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# Assessing the Dispute in the South China Sea: A Model of China's Security Decision Making

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Chinese foreign policy is represented as a function of internal, domestic political considerations. Through the analysis of Chinese policy, we illustrate a method for predicting the outcome of policy decision making inside China. The substantive issue is China's expected approach toward territorial disputes in the South China Sea, especially surrounding the Spratly Islands. We address the extent to which China can be expected to reallocate resources from economic reform to foreign policy undertakings in that area and how likely China is to utilize force to impose its will on weaker neighbors.

The approach represents a marked departure from the predominant neorealist paradigm in international politics. We assume that decision makers seek an optimal compromise between enhancing their security and pursuing their specific policy or ideological goals. Using this perspective, we conclude that, despite a dramatic increase in military expenditures and a significant strengthening of China's naval force in the South China Sea, China is unlikely to engage in any significant uses of force to pursue its agenda in the South China Sea.

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Two objectives motivate the analysis here. We suggest a model for examining Chinese foreign policy decision making and we apply that model to the Spratly Islands dispute. The model is intended to provide tools for predicting reliably the outcome of decision making in China or in any other political setting. The substantive issue provides a laboratory in which to test the model. We provide detailed predictions about strategies and a policy resolution that will shape

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China's struggle to resolve the tensions between securing their territorial interests in the Spratly Islands and the desire to promote economic growth. These predictions are expected to remain viable so long as no major exogenous shock occurs that fundamentally alters the structure of the data we use to analyze the problem.

The dispute over the Spratly Islands in the South China Sea is particularly interesting because it captures the possible tension between the domestic, economic objectives of the People's Republic of China and their external, territorial claims and ambitions. Specifically we address the extent to which China can be expected to transfer resources away from economic reform and toward the pursuit of foreign policy objectives in the South China Sea. We want to know how likely China is to utilize force to impose its will on its weaker Asian neighbors.

The approach we take represents a marked departure from the predominant neorealist paradigm in international politics (Waltz, 1979). We do not assume that the nation is a holistic unitary actor seeking to maximize security and unwilling to trade any amount of security for benefits on some other dimension, such as might be represented by *policy* preferences. Rather we assume that nations consist of competing internal (and external) interests vying to shape policy outcomes and making implicit compromises between policy goals and security enhancement through multiple stages of gamelike coalition formation. Like neorealist states, our actors are rational, but unlike neorealist states, they may seek to maximize on a dimension other than security. Indeed, our decision makers seek an optimal compromise between enhancing their security and pursuing their specific policy or ideological goals. In that sense, the model suggested here views foreign policy as the foundation of international politics and not as a separate area of inquiry.

We begin by summarizing the substantive circumstances that motivate our interest in evaluating Chinese policy in the South China Sea. Then we explain the model we use to predict and explain Chinese policy making. Following that discussion, we specify the relevant data and apply the model discussed here to China's policy behavior.

### Substantive Background

China's (PRC) influence in Asia and, indeed, globally, is growing. The disintegration of the Soviet Union and the success of China's economic reforms have contributed to China's power. With the wealth generated by economic liberalization, China has embarked on a program to modernize its military. The PRC is generating significant revenue from arms sales to the Third World and is using some of this revenue to acquire advanced weapons and technologies from other countries, most notably from the independent republics of the former Soviet Union, thereby enhancing its own military capabilities (*World Journal*, June 12, 1992).

During this period of economic expansion, the Chinese leadership seems to be facing a growing dilemma. On the one hand, Chinese leaders have repeatedly announced that the continuation of the PRC's economic reform program is their top priority. This suggests a pacific foreign policy in that economic reforms and growth are not well-served by politico-military instability in the region.<sup>1</sup> In this

<sup>1</sup>Li Peng was quoted as saying that China needs a peaceful international environment to embark on its vigorous economic reform program and that it is not the intention of China to be a hegemonic power in Southeast Asia (*World Journal*, 8/18/92:8). Qian Qichen, China's foreign minister, stated that all territorial disputes with neighboring countries should be settled in an amicable and peaceful manner (*World Journal*, 1/19/92:4).

sense, China currently has an interest in avoiding instability caused by territorial disputes in East Asia. On the other hand, some in East Asia are concerned that China's improved power may encourage its leaders to seek the resolution of several territorial disputes with its neighbors through more aggressive behavior. Such a perspective is certainly consistent with the observed buildup of Chinese military capabilities and with recent statements by the PRC's leaders. For example, China recently pledged to use its naval forces to back up an oil exploration project contracted to an American company. In this instance, the exploration is situated in the Spratly Islands where sovereignty is claimed by Vietnam, Malaysia, Indonesia, the Philippines, and the Republic of China (ROC) in Taiwan as well as by the PRC (Lo, 1989; *World Journal*, June 18, 1992).

