of their nations, will be explored in Section Seven.

of the international political environment, the material reviewed (particularly the model produced by Goldmann's study, the most developed of the analyses examined) suggest that these are very complex relationships involving interaction between perceptual and nonperceptual factors. This, in turn, raises some serious methodological problems, since standard techniques (e.g., OLS) are not designed to deal with interactive causal processes. Hence the literature review sets the stage for the consideration of methodology in the next section.

SECTION FOUR: METHODOLOGY

Introduction

This section sets forth the rationale for the type of regression analysis that will be employed in the hypothesis testing sections of the paper (Sections 6 and 7). The purpose of these analyses is to come to a systematic assessment of the role played by European elites' perceptions of tension as a consequence of, and influence upon, other factors in the international political system.

The regression analysis has been specifically tailored to the questions under investigation. This has been required, in large part, because not enough is known about the relationships in question to allow more sophisticated analytical approaches (such as path analysis and related structural equation techniques*) to be profitably employed.

The type of analysis employed in the hypothesis tests and the reasons for its adoption need to be considered for three reasons. The first is that the assumptions that lead to its adoption are implicitly incorporated in the analysis and its conclusions.

The second reason is that this type of regression analysis differs from other approaches to regression-based inference in a number of ways:

- Ordinary Least Squares estimation procedures are used in situations in which other studies might employ Generalized Least Squares, Two Stage Least Squares, or Full Information methods;

- a priori causal structures are specified in less detail than is the case in other approaches (such as path analysis);

- the regression analysis centers upon the interpretation of the amount of variance accounted for by predictors and the patterns taken by residuals; relatively little attention is given to the standardized partial regression coefficients that are the primary emphasis in path analytical approaches;

---

*For present purposes, path analysis and related structural equation techniques are the types of procedures presented in Heise (1975), Goldberger and Duncan (1973), parts II and III of Blalock (1971), Hilton (1976), and the annual/bi-annual volumes in the Sociological Methodology series.

- variables are not transformed, much unlike the case in other methodologies in which such transformations are a routine operation and/or in which variant forms of regression are employed which are equivalent to performing OLS regression on transformed variables (e.g., GLS (Hibbs, 1974: 268).

The final reason is that the problems presented in this analysis are hardly unique. Due to the impoverished nature of social theory, most research programs involves a preliminary stage in which not enough is know about relationships to allow more advanced structural equation techniques to be routinely applied. There is a need to develop a more programmatic approach to the research problems which emerge in the preliminary stages of formal modeling.

Of necessity, what follows is a somewhat technical discussion (I will, for example, assume familiarity with structural equation methodologies). Non-technically oriented readers may wish to skim (or skip) this section.

Analytical Problems and Assumptions

Introduction

The form taken by the regression analysis is due to three initial assumptions and problems:

- the limited understanding, within the field of international politics, of the causes and consequences of European elite perceptions and the impact which this limited understanding (reflected in the literature review in the previous section) has for statistically-based inference;

- the inferential consequences which following from taking the concept 'system' seriously in attempts to analyze aspects of the international political system;

- the importance of 'structures' and 'structural' relationships in political inquiry and the problems these considerations pose for analysis.

Before these three points are considered, some preliminary remarks are in order.

The first is that the point at issue in this argument is not the appropriateness of more formal scientific (and statistical)

approaches for the types of questions being investigated. To the contrary, the present analysis is self-consciously located within what Zinnes (1976) has identified as the scientific study of international politics.

Secondly, the point at issue is not the correctness or validity of path analysis or other structural equation methods. Where its assumptions can be met, path analysis can and should be used. The point at issue, rather, is that structural equation approaches require fairly strong assumptions. If these assumptions are not met, then meaningful path analysis is not possible (e.g., Heise's remarks (1975: 191-193) on the need for a correct a priori specification of a causal structure before meaningful causal parameters can be estimated). The issue is the appropriateness of path analysis for a certain class of problems into which the present research questions fall. Its validity for those problems which meet its assumptions is not being challenged.

Finally, this is a most preliminary investigation of the methodological problems involved in this class of research questions. I have sketched only those portions of the basic issues which bear most directly on the substantive questions being examined. Much more needs to be done.

The rest of this section of the paper is organized into two parts. The remainder of this portion of the section will involve the three initial analytical problems presented above. The final portion of the section will show how these problems and assumptions are reflected in a particular approach to regression analysis, an approach which has been tailored to the types of questions being investigated.

Limited Understanding of the Role of Elite Perceptions

The literature review in Section Three brought out the first analytical problem: the limited understanding, within the field of international politics, of the causes and consequences of European elite perceptions. While, as brought out in Section Two, there are good general reasons for assuming that elite perceptions play some role, we don't understand the precise forms that this relationship takes.

As a consequence, the research questions being considered differ from the usual problems considered in structural equation analyses in which parameter estimates (of the standardized or unstandardized partial regression coefficients) are the principal item of interest. Given the limitations of theoretical and empirical work in this area, we cannot meet the specification

requirements that such parameter estimates would require. We aren't certain what variables should be included in equations.*

This is a critical problem (Wonnacott and Wonnacott, 1970: 312-313; Gordon, 1968) if only because the magnitudes of the parameters estimated are dependent upon the other variables included as predictors in the equation. Moreover, in some cases the sign of the parameter can also vary!

There is no clear-cut solution to this problem, short of conducting the additional theoretical and empirical research that is required to produce the network of specifications. There is, however, an interim resolution to the problem in the form of a problem-shift. Instead of focusing upon parameter estimation, attention can be directed to the logically prior 'model testing' phase in the research program (Kenny, 1975: 896) in which various sub-specifications (selected portions of the analytical system) are evaluated by the empirical comparison of various bi and multivariate relationships.

For example, one might initially hypothesize that a set of predictors have a causal linkage to a criterion. Evaluation of bi and multivariate regressions would allow some of the initially plausible relationships/hypotheses to be rejected. This can be regarded as analogous, to some extent, to Heise's (1969: 59-61) 'theory trimming', though it takes place at a more elementary stage in the research program. It should be noted that this procedure does not involve atheoretical 'correlation hunts'. A set of plausible initial relationships are specified, in the form of hypotheses which are to be comparatively evaluated. However, it involves far less specification than is found in the usual path model in the literature.

Obviously what I'm proposing here isn't revolutionary. It is generally recognized (e.g., Heise, 1975: 194-195) that certain pragmatic components have to enter into any research

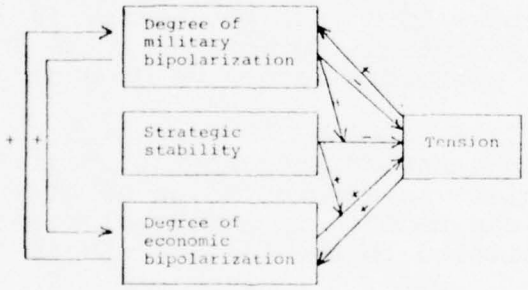
---

*Even in economics, a field with much more extensively developed theoretical 'priors', it is recognized that the parameters which are estimated in the initial stages of research programs can be highly problematic (e.g., the coefficients can have signs which are the opposite of those anticipated on the basis of economic theory and prior research experience). As a consequence, there is a need to apply TLC (tender loving care) to the initial parameter estimates (Howrey et. al., 1974).

program, at least in the first stages of model building. The important point, rather, is that these preliminary stages should be, to the extent possible, public (and therefore more scientific) enterprises, open to criticism and (therefore) improvement. Even in economics, where a body of theory and research experience concerning the operations of the U.S. economy has been developed that dwarfs that found in any substantive area within international studies, it has been found that econometric models of the U.S. economy, while accurate over horizons of 4-6 quarters, disagree strongly concerning the longer term effects of economic policies (Christ, 1975). This means that these models do not completely capture the longer-term structural process at work. In part this may be due to research decisions made in the early stages of modelling. I think this has some clear implications for any attempts to model long-term competitive processes in international relations.

International Politics as a System

The second analytical problem follows from the customary (and persuasive) conceptualization of global political questions in terms of international systems*, sets of elements and relations (or, more realistically, sets of interrelated, partially coupled subsystems). For example, consider the network of system-level relationships proposed by Goldmann (and presented in the previous section; (1974: 202):



Relations between tension, bipolarization, and strategic stability.**

*Obviously there is no single 'international system'. In what follows this phrase will be used for convenience.

**Similar models could be constructed on the national level.

Taken on face value, this is a reasonable model which reflects a systems point of view, with interactive relationships existing between the elements in the system.

However, this type of formulation raises serious problems when we attempt to estimate these equations by using standard statistical techniques. There is a clear dilemma.

On the one hand we have Ordinary Least Squares (OLS) procedures. These have well-understood properties and are fairly robust. However, they are clearly inappropriate estimation procedures when dealing with a system of this type. The assumptions OLS requires concerning error terms simply cannot be met in any system that involves feedback cycles and/or reciprocal causation between elements (as any realistic system specification is likely to entail), (Heise, 1975: 153-160).* Moreover, as a single equation technique OLS does not adequately take into account the multiple equation form that many realistic system specifications are likely to have.

The obvious alternative is to employ some other estimation technique, possibly one (such as the full information methods) that can deal with interactive causal influence relationships modelled in multiple equation forms. However, these alternatives are difficult to employ in practice. These procedures are sensitive to initial assumptions which are made concerning the form of each equation in the set (in full information approaches) and the characteristics of the instruments (in single equation alternatives to OLS such as 2SLS), (e.g., Heise, 1975: 167, 187). Without fairly strong theoretical 'priors' (of the sort that are not available) reliable estimates cannot be produced.

As a result there is a genuine dilemma which results from the interaction of limited understanding**and the statistical procedures which are available. As before, while no clear cut solution is available, recourse can be made to a partial resolution for the problem which is tailored to the initial stages of a research program.

---

*An obvious exception would be a block-recursive specification (Blalock, 1969) of the system.

**It should be noted that this limited understanding pertains to both the level of theoretical development in the area as well as to the indicators used in the evaluation of hypotheses since any research program involves an interaction between theory and indicators. For a discussion of the 'theoretical' nature of observation statements (indicators) see Popper (1959).

This resolution involves the use of OLS (as a fairly well-understood and robust technique) to search for regularities in subsections of the system. Obviously these have to be recursive subsections. Moreover, it is apparent that one cannot simply 'cumulate' a set of OLS equations into a complex interdependent system. However, one can use OLS in this fashion to search for patterns of covariation that might reflect the operation of a system. Once again this involves an emphasis on the 'model testing' stage of inquiry as a necessary preliminary to the more developed stage of parameter estimation.

Structures and Inter-Nation Relations

Recent historical research has placed a great deal of emphasis on the role played by 'structural' relationships in influencing and conditioning inter-state interactions (e.g., Braudel, 1973;* Wallerstein, 1974). These 'structures' are basic relationships that condition interactions, e.g., the hierarchic structure of the international system.

While there has been some recognition of the role that such structures can play in international politics (e.g., Senghaas on the role of threats as instrumentalities within the structure of a cooperative system (1975: 92),**) with a few notable exceptions*** considerations of structural influences have not played a major role in explanations of national foreign behaviors.

In part this appears to have been due to a misinterpretation of the levels of analysis problem (Munton, 1976). Since some of the most important structural factors occur at a different level than foreign behaviors (respectively, system and national levels) there has been a tendency to exclude the former from considerations of the latter. However, given the force of recent arguments concerning the appropriateness of cross-level inference

---

*The conclusion to Braudel's second volume is an outstanding summary of the way in which structural factors condition decision-making.

**The role of structural factors was previously considered in Section Two. For further discussions see Druckman and Mahoney (1977) and Mahoney (1976).

***e.g., Weede (1975, 1976), Harf et al. (1974).

(Guetzkow, 1976; Harf et al. 1974; Munton, 1976) it is apparent that this type of cross-level inference can be conducted.*

There are at least two ways in which this can be done. The first is to select a set of cases which are subject to the same set of structural influences, as Weede does in his recent analysis of conflict within the Asian sub-system (1976). This involves employing structural factors as parameters or constants that are used to classify cases into homogeneous subsets.

A second approach is to introduce nation-level variables that are salient because of their presumed relationship to structural factors. For example, given the hierarchic structure of the global system since WWII, it is plausible to assume that Soviet-American interactions have an influence upon the perceptions and behaviors of Western European elites. Hence one can postulate hierarchical influences upon Western European nations in addition to the usual 'behavior begats behavior' influences (an example of the latter being Soviet behavior towards Western European nations as a determinant of their percepitons and actions).

Responding to the Analytical Problems

The response to the three analytical problems surveyed in the preceding sub-section takes four forms:

- the employment of Ordinary Least Squares instead of more sophisticated estimation procedures (e.g., 2SLS, 3SLS);
- less detailed causal structures are specified than is the case in more advanced parameter estimation approaches;

* It is important to note that while structural relationships may occur at the level of the international system, they can also occur on the national level or be reflected on the national level. Spector et al. (1975) observe that the structure of Japanese-American relations (e.g., mutual economic salience and the alliance relationship between the two) needs to be considered in assessments of Japanese behaviors towards the U.S. Over time, a structure can emerge on the national level that conditions subsequent behaviors. By the same token, trends may have a 'structural' impact. For example, trends in perceptions (irrespective of year to year oscillations) may have been a significant political reality for Western European politics.

- the regression analysis centers upon the interpretation of R and residual statistics instead of partial regression coefficients;

- indicators are employed in their original, untransformed, forms.

As noted in the survey of the problems, these are, at best, partial resolutions of the analytical problems which involve a shift to a more preliminary (model testing) stage of analysis in preference to more advanced stages of parameter estimation. They are not, strictly speaking, solutions to the problems, some of which are genuine dilemmas.

Use of Ordinary Least Squares

OLS will be employed to estimate regression equations in the analysis. OLS has the merits of being reasonably robust and of being fairly well understood. It does not require what are likely to be problematic assumptions (e.g., those that would have to be made concerning the characteristics of instruments if 2SLS was employed).

OLS does not allow us to deal with systems of relationships as complex interdependent systems. Use of it will not allow us to determine the exact standing of European elite perceptions within the network of East-West relations since WWII, a network that is most likely to involve nonrecursive interactive relationships of the sort that cannot be adequately captured with Ordinary Least Squares estimates.

However, given the limits of our understanding of the role played by elite perceptions within this larger framework (limitations which also extend to the indicators employed in the analysis), it is unlikely that we would in any case be able to model this system, in its entirety, at this point. Hence there may be little in the way of effective or practical loss involved in this research decision.

In the analysis to follow OLS will be used to evaluate subsets of relationships within the framework of this larger (putative) system. Patterns of covariation will be used as evidence in favor of the existence of this larger and more complex network. Clearly this approach has intrinsic limitations. Certain types of relationships (e.g., suppressor variables and relationships in which independent variables act through one another in complex chains to influence criterions) are likely to be missed. However, this approach will allow us to assess some

aspects of the extent to which elite perceptions are linked to other elements in this putative system, as causes and consequences tied to other facets of East-West relations. It will allow us to see if elite perceptions appear to be "well-connected" with other aspects of East-West relations.

Specification

Since only selected portions of the larger system are being examined in the analysis, less specification will be involved than would be the case if the entire system was being modelled.

The focus of the analysis will be upon the competitive testing of hypotheses. For example, considering the impact of elite perceptions, how much of the variance in Western European states' behaviors towards the Soviet Union can be accounted for by elite perceptions as compared to other factors (such as the behaviors of the Soviet Union toward these states)? Once again this is a componential approach to the larger system in which the relative standing of elite perceptions vis a vis other aspects of this larger whole is examined. At the same time, however, some specification of relationships is involved, since the emphasis is upon plausible relationships linking perceptions to other facets of the political environment and not upon the atheoretical examination of correlations.