Located in the South China Sea, these forty or so small islands were historically claimed by China as part of its territory, but were not inhabited until quite recently. They are just specks of atolls which were relatively insignificant to countries in the area until about the 1950s. However, three factors changed the previously disinterested behavior of countries bordering the South China Sea. These factors include: (1) the islands' strategic value, which was demonstrated by the Japanese during World War II; (2) the vast wealth of oil in the surrounding territorial waters; and (3) consideration of the Convention on the Law of the Sea (Lo, 1989).<sup>2</sup>

Since the 1960s, the Spratly Islands have become one of the more dangerous flashpoints for Southeast Asian security. The Philippines, Vietnam, China, Taiwan, and Malaysia have all become involved in this territorial dispute. There have been numerous small clashes and at least two recorded major clashes on these islands over the past twenty years. The first, in 1974, resulted in the expulsion of South Vietnam from the islands. The second conflict came in 1988. This saw a small naval battle between Chinese forces and Vietnamese forces that left seventy-four dead and three Vietnamese naval vessels sunk. Disputes over the islands also contributed to China's war against Vietnam in 1979 (Chen, 1987). Today the islands remain hotly contested. Among the forty units making up the group, six are occupied by China, twenty-one by Vietnam, nine by the Philippines, three by Malaysia, and one by Taiwan (*Central Daily News*, April 7, 1993).

There have been two conferences in Indonesia within the past few years to attempt to resolve the competing claims to the Spratly Islands. On both occasions China reiterated its desire to see a peaceful resolution of the problem and welcomed peaceful, cooperative development of the area. Yet at the same time China has expanded its claims to the islands. After occupying six islands between 1988 and 1992, China formally announced that it claims sovereignty over all the Spratly Islands. This announcement, made in March 1992, has been followed by a somewhat proactive Chinese policy in the area. For instance, China has sold oil exploration rights in the South China Sea to an American company—Crestone Energy Corporation—thereby implying that China has property rights over the area. It has been reported that a Chinese high official mentioned that if necessary China will use its "whole naval force" to protect the company's oil exploration activities in the South China Sea (*New York Times*, June 17, 1992; *World Journal*, June 18, 1992). More recently there have been unconfirmed reports that China dispatched three submarines to the area to back up its interests (*Central Daily News*, April 7, 1993).

China's declared willingness to use force in the South China Sea contradicts the PRC's policy aimed at promoting a peaceful international environment as a

<sup>2</sup>This convention has defined the maritime rights of coastal and island states. By claiming title to the islands, the claimant will redefine its maritime and property rights to resources in surrounding waters.

prerequisite to accomplish its economic goals. China's true intentions seem difficult to discern. After all, the prospect of warfare over the Spratly Islands must be daunting to China's leaders, but so must the prospect of a diminution in China's territorial integrity, assuming that China's claim to property rights in the area is sincere.

China's ability to carry out a successful naval war against several prospective opponents in the South China Sea is far from clear. While China can probably overwhelm its neighbors in a land war, the PRC does not have an obvious advantage in a war fought far from its border and especially a war fought far out to sea. And the instability that would be created by such a conflict—regardless of who might initiate it—would certainly jeopardize China's economic modernization efforts. Because a war has great potential costs associated with it, there is good reason to believe that China's declaration in favor of an amicable resolution of the Spratly Islands dispute is sincere. But, because surrendering its claims might be taken as a sign of weakness, China must also worry about how the Taiwanese, the Tibetans, and others would interpret the PRC's willingness to cede territory it had previously claimed as its own. This concern lends credence to China's declaration that it will defend its claim to the Spratly Islands with force if necessary.

The contradiction between China's apparent economic interest in stability and China's declared intent to use naval force if necessary to secure its claims over the Spratly Islands creates a troubling ambiguity in China's foreign policy which calls out for an evaluation. Does China's declaration mean that the PRC is willing to use force to discourage would-be challengers to its alleged property rights in the South China Sea? Is China willing to shift some domestic resources away from its economic reform program to support military engagements? These are questions we hope to answer.