Typically this competitive hypothesis testing will involve three stages. In the first, the bivariate correlations of a set of plausible predictors with a criterion will be examined. After this has been done, and the strongest relationships isolated and selected for further analysis, a single multiple regression equation will show the extent to which the criterion shares its variance with the entire set, taken as a set. Following this will come comparisons across subsets of predictors (e.g., perceptual vs. non-perceptual influences upon the behaviors nations direct to the Soviet Union).* While the same three steps will be applied to all of the nations analyzed (the United Kingdom, France, and the Federal Republic of Germany), in some cases different indicators will pass the threshold (e.g., perceptual variables may be salient for some nations and not for others). Since only three nations are involved, it will be difficult to develop explanations for these national differences

*This is block step-wise regression, as proposed by Levine (1973) and Nie et al. (1976: 303).

in the saliency of perceptions. In what follows it will be assumed that such differences reflect the operation of unmeasured variables, with the three country names being construed as "surrogate variables" (in the sense specified by Przeworski and Teune, 1970) indexing these unmeasured influences. Obviously, the strongest conclusions will be those which are supported in all three countries.

Because of the weak theoretical 'priors' in the field, these initial analyses will involve only simultaneous relationships, using yearly aggregate data.

Regression Statistics

The efforts to link elite perceptions to other aspects of the (putative) systemic environment involves an attempt to map the patterns taken by the elite perceptions onto the pattern taken by other factors.

In these analyses attention will be focused upon the analysis of R (and R^2) and residual statistics. Because less than complete specifications have been presented for the causal processes under examination, less attention will be paid to the partial regression coefficients (standardized and unstandardized).

While the use of R in this role is conventional practice, the emphasis upon residuals in the absence of a corresponding emphasis upon the regression coefficients may appear to be paradoxical, since these coefficients are the mechanism used to produce the estimated values for residual analysis. As a result, some weight has to be attached to the regression coefficients.

The key difference between the present approach and structural equation techniques lies in the way in which these regression coefficients are approached. This can be brought out in a simple thought experiment. Assume that one (or both) of the following conditions were true:

(a) the regression weights in an equation were to be artificially adjusted such that their relative magnitudes (and possibly signs as well) varied considerably from the original values but the net result, in terms of R and the $\hat{Y}$ estimates, did not change significantly; (or)

(b) in one equation a predictor has a large 'effect' on a criterion, as measured on the basis of the magnitude and statistical significance of its partial regression coefficient; in a second equation--where another predictor which is highly correlated with the first is present--the first predictor has a small, insignificant coefficient, but there is little difference between the two equations in terms of R2 and residual results (an example of extreme multicollinearity).

In the present analyses neither of these changes would have any impact upon the inferences that would be drawn, since the point of principal concern is the relationship between elite perceptions and some set (or subset) of other factors. The impact on the conclusions of a path analysis, however, would be significant, since the two changes would affect the signs and relative magnitudes of individual coefficients and these individual coefficients are the point of greatest interest in parameter estimation analyses. Hence the key difference between the two orientations does not lie in the operation of the regression coefficients but rather pertains to their interpretation, the analytical perspective within which they are viewed.

Transformation of Variables

As noted previously, over the course of a research program theory and data tend to develop in interaction with one another. More precise conceptualizations promote the development of better indicators. Correspondingly, refinements in measurement precision can reflect back upon insufficiently precise conceptualizations.* Hence the limitations of our theoretical understanding of the causes and consequences of European elites' perceptions are reflected in the precision with which we can measure the elements in this putative system (perceptions, inter-nation behaviors, stages in the strategic balance, etc.).

Because of this interrelationship, I see considerable merit in treating the two as a partially matched set, a pair of state of the art assessments. As a result, I am skeptical about the benefits of any data transformations which, whatever their technical merits, would move us away from this state of the art assessment before we come to a better understanding of what the state of the art is.

This decision's major practical impact upon the course of the regression analyses to be performed is that variables will not be transformed to eliminate the effects of autocorrelation (nor will variant forms of regressions (e.g., GLS (Hibbs, 1974: 268) be used that are tantamount to performing OLS on transformed

*Developments in other substantive and methodological areas can also have an influence, as is shown by Goldmann's incorporation of previous content analysis research in the production of the European elite perceptual data.

variables). Such transformations would simply add complexity to an already sufficiently complex situation.*

This decision not to transform also eliminates the need to consider two quite serious analytical problems which would result if transformations were employed. The first is the tension that exists between substantive problems (reflected in indicators of a certain form) and the requirements of techniques. Essentially one can change the data (problem) to fit the technique or select techniques to fit (to the extent possible) the form in which the problem is posed. This is a serious problem which probably includes some genuine dilemmas, given the limitations of the analytical techniques presently available; this question needs more attention than has generally been given to it in the past.

The second benefit that follows from the decision not to transform variables is that some potential commensurability problems are avoided. When dealing with a set of equations (e.g., predicting defense burdens in the three Western European states of interest) it is often the case that a preliminary OLS analysis will reveal that only some are affected by autocorrelation. Transforming only these equations raises some potential commensurability problems, **since what is being analyzed in each equation is no longer stricly comparable.

---

*This problem holds even for the most innocuous of the transformations: taking first differences (Heise) (1975: 23-25) since the form of the question changes from states to changes of states, while the former may be the point of greatest theoretical or policy interest.

**Choucri and North (1975: 303) note the absense of clear-cut solutions to this and related problems and outline some of the alternatives which are presently available.

SECTION FIVE: INDICATORS

Introduction

This section presents the variables which will be interrelated in subsequent portions of the paper. It also traces the course taken since 1946 by Western European elites' perceptions of the state of East-West tension in Europe.

Four types of variables are involved in the analysis:

- British, French, and German elite perceptions of tension,
- conflictual and cooperative behaviors exchanged between nations,
- phases in the strategic balance relationship between the U.S. and USSR, and
- the defense burdens (defense spending/GDP) of the three Western European powers.

Most of the section will be devoted to the first two sets of indicators which will play the most prominent roles in subsequent analyses.

Elite Perceptions of Tension

The elite perceptual data was collected by Kjell Goldmann of the Swedish Institute of International Affairs (Goldmann, 1974; Goldmann and Hall, 1972). The perceptual indicators were constructed by means of a content analysis of Keesing's Contemporary Archives.

The first step in this process involved the identification of all statements by government leaders in WTO and NATO nations which dealt with the present or future state of relations between the European members of both blocs. Statements dealing with alliance to alliance relations were also included. The preponderance of the statements identified were made by the United States, the Soviet Union, the United Kingdom, France, and the Federal Republic of Germany, the last three being the states which are the focus of the present analysis.

After these statements were identified, all sentences in paragraphs which included relevant themes were coded into one of four categories of content: favorable units (positive predictions, hopes, intentions, and other assertions dealing with inter-bloc

relations in Europe), unfavorable units, neutral units (comments bearing on East-West relations that did not have a definite valance) and non-relevant units (statements in the paragraphs selected that did not bear on East-West relations).

After the statements had been classified into categories, yearly national tension perception scores were produced by employing the Janis-Fadner (1949) coefficient of imbalance.* This produced scores on the range of +1.00 to -1.00:

+1.00 Highly favorable perceptions of the state of tension in Europe (little tension perceived)

0.00 Neutral perceptions

-1.00 Negative perceptions of the state of tension in Europe (much tension perceived).

If fewer than 15 assertions per nation per year were identified no score was assigned to that state for that year and the observation was treated as missing data (a practice followed in this paper). The validity of Keesing's as a source for the perceptions was assessed by coding selected periods for the U.S. and USSR, using Department of State Bulletin and International Affairs as alternative sources. There was high agreement with the scores based on Keesing's, (Goldmann, 1973).

In considering these coefficients of imbalance, it is critical to note that they have a European rather than a global focus. The rules used to identify relevant themes exclude non-European matters. Hence we would not expect to see non-European events reflected in a direct way in the perceptions (e.g., the 1962 Cuban Missile Crisis).

---

*Two formulas are used to produce this coefficient:

$$C = \frac{f^2 - fu}{rt} \text{ (if } f > u) \quad \text{and} \quad C = \frac{fu - u^2}{rt} \text{ (if } f < u), \text{ where}$$

f = the number of favorable units of content; u = the number of unfavorable units; r = the number of thematically relevant units (favorable, unfavorable, and neutral); and t = the total number of units of content (the sum of r plus the irrelevant themes). Janis and Fadner (1949) provide the derivations for the formulas and justify their employment as content analysis measures.

Evaluating the Perceptual Data

These data can be evaluated in terms of the criteria developed in the second section of the paper.

The first point to note is that the perception scores have a somewhat hybrid nature. They are a mixture of descriptive assertions plus prescriptive, predictive, and normative statements.

The second point of significance is that they are perceptions of an object or entity (the state of tension in Europe) rather than perceptions or attitudes of or towards a behavior (e.g., Soviet behaviors towards Western European states).

Both of these points raise some potential analytical problems. Descriptive statements (e.g, 'tension is high') have a less immediate relationship to action than do evaluative ones ('certain levels of tension (or "certain behaviors which affect tension levels") are desirable/undesirable'). By the same token, inter-nation behaviors (one of the factors that will be predicted to on the basis of elite perceptions in a later section) are more likely to be related to perceptions of behaviors ('directing verbal conflict to the USSR is desirable/undesirable') than to a somewhat global assessment of the state of the political environment ('tension in Europe is high/low').

Both problems, however, appear to be surmountable, given certain reasonable inferences and assumptions. The first problem can be met by assuming that national leaders (conceived of as cybernetic tension-reducing and managing actors) will attempt to relate their behaviors to their perceived levels of tension. Tension perceptions make up part of their 'definition of the situation' (Brody, 1966) and this should have an impact on their actions. We can infer a valence (analogous to the valence component in an attitude) from descriptive/evaluative perceptions. It will be assumed that the direction of the relationship is one that correlates high levels of perceived tension and high levels of conflict in inter-state behaviors and relations.

Similarly, perceptions of an object can be related to behaviors by making reference to the structural context of East-West relations since 1946. Since the Soviet Union was the leader of the group posing the principal threat to these Western European states, it is plausible to assume that they would express more conflict to the USSR, and spend a greater relative

portion of their resources on defense spending in periods of greater perceived tension. By the same token, it is plausible to assume that the perceptions of European leaders are responsive to the statements and actions of the alliance leaders (the U.S. and USSR), with the European perceptions showing more tension whenever the superpowers express more tension in their articulations and/or when the two major powers increase the level of conflict in their interactions with one another.

In terms of the other criteria developed in Section Two the perceptual data meet the required standards. As is the case with the behavioral data (to be presented below), the perceptions are scored on the basis of multiple actions/assertions and can take on a wide range of values. As a result, the index avoids the threshold and single item problems identified previously.

The a priori relevance of the content of the perceptions (tension in Europe) for the relationships to be investigated (principally inter-nation conflict behaviors and defense spending) is high. It appears that the right 'attitudes' are being measured. Additionally, the perceptions are being assessed within the same context as the criterion behaviors of interest (notably behaviors towards the USSR and defense burdens). They are part of the same natural context (the same 'field' in field theory terms). This is one of the advantages of using content analysis to collect the data.

Tracing the Course of Western European Perceptions

Before turning to the other categories of variables, it is useful to examine the course taken by Western European perceptions of the state of tension in Europe.

TABLE 5.1

MEANS AND STANDARD DEVIATIONS OF EUROPEAN PERCEPTIONS

State	Variable Code	Mean	Standard Deviation	(N)
United Kingdom	UKp	0.00	.11	(25)
France	FRp	0.02	.21	(25)
West Germany	WGp	-0.03	.14	(19)*

*Perceptions are assessed on an annual basis over the 25 years period 1946-1975. The West German series has missing data points in 1946-1949, 1952, and 1960.

Over the entire 25 year span, tension perceptions tended to be balanced near the mid-point of the +1.00 to -1.00 scale. Students of national character will no doubt be delighted to find that the French scores showed the most variability over the period while the more stolid British exhibited the least variability.

Figures 5.1, 5.2, and 5.3 show the course taken by the tension perceptions over time. Table 5.2 presents the correlation matrix for the three. The table also includes the tension perceptions of the United States and Soviet Union which will be factors in later portions of the analysis.*

---

* It is reasonable to assume that Western Europeans would take into account the articulated perceptions of their alliance leader and their principal adversary in developing their own perceptual estimates of the state of East-West tension in Europe. Soviet and American perceptions are relevant factors because of the positions occupied by both nations in the structure of the post-war European political system. In examining this relationship (in Table 5.2 and subsequently) there is an inevitable methodological problem in that the same source was used to gather all of the perceptual data. Hence there should be some shared 'method variance'(Campbell and Fiske, 1959) reflected in the correlations. There is no practical way in which this problem can be avoided. There is no independent source of perceptual data. The same problem will be encountered in later sections when behavioral measures are used to predict to other behavior indices.

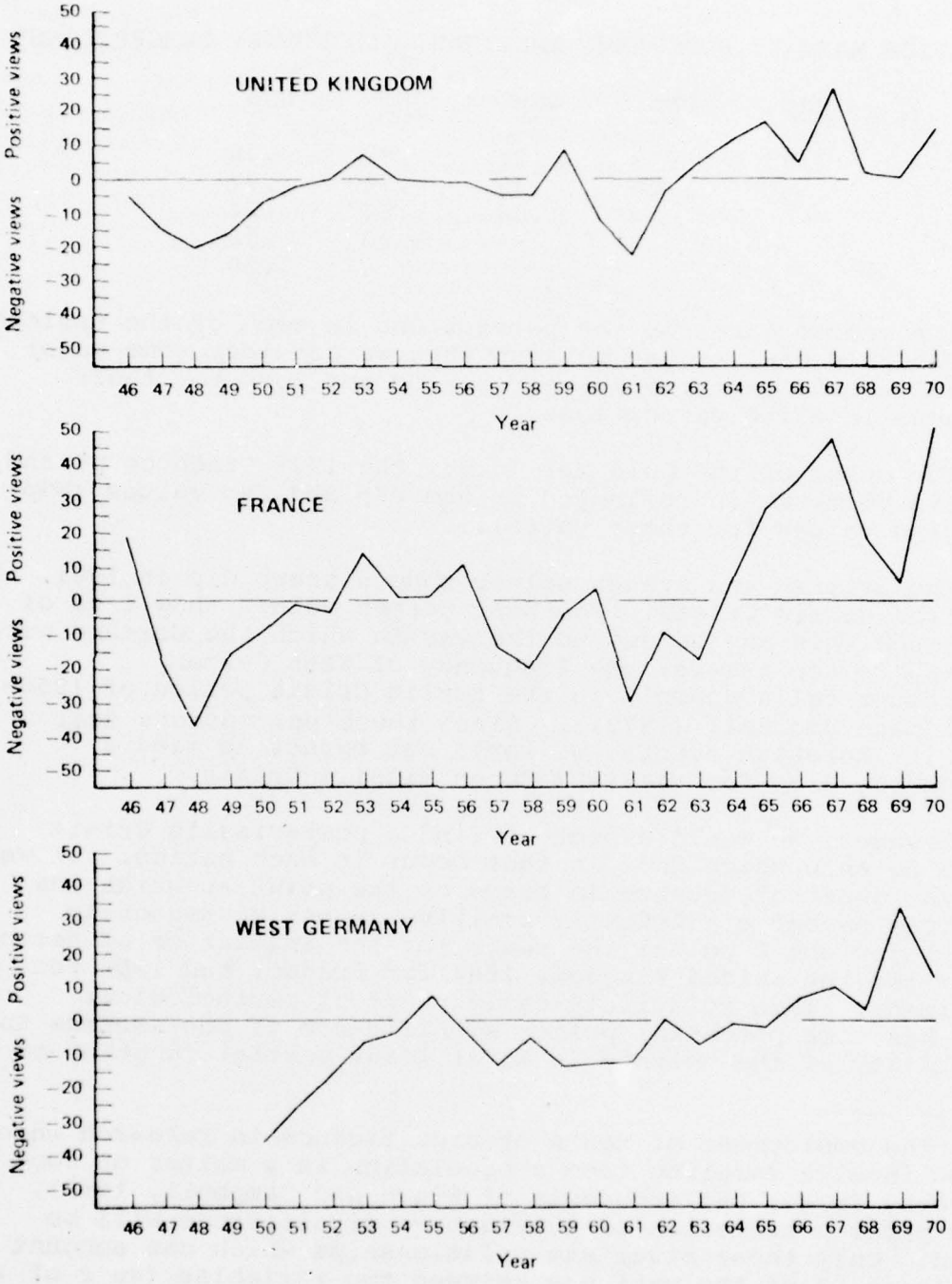


FIG 5.1: LEADERS' PERCEPTIONS

TABLE 5.2

CORRELATION MATRIX, EUROPEAN, AMERICAN, AND SOVIET PERCEPTIONS*

	UKp	FRp	WGp	USp	SUp
UKp	1.00	.78	.37	.81	.76
FRp		1.00	.49	.74	.77
WGp			1.00	.54	.24
USp				1.00	.58
SUp					1.00

The course taken by the perceptions in each of the nations is a reasonable one, as can be seen when we consider some major events and trends over the 25 year period and look for their reflections in elite perceptions.

The onset of the Cold War (e.g., the 1948 Czech coup) and the Berlin blockade is reflected in the UKp and FRp values (WGp has missing values for these years).

The British and French values show a sharp dip in 1961, the year of the Berlin Crisis. The West German values show less of a fall (though this may be due to the way in which the Germans were responding to the crisis; the frequency of West German articulations falls sharply in the Berlin Crisis period of 1960-1963 (Goldmann and Hall (1972)). Since these perceptions deal solely with European events, we would not expect to find a corresponding drop for the 1962 Cuban Missile Crisis.

However, we would expect to find a post-Missile Crisis European detente which does in fact occur in each nation. If we define the onset of detente in terms of the point at which the perceptions become consistently positive (never subsequently falling below the 0 point) the years for the initiation of detente are 1963 for the United Kingdom, 1964 for France, and 1966 for West Germany. This relatively early onset of psychological detente has some potential policy significance if one assumes that the stability of the detente is an at least partial function of

---

* The employment of tests of significance in research which does not involve sampling from a population is a matter of some controversy (e.g., the arguments of Winch and Campbell, 1969). In this paper a criterion of substantive significance will be employed. Only those bivariate relationships which can account for at least 9% of the variance between two variables (an r of .3 or greater) will be focused upon in the analysis. This is the convention proposed by Gurr (1970: 18-19).

its longevity. It is notable that these psychological detentes occur prior to the series of major Soviet-American agreements concluded during the Nixon Administration that have come to represent the institutional form of detente (though they follow the series of Soviet-American agreements which began with the 1963 limited test ban and hotline accords).

The 1968 invasion of Czechoslovakia appears to be reflected in each of the series by a dip. Unlike earlier crises, however, in no case do the values cross over the zero point and become negative. Again this may reflect the psychological stability of detente.

The correlations presented in Table 5.2 show the West German leaders standing out in a relative sense. This finding is not simply an artifact of the greater amount of missing data for the West German leaders; a similar pattern of correlations results when the first four years are excluded from all of the time series. The variation in the sizes of the correlations suggests that shared method variance does not totally dominate the results (though its exact impact cannot be assessed). As indicated previously, with only three nations in the analysis, it is difficult to interpret national differences except to note that they reflect the operation of unmeasured variables in the sense specified by Przeworski and Teune (1970).

Behavioral Data

Inter-nation interactions are indexed using the Azar-Sloan (1975) event data file which provides annual scores for the cooperative and conflictual behaviors exchanged by nations over the period 1948-1973.

While all of the behavioral data is taken from one source, it can be logically divided into two sets. The first consists of the variables which index potential reciprocity in actions (e.g., Soviet behaviors towards France and French behaviors towards the USSR). The second set consists of those variables which are interest primarily because they reflect possible hierarchical influences upon the Western European nations (e.g., Soviet-American interactions). The behavior variables are presented and grouped in Table 5.3.

TABLE 5.3

INTER-NATION BEHAVIORS*

Hierarchical		
	US-SUc	US-SUa
	SU-USc	SU-USa
Reciprocal (Soviet actions)		
	SU-UKc	SU-UKa
	SU-FRc	SU-FRa
	SU-WGc	SU-WGa
Reciprocal (Western European states' actions)		
	UK-SUc	
	FR-SUc	
	WG-SUc	

*US (United States), SU (Soviet Union), UK (United Kingdom), FR (France), WG (West Germany). The first nation is the actor; the second is the target of the behaviors. The 'c' subscript denotes conflictual behaviors; the 'a' amicable or cooperative behaviors. Hence US-SUc references the conflictual behaviors sent by the U.S. to the USSR. These codes will be useful in the presentation of statistical results in subsequent sections. The amicable behaviors of Western European states towards the Soviet Union are available in Azar and Sloan (1975) but were not employed in the analysis.

The Azar-Sloan behavioral data was constructed in a number of steps. The first involved the examination of a wide variety of sources to identify directional behaviors (behaviors sent from one, actor, nation to a target state. The COPDAB (Azar-Sloan) project is noteworthy for its use of regional as well as global event data sources.

After the events had been identified, they were classified as being either conflictual or cooperative. The distinction between these two types of behaviors is a fairly well established one in international studies. This separation of these two types of interaction is one of the most notable features of the data set.

After the preliminary sorting, each event was then assigned a scale value on the appropriate ranking instrument (the validation of these instruments is discussed in Azar-Sloan (1975) and Sloan (1973).

The scales are presented in table 5.4.

TABLE 5.4

AZAR-SLOAN CONFLICT AND COOPERATION SCALES*

Scale Value	Typical Behaviors
CONFLICT	
15 (most conflict)	large scale conflict
14	minor conflict
13	subversion, border clashes (small scale), skirmishes
12	breaks in diplomatic relations, nationalizations
11	attempts to cause economic difficulties for target nation; attempts to hinder movement of other nation's vessels in waterways
10	verbal threats, warnings, demands, accusations
9	milder forms of negative verbal behavior
8 (least conflict)	neutral or indifferent behaviors
COOPERATION	
1 (most cooperation)	merger of nations into one state
2	establishment of alliance
3	military aid
4	economic aid
5	meetings between heads of states; cultural agreements
6	verbal support for other nation's policies
7	more extensive verbal support and agreement (e.g., joint communiques)
8 (least cooperation)	neutral or indifferent behaviors

*Only illustrative behaviors have been given for each scale category; for a more extensive discussion of the instrument consult Azar and Sloan (1975) and Sloan (1973). Each scale ranks verbal and nonverbal events, with the former being seen as less conflictual or cooperative than the latter. Despite the numbering system (and the common neutral value of '8') these are separate dimensions of interaction,

For each combination of actor and target, an annual mean conflict and cooperation score can be constructed using the assigned scale scores. These means (taken from Azar and Sloan (1975)) are the values employed in this paper.*

These means are relatively crude indices, but they do have an intuitively appealing rationale since they are based on the entire record of interactions. Given the extensive validation efforts reported by Azar and Sloan (1975), the values will be accepted as state of the art representations of our understanding of the flow of inter-state behaviors over the period 1948-1973. Given the aggregate nature of the data, more reliance will be placed on the trends found in the data than in the exact value taken by any single score.

There is one major problem with this data set in that it deals with all of the actions of nations. As a result it includes a wider range of content than is found in the perception data, which includes only European matters. Given the format of the data, there is no way in which this problem can be surmounted. However, it is not likely to be a debilitating problem for the present analysis since it is reasonable to assume that European affairs (particularly the security affairs reflected in the perceptual data) are likely to be one of (if not the) driving considerations prompting the behaviors recorded in the Azar-Sloan indices.

The final point that needs to be considered is the expected signs for the correlations between the behavioral measures and the perception scores. Given the scoring of the variables, the signs of some correlations reported in this study will be apparent anomalies. This could be avoided by rescaling some of the variables, but only at the cost of making comparisons across studies which use some of the same indicators more confusing. To

---

* I make one departure from Azar-Sloan's practice. In those few instances in which insufficient data was found for a given actor-target/year combination to allow computation of a mean, instead of coding the value as missing data, I assign it to the '8' (neutral interactions) category on the appropriate dimension (conflict or cooperation). I do this because I regard the Azar-Sloan procedure as a sort of 'conflict' meter (and 'cooperation' meter). From this vantage point, the absence of a meter reading can be taken as an indication of a low level of conflict or cooperation, rather than as missing data. The comprehensiveness of Azar-Sloan's source coverage assists me in making this interpretation.

avoid the latter problem, all variables have been employed in the format of their initial presentation. Table 5.5 gives the expected signs of the relationships.

TABLE 5.5

EXPECTED DIRECTIONS OF RELATIONSHIPS BETWEEN BEHAVIORAL AND PERCEPTUAL DATA

(Perceptions and Conflict Behaviors)

Perceptions		Conflict Behaviors
(favorable perceptions)	1.00	15 (high conflict)
(unfavorable perceptions)	-1.00	8 (low conflict)

(Expected direction is negative, linking, for example, unfavorable (low) perceptions with high conflict values.)

(Perceptions and Cooperative Behaviors)

Perceptions		Cooperative Behaviors
(favorable perceptions)	1.00	8 (low cooperation)
(unfavorable perceptions)	-1.00	1 (high cooperation)

(Expected direction is negative, e.g., with low perception scores (indexing unfavorable evaluations) going with numerically high cooperation index values.)

Phase in the Strategic Balance

The hierarchical structure of East-West relations is reflected in Soviet-American relations in addition to behavioral interactions of the sort examined in the previous section. The distinction between the two (following Wallensteen, 1973) is that the former do not require any behaviors to be exchanged between the actors. One example of this kind of structural relationship would be the ratio of two nations' GDPs. Another (and more relevant example) is the state of the strategic balance between the leaders of the two alliances: the U.S. and USSR.

Following the arguments of Goldmann (1974) concerning the balance relationship, four phases in Soviet-American competition can be identified and distinguished in terms of the amount of 'objective' tension each represented insofar as a stable/secure nuclear balance was concerned:

Phase 1	1946-1947	(3) (Objective tension score)
Phase 2	1948-1956	(2)
Phase 3	1957-1965	(4)
Phase 4	1966-1975	(1)*

In this scheme a low number indexes low "objective" tension. In this sense, the most 'balanced' period has been the phase of mutual second strike capabilities (parity) (1966+). The next most balanced phase was 1948-1956, when only the U.S. possessed the capacity to attack the other superpower's homeland with a major strategic strike.

This was followed by the period in which neither superpower possessed significant nuclear forces. Finally the period which had the most 'objectively' tense or unstable relationship was 1957-1965, when both superpowers had counter-homeland nuclear strike capabilities, but where the U.S. had a significant lead over the USSR. Parity (achieved sometime during the mid-1960s) ended this imbalance.

This aspect of the relationship between the superpowers will be indexed by the four values which follow each of the phases. The expected direction of the relationship between this variable and the perception scores is negative, with the highest (most favorable) perception values anticipated during the period of parity (which is the lowest value for the strategic balance measure).

The Defense Burden

The defense burden (the ratio of defense expenditures, in current currency values, to the GDP) provides a rough index of the role placed by considerations of national security in the minds of leaders. Clearly this is an index which misses a great deal. It does not, for example, reflect efficiences which might produce more defense at a lower per unit cost. It also does not distinguish between European defense spending and those defense expenditures which are directed at other theaters (e.g., the maintenance of the French Indian Ocean squadron). However, in spite of its limitations, it does provide one measure of the relative standing of defense matters in national policy agendas.

*These phases are discussed at greater length in Mahoney (1976).

This factor will be measured using values computed by the Stockholm International Peace Research Institute (1975: 122-123) for the years 1953-1970. The expected direction of the relationship between this factor and the perception scores is negative, with high perception values (indicating favorable evaluations of the state of tension) being associated with lower ratios of defense spending/GDP.

Summary List of Indicators

Table 5.6 lists the variables that will be employed in subsequent analyses.

The first group consists of the three most important variables: the Western European leaders' perceptions of tension.

The second set consists of three types of hierarchical factors. While these variables do not directly involves the three Western European states (e.g., the UK is neither an actor nor a target in the US-SUc dyad), given the structure of the post-war European political system, it is plausible to assume that these factors may have had an influence on the course of the perceptions of Western European leaders.

The next set consists of Soviet behaviors to Western European states, followed by Western European behaviors to the Soviet Union. The final set of variables is the defense burdens of the Western European nations.

TABLE 5.6

SUMMARY OF INDICATORS

Western European Perceptions

UKp
FRp
WGp

Hierarchical Influences

Superpower Perceptions

USp
SUp

Superpower-Superpower Interactions

US-SUc	US-SUa
SU-USc	SU-USa

Superpower Strategic Balance

BLNCE

Soviet Behaviors to Western European States

SU-UKc	SU-UKa
SU-FRc	SU-FRa
SU-WGc	SU-WGa

Western European Behaviors to Soviet Union

UK-SUc
FR-SUc
WG-SUc

Western European Defense Burdens

UKdb
FRdb
WGdb

SECTION SIX: POSSIBLE INFLUENCES UPON ELITE PERCEPTIONS

Introduction

In this section we begin to examine the extent to which European elite perceptions of the state of tension between the blocs in Europe are 'well-connected' with other elements of the (putative) East-West competitive system.

Table 6.1 presents the correlations between British, French, and West German leaders' perceptions and a number of predictors (possible causal influences). For convenience, the predictors have been grouped into hierarchical and non-hierarchical factors, with the former reflecting the possible influence of the structure of East-West relations upon the perceptions.

TABLE 6.1

CORRELATES OF ELITE PERCEPTIONS*

Predictors	UKp	FRp	WGp
(Hierarchical)			
BLNCE	-.20	-.49	-.39
USp	.81	.74	.54
SUp	.76	.77	.24
US-SUc	-.51	-.53	-.82
US-SUa	-.18	.01	-.13
SU-USc	-.17	-.29	.11
SU-USa	-.14	-.14	-.17
(Non-hierarchical)			
SU-UKc	-.23		
SU-UKa	.19		
SU-FRc		-.35	
SU-FRa		-.13	
SU-WGc			-.30
SU-WGa			-.35

*All correlations and regressions in this paper are computed using the pair-wise deletion of missing data option of the SPSS statistical package. Correlations of .30 or greater are underlined.

In terms of the $r \geq .30$ criterion, only two variables are substantial predictors across all three nations. Both are hierarchical factors involving the U.S.: USp (American tension perceptions) and US-SUc (American conflict behaviors directed to the USSR).*

Three variables are salient in two of the nations: the state of the strategic balance between the superpowers, Soviet perceptions, and Soviet conflict behaviors directed to France and the Federal Republic of Germany. Only one predictor is salient for only one nation: Soviet cooperative behaviors directed to West Germany.

The basic impression that these correlations give is that the European perceptions of tension appear to be 'well-connected'. While the extent of the linkages varies across nations, in each case there is evidence that supports the thesis that these perceptions play a central role in the East-West competitive system.

European Perceptions in Context

The bivariate correlation analysis just performed has a simple logic. Presuming some initial confidence in the measures used to index the variables, the absence of a significant correlation, particularly its absence over all three nations, is fairly straight-forward evidence for the lack of a connection between the perceptions and some other factor. As was noted previously, the case is less clear-cut with multivariate tests. Because of the ambiguity of the specifications used in these tests, a given predictor (or set of predictors) might be important yet add little to an OLS equation. For example, a variable might be an intermediary factor through which other influences act on the criterion. Such an intermediary factor might be so highly correlated with these other factors as to add little variance when it is introduced into an equation which already contains these influences. Because of these specification problems, interpretations have to be more cautious when multivariate results are examined.

The first multivariate analyses have to do with the extent to which the European perceptions are 'connected' with the sets of predictors identified in the bivariate correlation analysis. These regression results are presented in Table 6.2. Figures 6.1-6.3 show the plots of the regression estimates produced by these equations and compare them to the course of the actual values of the perception variables.

---

*With only three countries in the analysis, it is difficult to interpret cross-national differences in the correlations.

TABLE 6.2

REGRESSION RESULTS: EUROPEAN PERCEPTIONS*

Dependent Variable	R	R^2	F	Standard Deviation of Residuals
UKp	.88	.79	24.0	.05
FRp	.89	.80	14.3	.10
WGp	.90	.81	11.2	.07

*The predictors in these equations are those which passed the $r \geq .30$ test (these correlations are underlined in Table 6.1).

As argued in previous sections, it is difficult to attach substantive significance to regression weights when equations have been weakly specified. Minor differences in specification can have significant impacts upon the signs and magnitudes of the regression coefficients without having a corresponding effect on the R and residual statistics of the entire equation. As a result, the regression analyses presented in this paper do not interpret these coefficients. They are, however, presented in an appendix which also provides the Durbin-Watson autocorrelation tests for the equations.