### **Previous Assessments of China's Prospects of Using Force**

Over the past several years there have been a number of significant investigations of issues germane to our focus (George, 1967; Gurtov and Hwang, 1980; Segal, 1985; Stolper, 1985; Chen, 1987; Lo, 1989). Unfortunately, the assessment by Bobrow, Chan, and Kringen (1979) regarding studies of Chinese security policy making is still valid today. After a careful discussion of the difficulties and limitations of the five main approaches used to investigate Chinese foreign policy, they concluded in 1979, "The study of Chinese foreign relations largely lacks systematic analyses that map policy situations, identify behavior patterns, or estimate the parameters of international interaction" (Bobrow et al., 1979:27).<sup>3</sup> Up to this point, scholars have achieved only limited success in

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<sup>3</sup>The five approaches used in the field are (1) the teleological approach, which posits Chinese decision making as a process of careful calculation of alternatives to achieve clear and immutable goals; (2) reductive analysis, which holds that Chinese tradition makes itself felt through the personalities of individual Chinese; (3) juxtapositional linkages, which rely on the post hoc reconstruction of particular episodes in Chinese foreign relations history by juxtaposing current events; (4) environmental determinism, which uses biographical information to identify possible conflicts among the Chinese leadership and explains policy makings as results of these conflicts; and (5) kremlinology, which relies heavily on the expertise of the individual analyst and the intensive scrutiny of particular documents to figure out the scramble for power among the "interest groups."

Alternatively, Bobrow, Chan, and Kringen propose a "systematic" approach to the study of China's security policy making. They call it systematic because it considers not only particular cases and generalized patterns, but also the logic that determines the calculation of probabilities and utilities. Because this approach points out the logic that a rational decision maker should follow, its theoretical power is greatly enhanced. Through qualitative content analysis, historical case studies, and quasi-experimental exercises, they have made considerable progress in understanding the Chinese decision-making process.



explaining and especially in predicting China's security policy making as it relates to either the domestic population or the rest of the international community.

Gurtov and Hwang (1980) and Stolper (1985) emphasize the importance of domestic considerations in China's security decision making. They claim that China is adamant in its opposition to any attempt to infringe upon its territorial integrity, maintaining that China is especially likely to resort to arms to solve disputes that threaten territorial integrity. Indeed, because of China's experiences with European imperial expansion in the late nineteenth/early twentieth century and more recent experiences with separatist movements in Tibet and Taiwan, territorial integrity is a very sensitive issue to the Chinese general population and to the leadership (Stolper, 1985; *The Economist*, vol. 329, no. 7836, 1993). Afraid of sending out wrong signals to secessionists and of being accused of being unpatriotic, China's leaders may be prepared to sacrifice economic interests to promote territorial integrity so that they will not be challenged by their domestic political opponents.<sup>4</sup> Robinson (1970) echoes a related theme by claiming that China's international policy is mostly the externalization of its domestic political values.

Yet, in some cases, including the Tiao-yu T'ai dispute (Senkaku Islands) against Japan, the dispute over the future of Hong Kong with the United Kingdom, and disputes with the Philippines over the Spratly Islands, the fact is that China did not initiate violence. The Senkaku Islands dispute did not prompt a conflictual Chinese response, and in the case of Hong Kong, China waited for more than forty years to retake Hong Kong through peaceful negotiations. What is more, in disputes with the Philippines in particular, China has overlooked the occupation of several islands of the Spratly group despite that country's relative weakness compared to China (Lo, 1989).

Steven Chan contends in Hsiung (1985) that China's foreign policy cannot be understood in isolation. Instead, he maintains that "any serious attempts at reconceptualizing any bilateral relations must deal with the analytic apparatuses that are used to investigate the motivations and behavior of both governments" (Hsiung, 1985:152). An analysis of China's decision process alone is only part of the story. Taking into account just such dyadic relations, Huang, Kim, and Wu (1992) derived theoretical propositions concerning China's and Taiwan's conflict and cooperation decision making by using Bueno de Mesquita's expected utility theory (Bueno de Mesquita, Newman, and Rabushka, 1985; Bueno de Mesquita and Stokman, 1994). The theory approximates decision maker calculations of probabilities and utilities with an explicit, formally derived argument. The propositions are then tested systematically and demonstrated to be useful. Huang et al. point out that domestic considerations, alliance politics, extended deterrence, and interactions between sides are important factors that contribute to choices between conflict and cooperation.