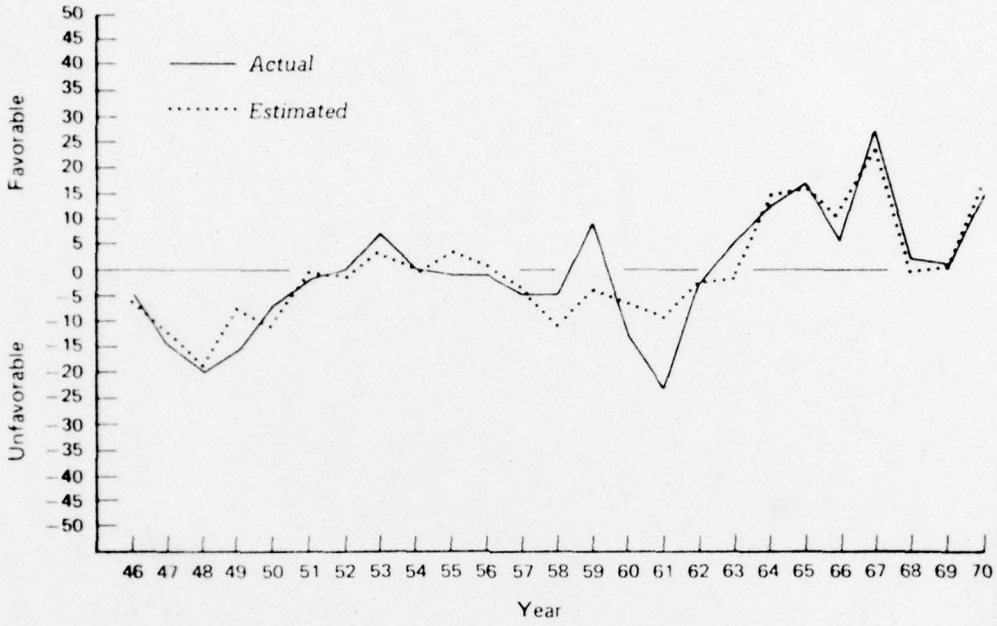


FIG. 6.1: BRITISH PERCEPTIONS

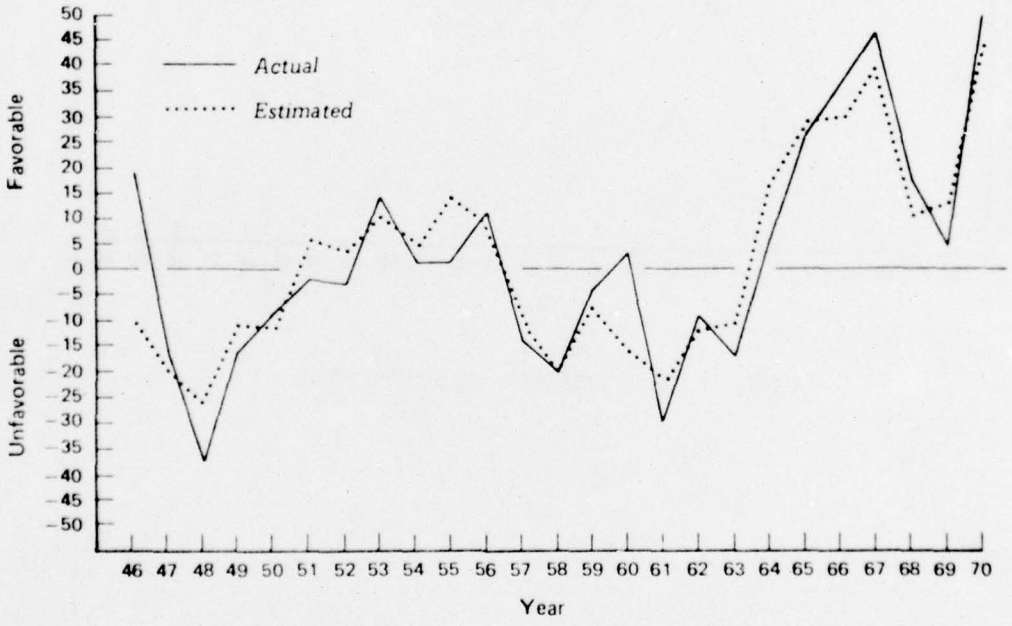


FIG. 6.2: FRENCH PERCEPTIONS

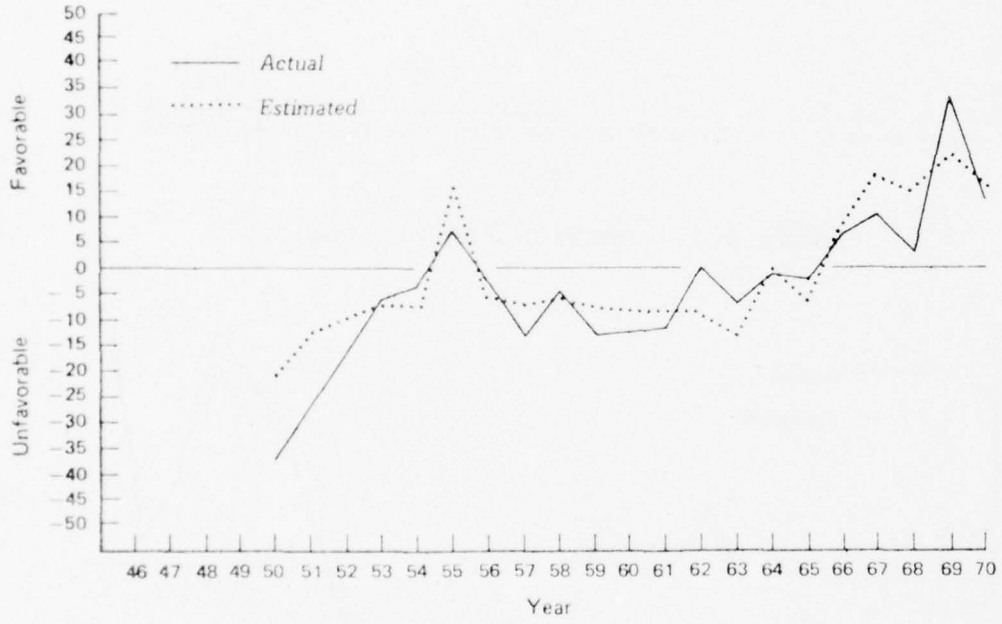


FIG. 6.3: GERMAN PERCEPTIONS

The results of the regression analysis are quite favorable. The R's are high and there is a good congruence between the estimated values and the course taken by the actual perception scores in the three nations. This is the pattern we would expect to find if there perceptions were well-connected elements within a larger system of East-West relations. In the next section of the paper another side of the 'connections' question will be examined by using elite perceptions to predict to other facets of this (putative) system.

Sorting Out the Influences on European Perceptions of Tension

Before turning to the second side of the 'connections' question, we can complement one aspect of the earlier correlation analysis by looking at the relative influence of hierarchical and non-hierarchical factors as predictors of the European perceptions.

This question obviously bears on our interest in the 'structure' of East-West competition. Indeed, the hierarchical factors have been included in the analysis solely because of their presumed influences as elements in a hierarchical system's structure.

We can approach this question by separately adding hierarchical and non-hierarchical predictors to the regression equations and determining which set accounts for the most variance by itself and which adds the larger increment in variance to that accounted for by the other set.

Because of the network of assumptions in which this question has been framed (a network which has been developed in the preceding sections), this is a very limited test. If, for example, it is found that the hierarchical factors are the better predictors (accounting for more variance by themselves and when added to the other set), the conclusions that can be drawn bear more on the relevance of the hierarchical factors as influences upon the perceptions than on the merits of the other set of factors, since the specification of the relationships employed here almost certainly fails to capture all of the complexity of the true causal structure. This is quite different than inferring, on the basis of this type of test or an examination of regression weights, that the weaker performing factors are necessarily weaker influences (or, possibly not influences at all, if they add nothing to the variance already accounted for by the hierarchical set). The weaker performing factors might, for example, be crucial intermediary variables whose impact cannot be adequately assessed with this simple of a specification for the relationship.

Table 6.3 presents the results for the comparison of the two sets. Since all of the predictors of UKp which passed the r .30 test are hierarchical factors, no comparison is possible for the United Kingdom.

TABLE 6.3

COMPARISON OF HIERARCHICAL AND NON-HIERARCHICAL INFLUENCES UPON EUROPEAN ELITE PERCEPTIONS*

UKp	Hierarchical:	USp, SUp, US-SUc	
	Non-hierarchical:	none	
FRp	Hierarchical:	BLNCE, USp, SUp, US-SUc	
	Non-hierarchical:	SU-FRc	
	Hierarchical:	R = .89	R^2 = .80
	Non-hierarhical:	R = .89	R^2 = .80
	increment:		.00
	Non-hierarchical:	R = .35	R^2 = .12
	Hierarchical:	R = .89	R^2 = .80
	increment:		.68
WGp	Hierarchical:	BLNCE, USp, US-SUc	
	Non-hierarchical:	SU-WGc, SU-WGa	
	Hierarchical:	R = .86	R^2 = .75
	Non-hierarchical:	R = .90	R^2 = .81
	increment:		.06
	Non-hierarchical:	R = .42	R^2 = .18
	Hierarchical:	R = .90	R^2 = .81
	increment:		.63

*As was the case with the bivariate correlations, I prefer to use a measure of substantive significance (variance explained) in preference to measures of statistical significance. Because I expect the two sets to have somewhat (but not completely) collinear influence upon the criterion, I am using a .05 increment in R^2 as my cut-off point for the increments; for a test of statistical significance for such increments see Krause et al. (1975).

Hierarchical factors predominate over all three nations, accounting for more variance by themselves and when added to the other set.* While, given the framework within which the test has been conducted, we cannot conclude that the non-hierarchical factors have no impact, the results do suggest that the hierarchical ordering of the East-West system has impact upon the course taken by Western European leaders' perceptions of the state of East-West tension in Europe.

---

*Since only two non-hierarchical factors entered into the initial correlation analysis (Soviet conflictual and cooperative behaviors directed at the Western European nations), this is an unbalanced comparison. Subsequent uses of this type of comparison will be more balanced. Even in its present form, the comparison does allow us to see the importance of the hierarchic factors as predictors of the perceptions.

SECTION SEVEN: POSSIBLE CONSEQUENCES OF ELITE PERCEPTIONS

Introduction

This section deals with the second facet of the 'connections' question, the relationship between European leaders' perceptions and the internal and external actions of their nations. Two dependent variables will be examined in this section: the conflict behaviors sent by Western European nations to the Soviet Union and the defense burdens (defense expenditures/GDP) of these states.* In each case we will attempt to determine if leaders' perceptions have a significant correlation with the policy actions of their countries. In addition the section will evaluate the impact of other, nonpsychological, factors (such as the predictors of elite perceptions considered in the previous section) upon these policy actions and will assess the relative impact of psychological and nonpsychological variables. The section begins with European behaviors towards the Soviet Union.

The Correlates of European Behaviors Towards the USSR

Table 7.1 presents the correlations of Western European perceptions of tension and a variety of other factors with the conflict directed by the three nations of interest to the Soviet Union.**

---

*In the comparisons to follow we will once again encounter the shared method variance problem, since all of the behavioral data is taken from Azar and Sloan (1975).

**No event data is available for the years 1946 and 1947.

TABLE 7.1

THE CORRELATES OF EUROPEAN CONFLICT BEHAVIORS DIRECTED TO THE SOVIET UNION*

Predictors	UK-SUc	FR-SUc	WG-SUc
(Hierarchical)			
BLNCE	.05	.15	.12
USp	-.30	-.41	-.17
SUp	-.47	-.42	-.42
US-SUc	.48	.50	.41
US-SUa	-.01	-.10	.18
SU-USc	.23	.15	-.14
SU-USa	.24	.10	.30
(Non-hierarchical)			
UKp	-.35		
FRp		-.33	
WGp			-.27
SU-UKc	.11		
SU-UKa	-.51		
SU-FRc		.68	
SU-FRa		.28	
SU-WGc			.18
SU-WGa			-.06

*Correlations $\geq$.30 are underlined. The three preceptual variables are also underlined.

The tension perceptions have an appreciable correlation with the conflict behaviors in two of the three nations (West Germany is the exception and even there the figure is close to the .30 criterion). Since these perceptions are but one of several psychological factors that might bear upon the conflict behaviors, the magnitudes of the statistics are not surprising.

Examining the other predictors, it can be seen that the conflict behaviors have a number of 'connections' with other elements in the hypothesized system of East-West relations. Two variables are significant predictors across all three nations. One is a psychological factor (SUp), the other is a behavioral influence (US-SUc). Articulated American perceptions are salient in two of the nations (the United Kingdom and France).*

Conflict Behaviors in Context

Table 7.2 and Figures 7.1-7.3 show the extent to which the pattern taken by European conflict behaviors towards the USSR can be accounted for by the variables selected in the correlation analysis.

TABLE 7.2

REGRESSION RESULTS: EUROPEAN CONFLICT BEHAVIORS TOWARDS THE SOVIET UNION*

Dependent Variable	R	R^2	F	Standard Deviation of Residuals
UK-SUc	.69	.48	3.17	.28
FR-SUc	.80	.65	6.38	.27
WG-SUc	.54	.29	2.69	.27

*Additional information concerning these regression equations is presented in the appendix.

*With one exception (SU-UKa) the signs of the correlations are in the direction that would be expected on the basis of commonsense. Because of the scoring of the Azar-Sloan scales, with high numerical values indexing high levels of conflict and low levels of cooperation/amicable behaviors, a positive r between SU-UKa and UK-SUc might have been anticipated. It is, however, possible for actors to simultaneously have high levels of conflict and cooperation with one another, a non-commonsensical point discussed in Rummel (1976) and considered in the treatment of the event data variables in Section Five.

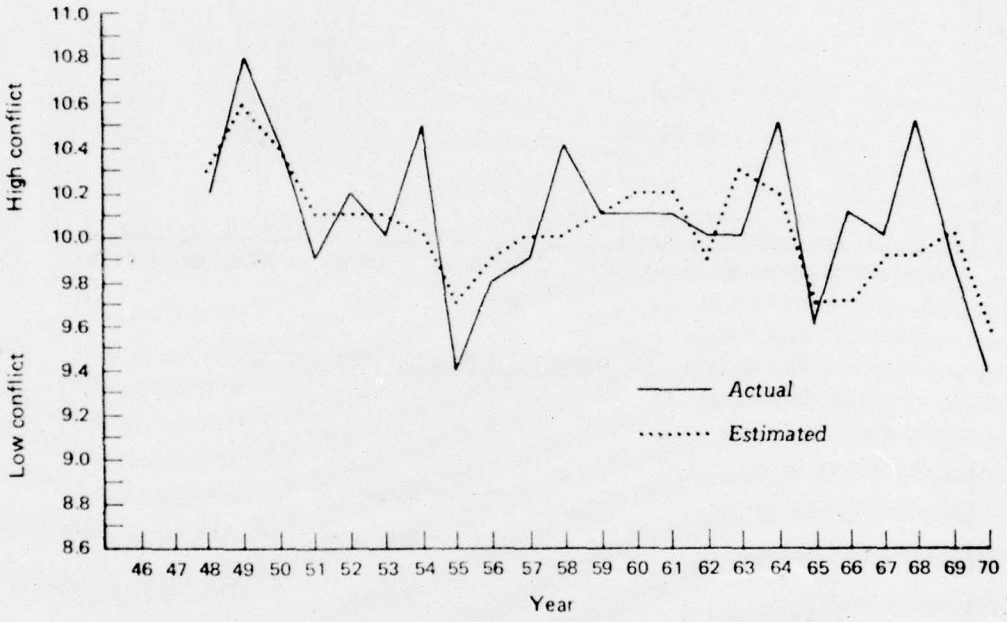


FIG. 7.1: BRITISH CONFLICT TO USSR

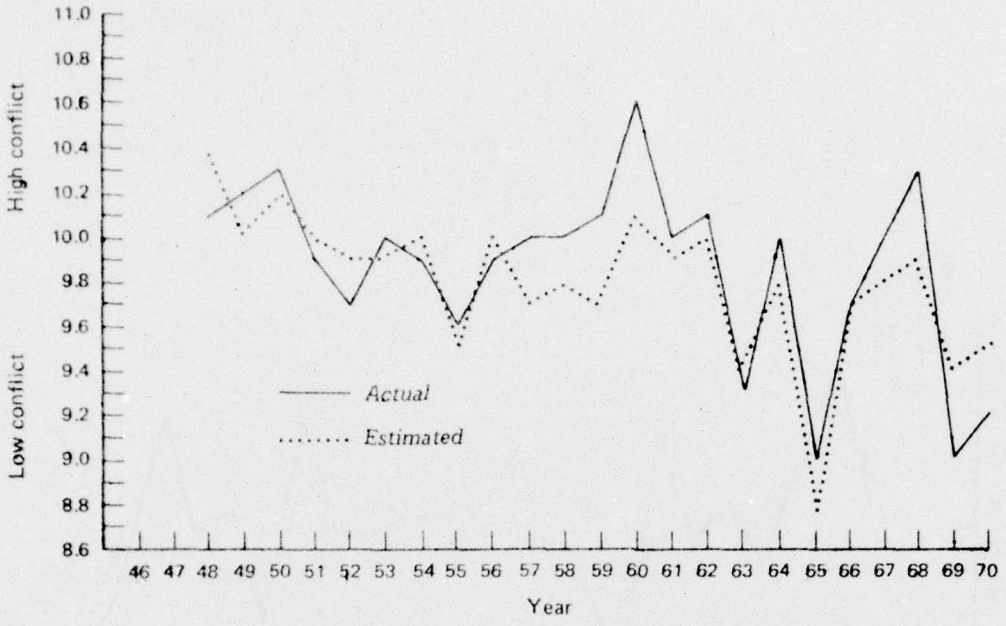


FIG 7.2: FRENCH CONFLICT TO USSR

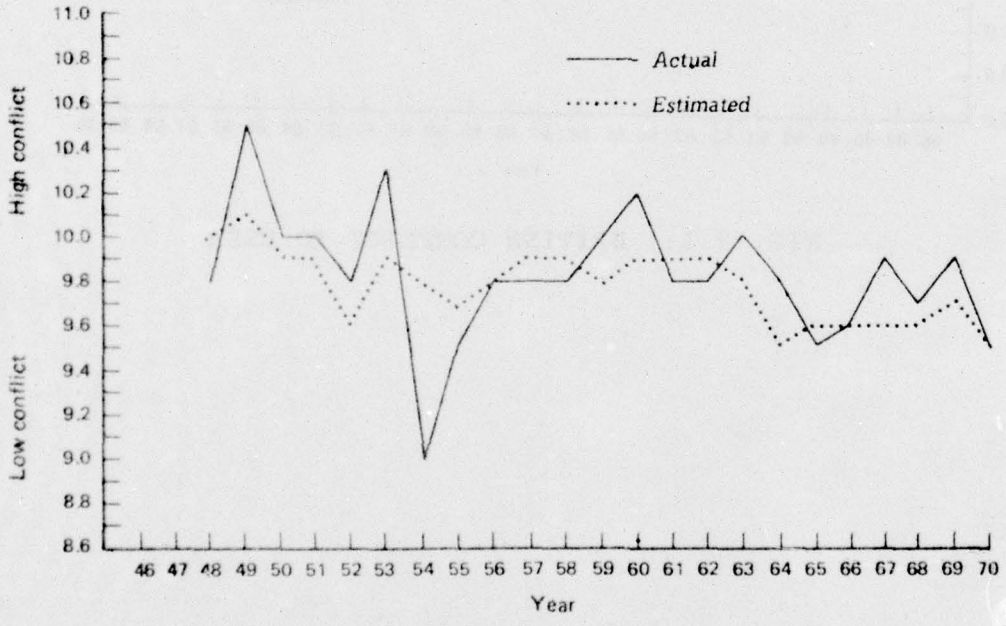


FIG. 7.3: GERMAN CONFLICT TO USSR

With the exception of the French equation, the 'connections' presented in Table 7.2 and Figures 7.1-7.3 are not as strong as those found in the previous section, though they are respectable and do lend support to the proposition that a system of East-West competition exists, with the European states' actions towards the Soviet Union being one element in this network. It is difficult to account for the superior French results. It is possible (see the footnote below) that this is due, in part, to the status of France as a 'nonconforming' alliance member (Holsti and Sullivan, 1969) over much of this period, which might have made it more responsive to other elements in the political-military system. However, with only three nations in the comparison, it is virtually impossible to isolate the reasons for national differences.

---

*In examining the courses taken by the actual behaviors of the three European nations in these figures, it is important to bear in mind the structural context within which these states acted. Since they are not the principal members of the Western alliance system, there is a sense in which their behaviors might be less related to the general course of East-West relations than is the case for the two superpowers. The latter two states have no superordinate actor to call upon for assistance if their behaviors should provoke an unanticipated reaction from the opposing superpower. Given the nature of inter-state relations (with a preponderance of words over deeds), this difference should be reflected not in the means for the conflict variables (US-SUc, SU-USc, and the three Western European conflict variables all fall into the 9.8-10.0 verbal end of the Azar-Sloan scale), but rather in their scores' variances, with superpowers having more consequential and less variable behaviors. When we examine the standard deviations for the five variables this is exactly what we find: US-SUc = .17; SU-USc = .24; UK-SUc = .34; FR-SUc = .40; WG-SUc = .30, with the Western European states' values being roughly twice as large as that of the U.S. and larger than that of the USSR. We might also expect to find the French scores to most resemble the pattern of post-war East-West relations (e.g., by having an early 1960s peak and a detente era decline in conflict through the 1960s with a 1968 Czech Crisis peak), since France has been the most nonconformist member of the Western alliance. On inspecting the figures this is exactly what we find. The result of these considerations is that we cannot easily validate these event-data variables by visual inspection, focusing on prominent turning points and trends in East-West relations, since in at least two of the cases there may be some general insulation from these processes.

Sorting Out the Influences Upon European Conflict Behaviors

As was the case in the previous section, it is of interest to determine the relative amounts of variance that can be accounted for by various sets of predictors. As before, due to the weaknesses of the specifications employed in these equations, these will be very limited analyses which will focus more on the merits of the relatively efficacious predictors than on the demerits of the less effective. Three comparisons will be made:

- Western European leaders' perceptions of tension vs. other factors,
- psychological vs. nonpsychological variables, and
- hierarchical vs. non-hierarchical factors.

Table 7.3 presents the first comparison--Western European perceptions vs. the other variables which passed the .30 criterion test in the correlation analysis.

TABLE 7.3

COMPARISON OF EUROPEAN TENSION PERCEPTIONS AND OTHER INFLUENCES UPON EUROPEAN CONFLICT BEHAVIORS

UK-SUc	Tension Perceptions:	UKp	
	Other Variables:	USp, SUp, US-SUc, US-SUa	
	Perceptions:	R = .30	R_2^2 = .09
	Other Variables:	R = .69	R^2 = .48
	increment:		.39
	Other Variables:	R = .68	R_2^2 = .47
	Perceptions:	R = .69	R^2 = .48
	increment:		.01
FR-SUc	Tension Perceptions:	FRp	
	Other Variables:	USp, SUp, US-SUc, SU-FRc	
	Perceptions:	R = .33	R_2^2 = .10
	Other Variables:	R = .80	R^2 = .65
	increment:		.55
	Other Variables:	R = .79	R_2^2 = .62
	Perceptions:	R = .80	R^2 = .65
	increment:		.03
WG-SUc	Tension Perceptions:	(None, rWGp, WG-SUc < .30)	
	Other Variables:	SUp, US-SUc, SU-USa	

While in the cases of the United Kingdom and France the leaders' perceptions have a substantial bivariate correlation with their nations' conflict behaviors towards the Soviet Union, in neither instance do these variables contribute very much variance over and above that which can be accounted for by the other factors.

A somewhat different pattern emerges when the impact of all psychological factors (articulated American and Soviet perceptions in addition to UKp, FRp, and WGp) is evaluated in Table 7.4.

TABLE 7.4

COMPARISON OF PSYCHOLOGICAL FACTORS AND OTHER INFLUENCES UPON EUROPEAN CONFLICT BEHAVIORS

UK-SUc	Psychological:	USp, SUp, UKp	
	Nonpsychological:	US-SUc, SU-UKa	
	Psychological:	R = .48	R^2 = .23
	Nonpsychological:	R = .69	R^2 = .48
	increment:		.25
	Nonpsychological:	R = .66	R^2 = .43
	Psychological:	R = .69	R^2 = .48
	increment:		.05
FR-SUc	Psychological:	USp, SUp, FRp	
	Nonpsychological:	US-SUc, SU-FRc	
	Psychological:	R = .51	R^2 = .26
	Nonpsychological:	R = .80	R^2 = .65
	increment:		.39
	Nonpsychological:	R = .78	R^2 = .62
	Psychological:	R = .80	R^2 = .65
	increment:		.03
WG-SUc	Psychological:	SUp	
	Nonpsychological:	US-SUc, SU-USa	
	Psychological:	R = .42	R^2 = .17
	Nonpsychological:	R = .54	R^2 = .29
	increment:		.12
	Nonpsychological:	R = .46	R^2 = .21
	Psychological:	R = .54	R^2 = .29
	increment:		.08

In two of the cases (the United Kingdom and West Germany) the perceptual factors add at least 5% to the variance that is accounted for by the other factors.

The final comparison involves the hierarchical and nonhierarchical factors, the same type of comparison that was made in Section Six.

TABLE 7.5

COMPARISON OF HIERARCHICAL AND NON-HIERARCHICAL INFLUENCES UPON EUROPEAN CONFLICT BEHAVIORS

UK-SUc	Hierarchical:	USp, SUp, US-SUc	
	Non-hierarchical:	UKp, SU-UKa	
	Hierarchical:	R = .57	R^2 = .32
	Non-hierarchical:	R = .69	R^2 = .48
	increment:		.15
	Non-hierarchical:	R = .57	R^2 = .32
	Hierarchical:	R = .69	R^2 = .48
	increment:		.15
FR-SUc	Hierarchical:	USp, SUp, US-SUc	
	Non-hierarchical:	FRp, SU-FRc	
	Hierarchical:	R = .55	R^2 = .31
	Non-hierarchial:	R = .80	R^2 = .65
	increment:		.34
	Non-hierarchical:	R = .69	R^2 = .48
	Hierarchical:	R = .80	R^2 = .65
	increment:		.17
WG-SUc	Hierarchical:	SUp, US-SUc, US-SUa	
	Non-hierarchical:	(None)	

The results of these comparisons are less clear-cut than was the case in Section Six. The hierarchical factors add a substantial amount of variance explained to that accounted for by the other set of variables in each of the nations. However, hierarchical factors are clearly superior only in the case of West Germany. Non-hierarchical factors are more efficacious predictors in the case of France and the two sets are tied in the case of the United Kingdom.

The Correlates of Defense Burdens

We now turn to consider the consequences which European perceptions of tension and other facets of the East-West competitive system have for a second factor: national defense burdens. Our goal is to determine what 'connections' exist between these ratios (defense expenditure/GDP) and other elements in the system of East-West competition. Table 7.6 presents the intercorrelations of the three variables which have been singled out for analysis in this paper:

- Western European leaders' tension perceptions,
- the conflict directed by their nations to the USSR, and
- national defense burdens.

TABLE 7.6

CORRELATIONS: PERCEPTIONS, CONFLICT BEHAVIORS, DEFENSE BURDENS*

United Kingdom	UKp	UK-SUc	UKdb
UKp	1.00	-.35	-.20
UK-SUc		1.00	.06
UKdb			1.00
France	**FRp**	**FR-SUc**	**FRdb**
FRp	1.00	-.33	-.43
FR-SUc		1.00	.44
FRdb			1.00
West Germany	**WGp**	**WG-SUc**	**WGdb**
WGp	1.00	-.27	-.31
WG-SUc		1.00	.21
WGdb			1.00

*Correlations $\geq$ .30 are underlined.

Once again France stands out as the 'best-connected' of the countries. Each of the correlations is in the expected direction. Higher (more favorable) perception scores are associated with lower

levels of conflict and with lower defense burden ratios. As the level of conflict expressed by each nation to the Soviet Union declined, defense spending ratios also declined.

Table 7.7 presents the correlations between the defense burdens and the sets of potential causal influences examined in preceding sections.

TABLE 7.7

THE CORRELATES OF EUROPEAN DEFENSE BURDENS

Predictors	UKdb	FRdb	WGdb
(Hierarchical)			
BLNCE	.10	.29	**.41**
USp	**-.30**	**-.47**	.27
SUp	-.13	-.26	-.09
US-SUc	**.65**	**.80**	.18
US-SUa	.00	-.01	**-.42**
SU-USc	.00	.00	**.39**
SU-USa	**.58**	**.74**	-.05
(Non-hierarchical)			
UKp	-.20		
FRp		**-.43**	
WGp			**-.31**
SU-UKc	-.13		
SU-UKa	.20		
SU-FRc		.20	
SU-FRa		.25	
SU-WGc			.17
SU-WGa			**.44**

*Correlations $\geq$ .30 are underlined. The European perception variables are also underlined.

The defense burdens appear to be well-connected, with the type of linkages varying across nations in a way that is difficult to account for with only three nations in the analysis. No predictor is salient in all nations. Four variables are salient in two nations: American perceptions, American conflict towards the USSR, amicable Soviet behaviors towards the U.S., and the European leaders' perceptions (in the cases of France and Germany).

Defense Burdens in Context

Table 7.8 shows the amount of variance in national defense burdens that can be accounted for by the factors highlighted in the correlation analysis.

TABLE 7.8

REGRESSION RESULTS: EUROPEAN DEFENSE BURDENS*

Dependent Variable	R	R^2	F	Standard Deviation of Residuals
UKdb	.71	.50	4.83	1.03
FRdb	.89	.79	12.58	.66
WGdb	.64	.41	1.56	.48

*Additional information concerning these equations is presented in the appendix.

Once again France appears to be the 'best-connected' country.

Figures 7.4-7.6 plot the courses taken by the actual and estimated defense burdens in the three nations. The figures begin in 1953, the first year for which data on the defense burdens is available.