A related view, suggested by Chen (1987), focuses on a combination of external and internal considerations to evaluate China's policy. Chen bases his assessment on his investigation of China's war with Vietnam in 1979. He indicates that it is the combination of such external factors as the involvement of the two superpowers and the psychology and personality of Deng Xiaoping

<sup>4</sup>Gurtov and Hwang (1980) provided six interesting propositions. They argue that (1) the chief purpose of foreign policy in China is to protect and promote the radical socialist revolution at home; (2) Chinese leaders believe that a quiescent (nonthreatening) international environment is the optimum condition for radical-socialist development; (3) economic performance is considered by Chinese leaders to be the key to national security and international legitimacy; (4) Chinese sensitivity to external threat is highest at times of domestic political weakness or conflict; (5) foreign policy becomes a domestic political issue in China by addressing economic or political choices that are under debate; and (6) China's domestic stability promotes conditions that are favorable to foreign policy initiatives (Gurtov and Hwang, 1980:249).

(especially his pragmatism, confidence, and daring) and such internal factors as China's interests, values, and war fighting capability and Deng's leadership that shaped China's policy in the 1979 war with Vietnam. In other words, China's security policy is determined by the relative power among international and domestic groups, each with different positions, saliency for the issues, and calculations about coalition formation.<sup>5</sup> This is broadly consistent with the recent literature on two-level games that sees foreign policy as partially endogenous to domestic political considerations (Bueno de Mesquita, Newman, and Rabushka, 1985; Bueno de Mesquita and Lalman, 1992; Putnam, 1993; Bueno de Mesquita and Organski, forthcoming).

Although we believe Chen and Huang et al. are on the right track, they fail to make explicit the bargaining process in domestic politics and the logic behind interactions in conflict decision making among relevant parties. Therefore, in this investigation, we plan to use a dynamic interest group bargaining model developed by Bueno de Mesquita (Bueno de Mesquita and Stokman, 1994) to address the expected result of domestic political bargaining inside China on the Spratly Islands issue.

Bueno de Mesquita's model is chosen because it has proven to be useful in analyzing and anticipating the results of policy debates among competing interests in other settings (Bueno de Mesquita, 1981, 1990; Bueno de Mesquita and Beck, 1985; Bueno de Mesquita, Newman, and Rabushka, 1985; Bueno de Mesquita and Stokman, 1994; Salt Lake City *Tribune*, March 1, 1989; Kim, 1991, 1992; Petersen, 1983; Wu, 1990). According to the United States government the model has made accurate and detailed policy predictions in 90 percent of the situations in which it has been utilized (Feder, 1987; Salt Lake City *Tribune*, March 1, 1989; Ray, 1992).<sup>6</sup> By using this model, we hope to address the two factors that possibly account for the limitation of previous studies of Chinese security policy: the lack of a general theoretical framework and the paucity of systematic investigations. In turn, this study, which makes predictions about events and policies whose actualization has not yet occurred, serves as an additional test of the usefulness of the theoretical model.

### The Method and Model

We describe briefly a model, more fully discussed elsewhere (Bueno de Mesquita, Newman, and Rabushka, 1985; Bueno de Mesquita and Stokman, 1994), that focuses on the application of Black's (1958) median voter theorem and a theorem about the monotonicity between certain expectations and the escalation of po-

<sup>5</sup>For example, with information provided by the United States, Deng calculated the possible Soviet response to the Vietnam war and was prepared for it. Deng also had realized that the war would bring China neither a great victory nor a disaster before he initiated it. He argued that China might achieve about 70 percent of its war objectives. The 30 percent of failed objectives would serve as a stimulus for economic reform because the PLA would then realize the importance of military modernization (Chen, 1987:87–88).

<sup>6</sup>James Ray (1992) notes of Bueno de Mesquita's model that, "It has been used with considerable success to forecast political decisions and political interactions in more than 60 countries with respect to more than 2,000 political issues. Accurate forecasts have focused, for example, on the rise to power of Yuri Andropov as a successor to Leonid Brezhnev in the Soviet Union, the rise to power of Hashemi Rafsanjani in Iran, the decision by the Chinese government to crack down on pro-democracy advocates in Tiananmen Square in China, and the defeat of Daniel Ortega and the Sandinista government by the coalition led by Violeta Chamorro in the 1990 election in Nicaragua" (1992:160–161).