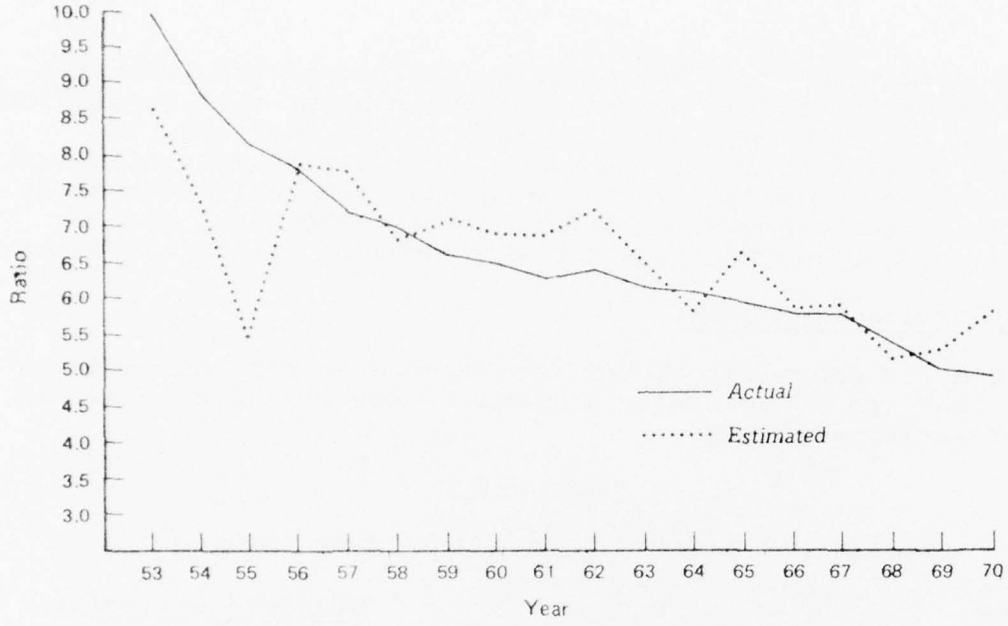


FIG. 7.4: BRITISH DEFENSE BURDEN

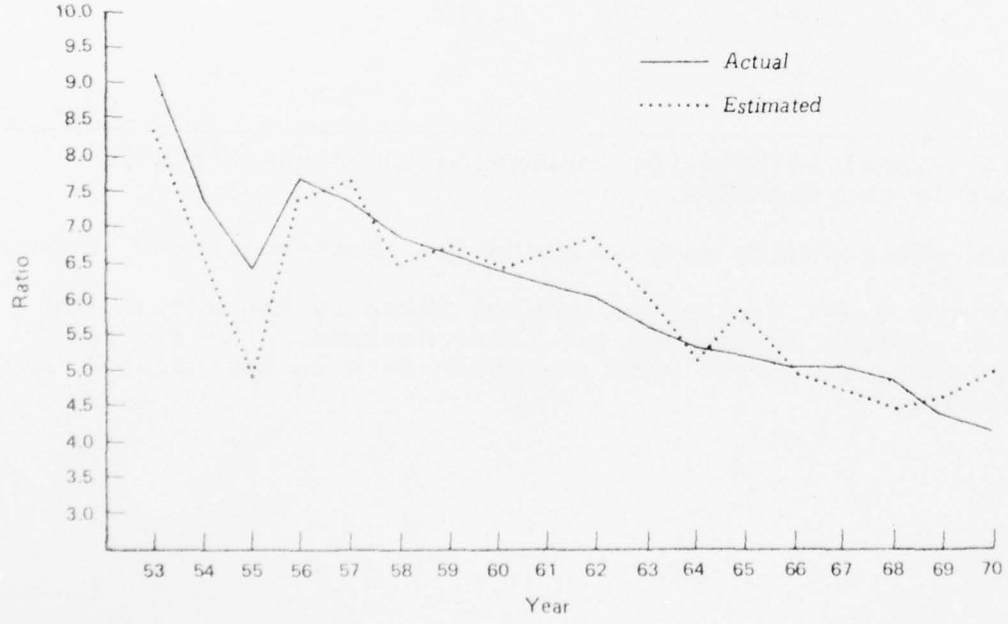


FIG. 7.5: FRENCH DEFENSE BURDEN

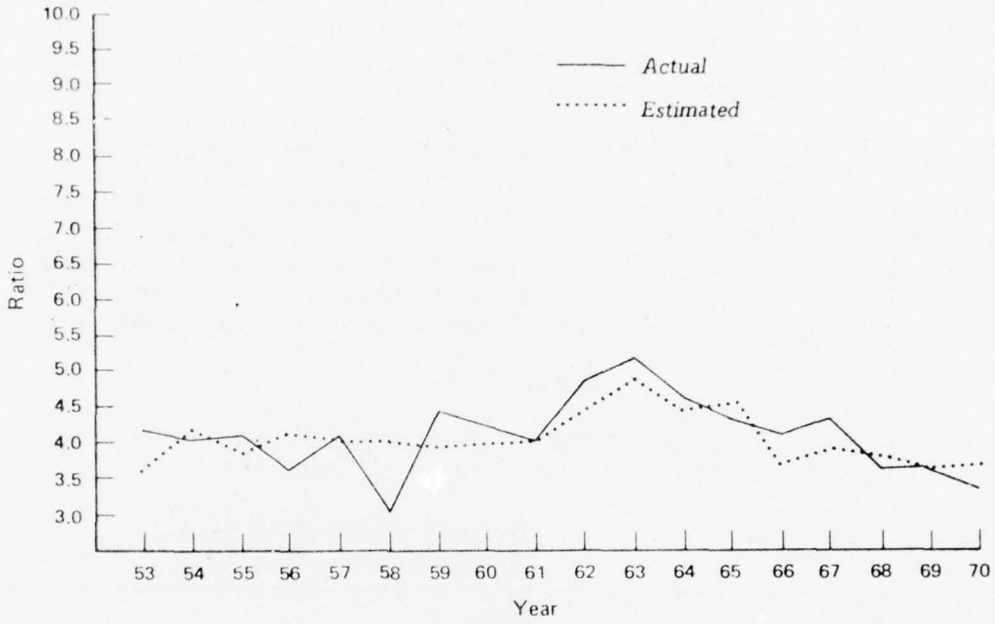


FIG. 7.6: GERMAN DEFENSE BURDEN

There is a good fit between the actual and estimated French defense burden values. The British estimates capture the overall trend while overestimating the oscillations in the series. This is probably due, in part, to the fact that the set of predictors does not include indicators of the smoothing effects of bureaucratic inertia and incremental decision making. The fit between the actual and estimated German values is fair.

Sorting Out the Influences Upon European Defense Burdens

Tables 7.9 and 7.10 show the relative predictive efficacy of European elite perceptions (UKp, FRp, and WGp) and all of the psychological variables. It is apparent that neither set adds a great deal of variance in this specification of the relationship between defense burdens and other facets of the East-West system.

TABLE 7.9

COMPARISON OF EUROPEAN TENSION PERCEPTIONS AND OTHER INFLUENCES UPON EUROPEAN DEFENSE BURDENS

UKdb	Tension Perceptions:	(None, rUKdb,UKp $<.30$)	
	Other Variables:	USp, US-SUc, SU-USa	
FRdb	Tension Perceptions:	FRp	
	Other Variables:	USp, US-SUc, SU-USa	
	Perceptions:	$R = .43$	$R^2 = .18$
	Other Variables:	$R = .89$	$R^2 = .79$
	increment:		.61
	Other Variables:	$R = .88$	$R^2 = .79$
	Tension Perceptions:	$R = .89$	$R^2 = .79$
	increment:		.00
WGdb	Tension Perceptions:	WGp	
	Other Variables:	BLNCE, SU-USc, US-SUa, SU-WGa	
	Perceptions:	$R = .31$	$R^2 = .09$
	Other Variables:	$R = .64$	$R^2 = .41$
	increment:		.32
	Other Variables:	$R = .64$	$R^2 = .41$
	Perceptions:	$R = .64$	$R^2 = .41$
	increment:		.00

TABLE 7.10

COMPARISON OF PSYCHOLOGICAL AND NONPSYCHOLOGICAL INFLUENCES UPON DEFENSE BURDENS

UKdb	Psychological:	USp	
	Nonpsychological:	US-SUc, SU-USa	
	Psychological:	R = .30	R^2 = .09
	Nonpsychological:	R = .71	R^2 = .50
	increment:		.41
	Nonpsychological:	R = .71	R^2 = .50
	Psychological:	R = .71	R^2 = .50
	increment:		.00
FRdb	Psychological:	USp, FRp	
	Nonpsychological:	US-SUc, SU-USa	
	Psychological:	R = .49	R^2 = .24
	Nonpsychological:	R = .89	R^2 = .79
	increment:		.55
	Nonpsychological:	R = .88	R^2 = .79
	Psychological:	R = .89	R^2 = .79
	increment:		.00
WGdb	Psychological:	WGp	
	Nonpsychological:	BLNCE, SU-USc, US-SUa, SU-WGa	
	Psychological:	R = .31	R^2 = .09
	Nonpsychological:	R = .64	R^2 = .41
	increment:		.32
	Nonpsychological:	R = .64	R^2 = .41
	Psychological:	R = .64	R^2 = .41
	increment:		.00

The final comparison (presented in Table 7.11) has to do with the impact of hierarchical and non-hierarchical factors upon the European defense burdens. It can be seen that the hierarchical set is the most efficacious predictor across all three nations (though in the case of Germany the difference is a very small one).

TABLE 7.11

COMPARISON OF HIERARCHICAL AND NON-HIERARCHICAL INFLUENCES UPON EUROPEAN DEFENSE BURDENS

UKdb	Hierarchical:	USp, US-SUc, SU-USa	
	Non-hierarchical:	(none)	
FRdb	Hierarchical:	USp, US-SUc, SU-USa	
	Non-hierarchical:	FRp	
	Hierarchical:	R = .88	R^2 = .79
	Non-hierarchical:	R = .89	R^2 = .79
	increment:		.00
	Non-hierarchical:	R = .43	R^2 = .18
	Hierarchical:	R = .89	R^2 = .79
	increment:		.61
WGdb	Hierarchical:	BLNCE, SU-USc, US-SUa	
	Non-hierarchical:	WGp, SU-WGa	
	Hierarchical:	R = .53	R^2 = .28
	Non-hierarchical:	R = .64	R^2 = .41
	increment:		.13
	Non-hierarchical:	R = .50	R^2 = .25
	Hierarchical:	R = .64	R^2 = .41
	increment:		.16

SECTION EIGHT: CONCLUSIONS

Three issues have been considered in this paper:

- the course taken by leaders' perceptions in the United Kingdom, France, and West Germany of the state of East-West tension in Europe;
- the linkages which these perceptions have had with other elements in the hypothesized system of East-West competition;
- other linkages in this system which were uncovered in the course of examining the second issue.

The conclusions that can be drawn from these analyses are predicated upon, and limited by, the assumptions made in the early sections of the paper and the methodological strategies used to address the issues. Even within these limits, the results are quite favorable.

Relying upon a secondary analysis of Goldmann's data (1974), it has been shown that elite perceptions can be systematically monitored on the national level. Moreover, this has been done in a way that allows these perceptions to be systematically related to other factors (such as the behaviors exchanged between nations). Examination of the perceptual data showed the early date at which 'psychological detente' took place in Western European nations, after the initial series of Soviet-American agreements that followed the Missile Crisis but before the initiation of the more prominent series of accords that began with the first Nixon Administration.

Examining the 'connections' which these perceptions had with other elements in the East-West system, it was seen (in Section Six) that the perceptions varied in accordance with the patterns taken by a number of other factors which were hypothesized to belong to this system. The course of the perceptions in all three nations could be accurately reproduced on the basis of these other factors. While the salient predictors varied, to some extent, across nations, hierarchical factors pertaining to the two superpowers were particularly efficacious predictors.

In Section Seven the perceptions were compared with other potential predictors of defense burdens and the conflict behaviors directed by Western European nations to the USSR. Perceptions were found to have substantial bivariate correlations with the criterions in four instances (conflict behaviors for the United Kingdom and France; defense burdens for France and West Germany). The moderate magnitudes of these correlations were not unexpected, since the perceptions index only one of several psychological factors of potential interest.

When added to equations already containing other predictors, the Western European perceptions did not add large increments in variance explained. Given the weakness of the specifications involved in these comparisons, it is impossible to say if this is due to the perceptions not being significant influences upon the criterion behaviors (they may simply reflect the operation of other factors) or to the specification structure employed, which does not deal with their potential roles as one of several intermediary variables mediating the influence of other factors upon the criterion national behaviors.

In the course of examining and comparing the West European perceptions, a number of other linkages in the system of East-West competition were discovered. Western European states' conflict towards the USSR and defense burdens were fairly well accounted for, with the French equations showing the most extensive 'connections'. While it is tempting to ascribe this to France's status as a 'nonconforming' alliance member (Holsti and Sullivan, 1969) which might make it more responsive to external influences, it is not possible to come to any definite conclusions on this score with only three nations in the comparison.* One point which stood out strongly in Section Seven, across both dependent variables, was the important role played by hierarchical factors in accounting for the criterion behaviors.

The results presented in this paper are quite favorable to the hypotheses and assumptions considered. Western European perceptions are well-connected with a set of predictors and have some bivariate linkages with two of their potential consequences. The general patterns of covariation uncovered are evidence in favor of the existence of the hypothesized system of East-West relations, even though they cannot, in and of themselves, capture this system in all of its likely complexity. Finally, the prominent role played by hierarchical factors in these analyses supports the earlier emphasis on the importance of structural factors in accounting for East-West relations.

---

*More attention needs to be devoted to this question. In what precise senses can France be said to have less (or more) 'common fate' (Campbell, 1958) than other members of the Western alliance?

APPENDIX: ADDITIONAL INFORMATION CONCERNING THE REGRESSION EQUATIONS

This appendix provides the standardized and unstandardized regression weights (partial regression coefficients) for the equations used to produce regression estimates in Section Six and Section Seven. The variables in these equations were selected in the correlation analyses, using the $r \geq .30$ criterion. As argued in the body of the paper, it is difficult to interpret these weights due to the existence of multicollinearity and the weakness of the equation specifications. In some cases the addition or subtraction of variables could have significant impact upon the magnitudes and signs of the regression coefficients. As a result the weights are presented here without any attempt at substantive interpretation. By the same token, no attention is given to the statistical significance of individual coefficients, another factor which is affected by multicollinearity and weak specification.

There is no consensus on the ways in which missing data should be treated in regression analysis. These equations were estimated using the pair-wise deletion option of the SPSS* package. The first three equations were estimated over the span of the dependent variable (1946-1970). Because the event data predictors begin in 1948, non-event variables were used to estimate the residuals for 1946 and 1947. The second set of equations were estimated for 1948-1970. The final triplet were estimated for the period 1953-1970.

As was argued in the body of the paper, the response (if any) that should be made to the existence of autocorrelation is by no means a simple matter. The Durbin-Watson 'd' statistics for the nine equations are: UKp = 1.94; FRp = 1.87; WGp = 1.67; UK-SUc = 2.61; FR-SUc = 1.47; WG-SUc = 2.02; UKdb = 0.84; FRdb = 1.02; WGdb = 2.40. The UKp and WG=SUc equations pass the test; the UKdb equation clearly fails, the FRdb equation comes close to failing and the remainder fall into the indeterminate range of the test.

*Norman H. Nie et al., SPSS/Statistical Package for the Social Sciences, New York: McGraw-Hill, 1970.

TABLE A-1

REGRESSION COEFFICIENTS

DEP. VAR.	IND. VAR.	r	Beta	b
UKp	US-SUc	-.51	.009	.006
	SUp	.76	.43	.37
	USp	.81	.56	.40
FRp	SU-FRc	-.35	-.07	-.03
	BLNCE	-.49	-.31	-.05
	US-SUc	-.53	-.08	-.11
	SUp	.77	.47	.77
	USp	.74	.29	.39
WGp	SU-WGa	-.35	-.25	-.05
	BLNCE	-.39	-.29	-.03
	US-SUc	-.82	-.67	-.56
	SU-WGc	-.30	-.02	-.01
	USp	.54	.08	.07
UK-SUc	USp	-.30	-.10	-.22
	SU-UKa	-.51	-.42	-.44
	US-SUc	.48	.33	.66
	SUp	-.47	-.31	-.82
	UKp	-.35	.23	.68
FR-SUc	USp	-.41	-.09	-.22
	SUp	-.42	-.22	-.68
	US-SUc	.50	.43	1.00
	SU-FRc	.68	.61	.52
	FRp	-.33	.36	.66
WG-SUc	SU-USa	.30	.23	.33
	US-SUc	.41	.21	.36
	SUp	-.42	-.32	-.74
UKdb	SU-USa	.58	.35	2.38
	US-SUc	.65	.49	4.82
	USp	-.30	.07	.63
FRdb	USp	-.47	.03	.30
	US-SUc	.80	.55	5.24
	SU-USa	.74	.42	2.78
	FRp	-.43	-.09	-.54

(Table A-1, continued)

DEP.VAR.	IND.VAR.	r	Beta	b
WGdb	BLNCE	.41	.28	.10
	SU-USc	.39	.14	.30
	US-SUa	-.42	-.20	-.55
	SU-WGa	.44	.36	.29
	WGp	-.31	.02	.12

BIBLIOGRAPHY

Alan C. Acock and Melvin L. DeFleur, A Configurational Approach to Contingent Consistency in the Attitude-Behavior Relationship, American Sociological Review, December 1972, 714-726.

Georgi Arbatov, The War of Ideas in Contemporary International Relations, Moscow: Progress, 1973.

Michael Argyle and Brian R. Little, Do Personality Traits Apply to Social Behaviour?, Journal of the Theory of Social Behavior, 1972, No. 2, 1-35.

Edward E. Azar and Thomas J. Sloan, Dimensions of Interaction: A Source Book for the Study of the Behavior of 31 Nations from 1948 through 1973, Pittsburgh: International Studies Association, 1975.

Hubert M. Blalock, Jr., Theory Construction, Englewood Cliffs: Prentice-Hall, 1969.

Hubert M. Blalock, Jr., Causal Models in the Social Sciences, Chicago: Aldine, 1971.

Fernand Braudel, The Mediterranean and the Mediterranean World in the Age of Philip II, Volumes I and II, New York: Harper and Row, 1973.

Marilyn Brewer, Donald T. Campbell, and William Crano, Testing a Single Factor Model as an Alternative to the Misuse of Partial Correlations in Hypothesis Testing Research, Sociometry, March 1970, 1-11.

Katrina Brodin, Belief Systems, Doctrines, and Foreign Policy, Cooperation and Conflict, 1, 1972, 97-112.

Richard A. Brody, Cognition and Behavior: A Model of International Relations, in O. J. Harvey (ed) Experience, Structure, and Adaptability, New York: Springer, 1966, 321-348.

Donald T. Campbell, Common Fate, Similarity, and Other Indices of the Status of Aggregates of Persons as Social Entities, Behavioral Science, 1, 1958, 14-25.

Donald T. Campbell, Social Attitudes and Other Acquired Behavioral Dispositions, in S. Koch (ed.) Psychology: A Study of a Science, Vol. 6, New York: McGraw-Hill, 1963, 94-172.

Donald T. Campbell, Pattern Matching as an Essential in Distal Knowing, in K. R. Hammond (ed.) The Psychology of Egon Brunswik, New York: Holt, 1966, 81-106.

Donald T. Campbell and Donald W. Fiske, Convergent and Discriminant Validation by the Multitrait-Multimethod Matrix, Psychological Bulletin, 1959, 81-105.

William R. Caspary, The "Mood Theory," A Study of Public Opinion and Foreign Policy, American Political Science Review, June 1970, 536-547.

Central Intelligence Agency, Biographic Report: USSR Institute of the United States of America and Canada, CR 76-10864, April 1976, Unclassified/Available via the Library of Congress DOCEX system.

Partha Chatterjee, Arms, Alliances, and Stability, New York: Wiley, 1975.

Nazli Choucri and Robert C. North, Nations in Conflict: National Growth and International Violence, San Francisco: Freeman, 1975.

Carl F. Christ, Judging the Performance of Econometric Models of the U.S. Economy, International Economic Review, February 1975, 54-74.

Fernando Cortes, Adam Przeworski, and John Sprague, Systems Analysis for Social Scientists, New York: Wiley, 1974.

Richard W. Cottam, Foreign Policy Motivation, A General Theory and a Case Study, Pittsburgh: University of Pittsburgh Press, 1977.

Daniel Druckman and Robert Mahoney, Processes and Consequences of International Negotiations, Journal of Social Issues, 1/1977.

Martin Fishbein and Icek Ajzen, Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research, Reading, Mass: Addison-Wesley, 1975.

Samuel L. Gaertner, Nonreactive Measures in Racial Attitude Research: A Focus on "Liberals," in Phyllis A. Katz (ed.) Towards the Elimination of Racism, New York: Pergamon Press, 1976, 183-211.

Alexander George and Richard Smoke, Deterrence in American Foreign Policy: Theory and Practice, New York: Columbia University Press, 1974.

Arthur S. Goldberger and Otis Dudley Duncan (eds.) Structural Equation Models in the Social Sciences, New York: Seminar Press, 1973.

Kjell Goldmann, Research Note: East-West Tension in Europe, 1946-1970: A Conceptual Analysis and a Quantitative Description, World Politics, October 1973, 106-125.

Kjell Goldmann, Tension and Detente in Bipolar Europe, Stockholm: Esselte Studium/Scandinavian University Books, 1974.

Kjell Goldmann and Lars Hall, Spanningen I Europea, 1946-1970, Stockholm: Swedish Institute of International Affairs, 1972.

Robert A. Gordon, Issues in Multiple Regression, American Journal of Sociology, March 1968, 592-616.

Harold Guetzkow, Comment on Andriole, Wilkenfeld, and Hopple, International Studies Quarterly, June 1976, 331-334.

Ted Robert Gurr, Why Men Rebel, Princeton: Princeton University Press, 1970.

James E. Harf, David G. Hoovler, Thomas E. James, Jr., Systemic and External Attributes in Foreign Policy Analysis in James N. Rosenau (ed.) Comparing Foreign Policies: Theories, Findings, and Methods, Beverly Hills: Sage, 1974. 235-249.

Michael Harrington, The Twilight of Capitalism, New York: Simon and Schuster, 1976.

David R. Heise, Problems in Path Analysis and Causal Inference, in Edgar F. Borgatta (ed.) Sociological Methodology 1969, San Francisco: Jossey-Bass, 1969, 38-73.

David R. Heise, Causal Analysis, New York: Wiley, 1975.

Douglas A. Hibbs, Jr., Problems of Statistical Estimation and Causal Inference in Time-Series Regression Models, in Herbert L. Costner (ed) Sociological Methodology, 1973-1974, San Francisco: Jossey-Bass, 1974, 252-308.

Gordon Hilton, Intermediate Politometrics, New York: Columbia University Press, 1976.

Ole Holsti, Foreign Policy Formulation Viewed Cognitively, 18-54 in Robert Axelrod (ed.) Structure of Decision, Princeton: University Press, 1976.

Ole R. Holsti and John D. Sullivan, National-International Linkages: France and China as Nonconforming Alliance Members, in James N. Rosenau (ed.) Linkage Politics, New York: Free Press, 1969, 147-195.

C. Hovland, Reconciling Conflicting Results Derived from Experimental and Survey Studies of Attitude Change, American Psychologist, 1959, 8-17.

AD-A043 661 CENTER FOR NAVAL ANALYSES ARLINGTON VA F/G 5/4
EUROPEAN PERCEPTIONS AND EAST-WEST COMPETITION, (U)
JUL 77 R B MAHONEY
UNCLASSIFIED CNA-PROFESSIONAL PAPER-19 NL

2 OF 2
AD
A043661

END
DATE
FILMED
9 -77
DDC

E. Phillip Howrey, Lawrence R. Klein, and Michael D. McCarthy, Notes on Testing the Predictive Performance of Econometric Models, International Economic Review, June 1974, 366-383.

Helge Hveem, International Relations and World Images, Oslo: Universitetsforlaget, 1972.

Irving L. Janis and Raymond Fadner, The Coefficient of Imbalance, in Harold D. Lasswell et al., Language and Politics, Studies in Quantitative Semantics, New York: Stewart, 1949, 153-169.

Christopher D. Jones, Just Wars and Limited Wars: Restraints on the Use of the Soviet Armed Forces, World Politics, October 1975, 44-68.

Susan Jones and J. David Singer, Beyond Conjecture in International Politics, Ithaca: Peacock, 1972.

David A. Kenny, Cross-Lagged Panel Correlation: A Test for Spuriousness, Psychological Bulletin, 1975, 6, 887-903.

Elizabeth J. Kirk, International Perception and Foreign Policy: Literature Survey and Assessment, Bethesda, Maryland: Mathematica, Inc., 1976.

Roger M. Krause, Daniel Druckman, Richard Rozelle, and Robert Mahoney, Components of Value and Representation in Coalition Formation, Journal of Peace Science, Spring 1975, 141-158.

Richard T. Lapiere, Attitudes Vs. Actions, Social Forces, December 1934, 230-237.

Knud Larsen, Gary Schwendiman, and David V. Stimpson, Change in Attitude Toward Negroes Resulting from Exposure to Congruent and Non-Congruent Attitude Objects, Journal of Peace Research, 2/1969, 157-161.

Mark Levine, The Accuracy and Generality of Competing Explanatory Models of Interstate Behavior: A Study of Amicable Transactions with the Superpowers, 1953 and 1963, dissertation, University of Pennsylvania, 1973.

Kurt Lewin, Field Theory in Social Science, New York, Harper and Row, 1951.

Robert B. Mahoney, Jr., An Assessment of Public and Elite Perceptions in France, the United Kingdom, and the Federal Republic of Germany, Center for Naval Analyses, Memorandum 76-0659, 21 April 1976; paper prepared for DARPA-sponsored conference on "Perception of the U.S.-Soviet Military Balance and Peacetime Uses of Military Power" held at RAND-Washington, April 1976, (CNA Professional Paper No. 164)

Robert B. Mahoney, Jr., American Political-Military Operations and the Structure of the International System, 1946-1975, paper presented at the meeting of the Section on Military Studies, International Studies Association, Ohio State University, October 1976.

Ronald Mlotek and Steven Rosen, The Calculus of Cost-Tolerance: Public Opinion and Foreign Wars, in Joseph D. Ben-Dak (ed.), The Future of Collective Violence: Societal and International Perspectives, Lund, Sweden: Studentliterratur, 1974, 99-123.

Don Munton, Comparative Foreign Policy: Fads, Fantasies, Orthodoxies, Perversities, in James N. Rosenau (ed.) In Search of Global Patterns, New York: Free Press, 1976, 257-271.

Norman Nie, Sidney Verba, John R. Petrocik, The Changing American Voter, Cambridge: Harvard University Press, 1976.

Sophia Peterson, Events, Mass Opinion, and Elite Attitudes, in Richard Merritt (ed.) Communication in International Politics, Urbana: University of Illinois Press, 1972.

Karl Popper, The Logic of Scientific Discovery, New York: Harper and Row, 1959.

Karl Popper, Objective Knowledge, London: Oxford University Press, 1972.

Adam Przeworski and Henry Teune, The Logic of Comparative Social Inquiry, New York: Wiley, 1970.

Hans Rattinger, Armaments, Detente, and Bureaucracy: The Case of the Arms Race in Europe, Journal of Conflict Resolution, December 1975, 571-595.

Milton J. Rosenberg, Images in Relation to the Policy Process: American Public Opinion on Cold-War Issues, in Herbert C. Kelman (ed.) International Behavior, New York: Holt, 1965, 277-334.

R. J. Rummel, Understanding Conflict and War: 1, The Dynamic Psychological Field, Berverly Hills: Sage, 1975.

R. J. Rummel, Peace Endangered, Beverly Hills: Sage, 1976.

Secretary of Defense Donald H. Rumsfeld, Annual Defense Department Report FY 1977, Washington: 1976.

Thomas C. Schelling, The Strategy of Conflict, Cambridge: Harvard University Press, 1960.

Secretary of Defense James R. Schlesinger, Annual Defense Department Report, FY 1976 and FT 197T, Washington: 1975.

Dieter Senghaas, Towards an Analysis of Threat Policy in International Relations, in Klaus von Beyme (ed.) German Political Studies, Volume I, Beverly Hills: Sage, 1975, 59-103.

Thomas J. Sloan, A Summary Report on the Development of the Cooperation-Conflict Interaction Scale for Inter-Nation Events Data, The Review of Peace Science, Volume I, 1973, 171-182.

Bertram Spector et al., Quantitative Indicators for Defense Analysis, Volume II, Technical Report, Arlington, VA.: CACI, Inc, 1975.

Stockholm International Peace Research Institute, World Armaments and Disarmament, SIPRI Yearbook 1975, Cambridge: MIT Press, 1975.

Charles Tittle and Richard Hill, Attitude Measurement and the Prediction of Behavior..., Sociometry, 1, 1967, 199-213.

D. Tomashevsky, Lenin's Ideas and Modern International Relations, Moscow: Progress Publishers, 1974.

Peter Wallensteen Structure and War: On International Relations, Stockholm: Raben and Sjogren, 1973.

Immanuel Wallerstein, The Modern World System: Capitalist Agriculture and the Origins of the European World Economy in the Sixteenth Century, New York: Academic Press, 1974.

E. J. Webb, D. T. Campbell, D. S. Schwartz, and L. Sechrest, Unobtrusive Measures: Nonreactive Research in the Social Sciences, Chicago: Rand McNally, 1966.

Erich Weede, World Order in the Fifties and Sixties: Dependence, Deterrence, and Limited Peace, Papers, Peace Science Society (International), Volume 24, 1975, 48-80.

Erich Weede, Overwhelming Preponderance as a Pacifying Condition Among Contiguous Asian Dyads, 1950-1969, Journal of Conflict Resolution, September 1976, 395-411.

Alan Wicker, Attitudes, Vs. Actions..., Journal of Social Issues, 4, 1969, 41-79.

Robert Winch and Donald T. Campbell, Proof? No. Evidence? Yes. The Significance of Tests of Significance. American Sociologist, May 1969, 140-143.

Ronald J. Wonnacott and Thomas H. Wonnacott, Econometrics, New York: Wiley, 1970.

Dina Zinnes, Contemporary Research in International Relations, New York: Free Press, 1976.

CNA Professional Papers – 1973 to Present*

PP 103
Friedheim, Robert L., "Political Aspects of Ocean Ecology," 48 pp., Feb 1973, published in Who Protects the Oceans, John Lawrence Hargrove (ed.) (St. Paul: West Publ'g. Co., 1974), published by the American Society of International Law) AD 757 936

PP 104
Schick, Jack M., "A Review of James Cable, Gunboat Diplomacy: Political Applications of Limited Naval Forces," 5 pp., Feb 1973, (Reviewed in the American Political Science Review, Vol. LXVI, Dec 1972)

PP 105
Corn, Robert J. and Phillips, Gary R., "On Optimal Correction of Gunfire Errors," 22 pp., Mar 1973, AD 761 674

PP 106
Stoloff, Peter H., "User's Guide for Generalized Factor Analysis Program (FACTAN)," 35 pp., Feb 1973, (Includes an addendum published Aug 1974) AD 758 824

PP 107
Stoloff, Peter H., "Relating Factor Analytically Derived Measures to Exogenous Variables," 17 pp., Mar 1973, AD 758 820

PP 108
McConnell, James M. and Kelly, Anne M., "Superpower Naval Diplomacy in the Indo-Pakistani Crisis," 14 pp., 5 Feb 1973, (Published, with revisions, in Survival, Nov/Dec 1973) AD-761 675

PP 109
Berghoefer, Fred G., "Salaries: A Framework for the Study of Trend," 8 pp., Dec 1973, (Published in *Review of Income and Wealth*, Series 18, No. 4, Dec 1972)

PP 110
Augusta, Joseph, "A Critique of Cost Analysis," 9 pp., Jul 1973, AD 766 376

PP 111
Herrick, Robert W., "The USSR's 'Blue Belt' of Defense: Concept: A Unified Military Plan for Defense Against Seaborne Nuclear Attack by Strike Carriers and Polaris/Poseidon SSBNs," 18 pp., May 1973, AD 766 375

PP 112
Ginsberg, Lawrence H., "ELF Atmospheric Noise Level Statistics for Project SANGUINE," 29 pp., Apr 1974, AD 786 969

PP 113
Ginsberg, Lawrence H., "Propagation Anomalies *During Project* SANGUINE *Experiments*," 5 pp., Apr 1974, AD 786 968

PP 114
Maloney, Arthur P., "Job Satisfaction and Job Turnover," 41 pp., Jul 1973, AD 768 410

PP 115
Silverman, Lester P., "The Determinants of Emergency and Elective Admissions to Hospitals," 145 pp., 18 Jul 1973, AD 766 377

PP 116
Rehm, Allan S., "An Assessment of Military Operations Research in the USSR," 19 pp., Sep 1973, (Reprinted from Proceedings, 30th Military Operations Research Symposium (U), Secret Dec 1972) AD 770 116

PP 117
McWhite, Peter B. and Ratliff, H. Donald,* "Defending a Logistics System Under Mining Attack,"** 24 pp., Aug 1976 (to be submitted for publication in Naval Research Logistics Quarterly), presented at 44th National Meeting, Operations Research Society of America, November 1973, AD A030 454
**University of Florida.*
***Research supported in part under Office of Naval Research Contract N00014-68-0273-0017*

PP 118
Barfoot, C. Bernard, "Markov Duels," 18 pp., Apr 1973, (Reprinted from Operations Research, Vol. 22, No. 2, Mar-Apr 1974)

PP 119
Stoloff, Peter and Lockman, Robert F., "Development of Navy Human Relations Questionnaire," 2 pp., May 1974, (Published in American Psychological Association Proceedings, 81st Annual Convention, 1973) AD 779 240

PP 120
Smith, Michael W. and Schrimper, Ronald A.,* "Economic Analysis of the Intracity Dispersion of Crimin[illegible] Activity," 30 pp., Jun 1974, (Presented at the Econometric Society Meetings, 30 Dec 1973) AD 780 534
**Economics, North Carolina State University.*

PP 121
Devine, Eugene J., "Procurement and Retention of Navy Physicians," 21 pp., Jun 1974, (Presented at the 49th Annual Conference, Western Economic Association, Las Vegas, Nev., 10 Jun 1974) AD 780 539

PP 122
Kelly, Anne M., "The Soviet Naval Presence During the Iraq-Kuwaiti Border Dispute: March-April 1973," 34 pp., Jun 1974, (Published in Soviet Naval Policy, ed. Michael MccGwire; New York: Praeger) AD 780 592

PP 123
Petersen, Charles C., "The Soviet Port-Clearing Operation in Bangladash, March 1972-December 1973," 35 pp., Jun 1974, (Published in Michael MccGwire, et al. (eds) Soviet Naval Policy: Objectives and Constraints, (New York: Praeger Publishers, 1974) AD 780 540

PP 124
Friedheim, Robert L. and Jehn, Mary E., "Anticipating Soviet Behavior at the Third U.N. Law of the Sea Conference: USSR Positions and Dilemmas," 37 pp., 10 Apr 1974, (Published in Soviet Naval Policy, ed. Michael MccGwire; New York: Praeger) AD 783 701

PP 125
Weinland, Robert G., "Soviet Naval Operations–Ten Years of Change," 17 pp., Aug 1974, (Published in Soviet Naval Policy, ed. Michael MccGwire; New York: Praeger) AD 783 962

PP 126 – Classified.

PP 127
Dragnich, George S., "The Soviet Union's Quest for Access to Naval Facilities in Egypt Prior to the June War of 1967," 64 pp., Jul 1974, AD 786 318

PP 128
Stoloff, Peter and Lockman, Robert F., "Evaluation of Naval Officer Performance," 11 pp., (Presented at the 82nd Annual Convention of the American Psychological Association, 1974) Aug 1974, AD 784 012

PP 129
Holen, Arlene and Horowitz, Stanley, "Partial Unemployment Insurance Benefits and the Extent of Partial Unemployment," 4 pp., Aug 1974, (Published in the Journal of Human Resources, Vol. IX, No. 3, Summer 1974) AD 784 010

PP 130
Dismukes, Bradford, "Roles and Missions of Soviet Naval General Purpose Forces in Wartime: Pro-SSBN Operation," 20 pp., Aug 1974, AD 786 320

PP 131
Weinland, Robert G., "Analysis of Gorshkov's *Navies in War and Peace*," 45 pp., Aug 1974, (Published in Soviet Naval Policy, ed. Michael MccGwire; New York: Praeger) AD 786 319

PP 132
Kleinman, Samuel D., "Racial Differences in Hours Worked in the Market: A Preliminary Report," 77 pp., Feb 1975, (Paper read on 26 Oct 1974 at Eastern Economic Association Convention in Albany, N.Y.) AD A 005 517

PP 133
Squires, Michael L., "A Stochastic Model of Regime Change in Latin America," 42 pp., Feb 1975, AD A 007 912

PP 134
Root, R. M. and Cunniff, P. F.,* "A Study of the Shock Spectrum of a Two-Degree-of-Freedom Nonlinear Vibratory System," 39 pp., Dec 1975, (Published in the condensed version of The Journal of the Acoustic Society, Vol 60, No. 6, Dec 1976, pp. 1314
**Department of Mechanical Engineering, University of Maryland.*

PP 135
Goudreau, Kenneth A., Kurmack, Richard A., Wiedemann, Karen, "Analysis of Closure Alternatives for Naval Stations and Naval Air Stations," 47 pp., 3 Jun 1975 (Reprinted from "Hearing before the Subcommittee on Military Construction of the Committee on Armed Service," U.S. Senate, 93rd Congress, 1st Session, Part 2, 22 Jun 1973)

PP 136
Stellings, William, "Cybernetics and Behavior Therapy," 13 pp., Jun 1975

PP 137
Petersen, Charles C., "The Soviet Union and the Reopening of the Suez Canal: Mineclearing Operations in the Gulf of Suez," 30 pp., Aug 1975, AD A 015 376

*CNA Professional Papers with an AD number may be obtained from the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22151. Other papers are available from the author at the Center for Naval Analyses, 1401 Wilson Boulevard, Arlington, Virginia 22209.

CNA Professional Papers – 1973 to Present (Continued)

PP 138
Stallings, William, "BRIDGE: An Interactive Dialogue Generation Facility," 5 pp., Aug 1975 (Reprinted from IEEE Transactions on Systems, Man, and Cybernetics, Vol. 5, No. 3, May 1975)

PP 139
Morgan, William F., Jr., "Beyond Folklore and Fables in Forestry to Positive Economics," 14 pp., (Presented at Southern Economic Association Meetings November, 1974) Aug 1975, AD A 015 293

PP 140
Mahoney, Robert and Druckman, Daniel*, "Simulation, Experimentation, and Context," 36 pp., 1 Sep 1975, (Published in Simulation & Games, Vol. 6, No. 3, Sep 1975)
*Mathematica, Inc.

PP 141
Mizrahi, Maurice M., "Generalized Hermite Polynomials,"* 5 pp., Feb 1976 (Reprinted from the Journal of Computational and Applied Mathematics, Vol. 1, No. 4 (1975), 273-277).
*Research supported by the National Science Foundation

PP 142
Lockman, Robert F., Jehn, Christopher, and Shughart, William F. II, "Models for Estimating Premature Losses and Recruiting District Performance," 36 pp., Dec 1975 (Presented at the RAND Conference on Defense Manpower, Feb 1976, to be published in the conference proceedings) AD A 020 443

PP 143
Horowitz, Stanley and Sherman, Allan (LCdr., USN), "Maintenance Personnel Effectiveness in the Navy," 33 pp., Jan 1976 (Presented at the RAND Conference on Defense Manpower, Feb 1976; to be published in the conference proceedings) AD A021 581

PP 144
Durch, William J., "The Navy of the Republic of China – History, Problems, and Prospects," 66 pp., Aug 1976 (To be published in "A Guide to Asiatic Fleets," ed. by Barry M. Blechman; Naval Institute Press) AD A030 460

PP 145
Kelly, Anne M., "Port Visits and the "Internationalist Mission" of the Soviet Navy," 36 pp., Apr 1976 AD A023 436

PP 146
Palmour, Vernon E., "Alternatives for Increasing Access to Scientific Journals," 6 pp., Apr 1975 (Presented at the 1975 IEEE Conference on Scientific Journals, Cherry Hill, N.C., Apr 28-30; published in IEEE Transactions on Professional Communication, Vol. PC-18, No. 3, Sep 1975) AD A021 798

PP 147
Kessler, J. Christian, "Legal Issues in Protecting Offshore Structures," 33 pp., Jun 1976 (Prepared under task order N00014-68-A-0091-0023 for ONR) AD A028 389

PP 148
McConnell, James M., "Military-Political Tasks of the Soviet Navy in War and Peace," 62 pp., Dec 1975 (Published in Soviet Oceans Development Study of Senate Commerce Committee October 1976) AD A022 590

PP 149
Squires, Michael L., "Counterforce Effectiveness: A Comparison of the Tsipis "K" Measure and a Computer Simulation," 24 pp., Mar 1976 (Presented at the International Study Association Meetings, 27 Feb 1976) AD A022 591

PP 150
Kelly, Anne M. and Petersen, Charles, "Recent Changes in Soviet Naval Policy: Prospects for Arms Limitations in the Mediterranean and Indian Ocean," 28 pp., Apr 1976, AD A 023 723

PP 151
Horowitz, Stanley A., "The Economic Consequences of Political Philosophy," 8 pp., Apr 1976 (Reprinted from Economic Inquiry, Vol. XIV, No. 1, Mar 1976)

PP 152
Mizrahi, Maurice M., "On Path Integral Solutions of the Schrodinger Equation, Without Limiting Procedure,"* 10 pp., Apr 1976 (Reprinted from Journal of Mathematical Physics, Vol. 17, No. 4 (Apr 1976), 566-575).
*Research supported by the National Science Foundation

PP 153
Mizrahi, Maurice M., "WKB Expansions by Path Integrals, With Applications to the Anharmonic Oscillator,"* 137 pp., May 1976 (Submitted for publication in Annals of Physics). AD A025 440
*Research supported by the National Science Foundation

PP 154
Mizrahi, Maurice M., "On the Semi-Classical Expansion in Quantum Mechanics for Arbitrary Hamiltonians," 19 pp., May 1976 (To appear in the Journal of Mathematical Physics) AD A025 441

PP 155
Squires, Michael L., "Soviet Foreign Policy and Third World Nations," 26 pp., Jun 1976 (Prepared for presentation at the Midwest Political Science Association meetings, Apr 30, 1976) AD A028 388

PP 156
Stallings, William, "Approaches to Chinese Character Recognition," 12 pp., Jun 1976 (Reprinted from Pattern Recognition (Pergamon Press), Vol. 8, pp. 87-98, 1976) AD A028 692

PP 157
Morgan, William F., "Unemployment and the Pentagon Budget: Is There Anything in the Empty Pork Barrel?" 20 pp., Aug 1976 AD A030 455

PP 158
Haskell, LCdr. Richard D. (USN), "Experimental Validation of Probability Predictions," 25 pp., Aug 1976 (Presented at the Military Operations Research Society Meeting, Fall 1976) AD A030 458

PP 159
McConnell, James M., "The Gorshkov Articles, The New Gorshkov Book and Their Relation to Policy," 93 pp., Jul 1976 (To be printed in *Soviet Naval Influence: Domestic and Foreign Dimensions*, ed. by M. McGwire and J. McDonnell; New York: Praeger) AD A029 227

PP 160
Wilson, Desmond P., Jr., "The U.S. Sixth Fleet and the Conventional Defense of Europe," 50 pp., Sep 1976 (Submitted for publication in Adelphi Papers, I.I.S.S., London) AD A030 457

PP 161
Melich, Michael E. and Peet, Vice Adm. Ray (USN, Retired), "Fleet Commanders: Afloat or Ashore?" 9 pp., Aug 1976 (Reprinted from *U.S. Naval Institute Proceedings*, Jun 1976) AD A030 456

PP 162
Friedheim, Robert L., "Parliamentary Diplomacy," 106 pp. Sep 1976 AD A033 306

PP 163
Lockman, Robert F., "A Model for Predicting Recruit Losses," 9 pp., Sep 1976 (Presented at the 84th annual convention of the American Psychological Association, Washington, D.C., 4 Sep 1976) AD A030 459

PP 164
Mahoney, Robert B., Jr., "An Assessment of Public and Elite Perceptions in France, The United Kingdom, and the Federal Republic of Germany, 31 pp., Feb 1977 (Presented at Conference "Perception of the U.S. – Soviet Balance and the Political Uses of Military Power" sponsored by Director, Advanced Research Projects Agency, April 1976) AD 036 599

PP 165
Jondrow, James M. "Effects of Trade Restrictions on Imports of Steel," 67 pp., November 1976, (Delivered at ILAB Conference in Dec 1976)

PP 166
Feldman, Paul, "Impediments to the Implementation of Desirable Changes in the Regulation of Urban Public Transportation," 12 pp., Oct 1976, AD A033 322

PP 166 – Revised
Feldman, Paul, "Why It's Difficult to Change Regulation," Oct 1976

PP 167
Kleinman, Samuel, "ROTC Service Commitments: a Comment," 4 pp., Nov 1976, (To be published in Public Choice, Vol. XXIV, Fall 1976) AD A033 305

PP 168
Lockman, Robert F., "Revalidation of CNA Support Personnel Selection Measures," 36 pp., Nov 1976

PP 169
Jacobson, Louis S., "Earnings Losses of Workers Displaced from Manufacturing Industries," 38 pp., Nov 1976, (Delivered at ILAB Conference in Dec 1976)

PP 170
Brechling, Frank P., "A Time Series Analysis of Labor Turnover," Nov 1976. (Delivered at ILAB Conference in Dec 1976)

PP 171
Ralston, James M., "A Diffusion Model for GaP Red LED Degradation," 10 pp., Nov 1976, (Published in Journal of Applied Pysics, Vol. 47, pp. 4518-4527, Oct 1976)

PP 172
Classen, Kathleen P., "Unemployment Insurance and the Length of Unemployment," Dec 1976, (Presented at the University of Rochester Labor Workshop on 16 Nov 1976)

PP 173
Kleinman, Samuel D., "A Note on Racial Differences in the Added-Worker/Discouraged-Worker Controversy," 2 pp., Dec 1976, (Published in the American Economist, Vol. XX, No. 1, Spring 1976)

CNA Professional Papers -- 1973 to Present (Continued)

PP 174
Mahoney, Robert B., Jr., "A Comparison of the Brookings and International Incidents Projects," 12 pp. Feb 1977 AD 037 206

PP 175
Levine, Daniel; Stoloff, Peter and Spruill, Nancy, "Public Drug Treatment and Addict Crime," June 1976, (Published in Journal of Legal Studies, Vol. 5, No. 2)

PP 176
Felix, Wendi, "Correlates of Retention and Promotion for USNA Graduates," 38 pp., Mar 1977

PP 177
Lockman, Robert F. and Warner, John T., "Predicting Attrition: A Test of Alternative Approaches," 33 pp. Mar 1977. (Presented at the OSD/ONR Conference on Enlisted Attrition Xerox International Training Center, Leesburg, Virginia, 4-7 April 1977)

PP 178
Kleinman, Samuel D., "An Evaluation of Navy Unrestricted Line Officer Accession Programs," 23 pp. April 1977, (To be presented at the NATO Conference on Manpower Planning and Organization Design, Stresa, Italy, 20 June 1977)

PP 179
Stoloff, Peter H. and Balut, Stephen J., "Vacate: A Model for Personnel Inventory Planning Under Changing Management Policy," 14 pp. April 1977, (To be presented at the NATO Conference on Manpower Planning and Organization Design, Stresa, Italy, 20 June 1977)

PP 180
Horowitz, Stanley A. and Sherman, Allan, "The Characteristics of Naval Personnel and Personnel Performance," 16 pp. April 1977. (To be presented at the NATO Conference on Manpower Planning and Organization Design, Stresa, Italy, 20 June 1977)

PP 181
Balut, Stephen J. and Stoloff, Peter, "An Inventory Planning Model for Navy Enlisted Personnel," 35 pp., May 1977. (Prepared for presentation at the Joint National Meeting of the Operations Research Society of America and The Institute for Management Science 9 May 1977, San Francisco, California)

PP 182
Murray, Russell, 2nd, "The Quest for the Perfect Study or My First 1138 Days at CNA," 57 pp., April 1977

PP 183
Kassing, David, "Changes in Soviet Naval Forces," 33 pp., November, 1976, (To be published as a chapter in a book published by The National Strategic Information Center)

PP 184
Lockman, Robert F., "An Overview of the OSD/ONR Conference on First Term Enlisted Attrition," 22 pp., June 1977, (Presented to the 39th MORS Working Group on Manpower and Personnel Planning, Annapolis, Md., 28-30 June 1977)

PP 185
Kassing, David, "New Technology and Naval Forces in the South Atlantic," 22 pp. (This paper was the basis for a presentation made at the Institute for Foreign Policy Analyses, Cambridge, Mass., 28 April 1977.)

PP 186
Mizrahi, Maurice M., "Phase Space Integrals, Without Limiting Procedure," 31 pp., May 1977, (Submitted for publication in Journal of Mathematical Physics)

PP 187
Coile, Russell C., "Nomography for Operations Research," 35 pp., April 1977, (Presented at the Joint National Meeting of the Operations Research Society of America and The Institute for Management Services, San Francisco, California, 9 May 1977)

PP 188
Durch, William J., "Information Processing and Outcome Forecasting for Multilateral Negotiations: Testing One Approach," 53 pp., May 1977 (Prepared for presentation to the 18th Annual Convention of the International Studies Association, Chase-Park Plaza Hotel, St. Louis, Missouri, March 16-20, 1977)

PP 189
Coile, Russell C., "Error Detection in Computerized Information Retrieval Data Bases," July, 1977, 13 pp., To be presented at the Sixth Cranfield International Conference on Mechanized Information Storage and Retrieval Systems, Cranfield Institute of Technology, Cranfield, Bedford, England, 26-29 July 1977

PP 190
Mahoney, Robert B., Jr., "European Perceptions and East-West Competition," 96 pp., July 1977 (Prepared for presentation at the annual meeting of the International Studies Association, St. Louis, Mo., March, 1977)