Of course, there have been criticisms of Bueno de Mesquita's expected utility theory (Simowitz and Price, 1990; Wagner, 1984; Nicholson, 1987; Majeski and Sylvan, 1984). However, even critics of the theory have written that, "In general, though, the most ubiquitous defense of his theory is that despite its conceptual problems, it still solves more empirical problems than any known theory in the field" (Simowitz and Price, 1990:449).

litical disputes (Banks, 1990). The conjunction of these theorems along with concepts from bargaining theory foster the development of a quasi-dynamic political model that includes detailed expectations about the agreements or compromises that various “players” are willing to make over time and the implications of those compromises for the ultimate resolution of the issues in question.

Two constraints are assumed to facilitate prediction and explanation: that issues are unidimensional, so that preferences can be represented on a line segment, and that preferences (and associated utilities) for potential outcomes diminish steadily the farther in Euclidean distance a possible settlement is from one’s preferred outcome. These two constraints are requirements of the median voter theorem. Black’s theorem demonstrates that the outcome desired by the median voter is the winning position under the constraints just assumed provided a simple majority is required for victory. Of course, we do not assume that all interesting political problems involve voting. Rather, we assume that power is the nonvoting analog of votes in most political interactions.

The monotonicity theorem provides a basis for predicting when policy debates are expected to produce negotiated settlements or are expected to lead to an escalation of friction between competing interests. Banks’s monotonicity theorem highlights an important feature of all politics. It tells us that the more one expects to gain from challenging a rival perspective, the more likely one is to undertake the challenge. This simple statement turns out to have interesting and sometimes surprising implications for political intercourse.

Let  $N = \{1, 2, 3, \dots, n\}$  be the set of actors or stakeholders trying to influence a multilateral decision. An actor might be a government representative, an official from a faction within a political party or a bureaucracy, a leader of some interest group, an influential private citizen, and so forth.

Let  $M = \{a, b, c, \dots, m\}$  be the set of issues in a multilateral negotiation and let  $R_a$  be the line segment, bounded for convenience between 0 and 100, that describes the unidimensional policy continuum for any individual issue a selected from among the larger set of issues  $M$ . Let each actor  $i$ ,  $i \in N$  have its own *preferred* resolution of issue a, with that preferred resolution denoted as  $x_i^*$ , such that on the issue continuum  $R_a$ ,  $0 \leq x_{ia}^* \leq 100$ .<sup>7</sup>

For any feasible proposed outcome on issue a, say,  $k$ ’s proposal,  $x_k$ ,  $i$ ’s utility for  $x_k$ ,  $u^i x_k$ , is a decreasing function of the distance between the proposal and  $i$ ’s preferred resolution, so that  $u^i x_k = f|x_k - x_i^*|$ . Of the infinitely many possible proposals to resolve some issue a, how are we to predict which will be chosen? To answer this question, let us first learn a little more about each actor  $i$ . In this analysis, each decision maker is endowed with three characteristics. Each player attaches some *utility* to each possible outcome on issue a, as already noted. Each participant in the bargaining process is also endowed with the *power* to exert some influence on decisions. Let  $c_{ia}$  be the capabilities (or power) actor  $i$  could bring to bear on issue a, such that the sum of the capabilities of the participants in a multilateral decision-making setting is 1.<sup>8</sup>  $c_i$  is, then, actor  $i$ ’s share of the total *potential* influence that could be brought to bear in the negotiations over

<sup>7</sup> $x_{ia}^*$  is the outcome actor  $i$  has revealed to be preferred on issue a. It may or may not be  $i$ ’s *true* ideal point. We generally do not know for sure what another actor’s true ideal point is as there are strategic incentives for an actor to misrepresent his or her ideal point. Because the model as applied here assesses policy decisions on one issue at a time, we drop the issue-denoting subscript (a, b, etc.) from the notation so that henceforth  $x_i^*$  is the preferred position of actor  $i$  on the issue being evaluated at the moment.

<sup>8</sup>Again, we drop the “a” subscript from the notation throughout, but the reader is alerted that the model does not assume an actor’s capabilities or potential power is the same on all issues.



some issue  $a$ . Each participant has its own agenda of priorities or *salience* that it attaches to the issues that must be confronted. Thus,  $i$  may attach considerable importance to issue  $a$  and considerably less importance to issue  $b$ . Denote the salience of issue  $a$  for actor  $i$  as  $s_{ia}$ , with  $0 \leq s_{ia} \leq 1$ . Each actor is described by the values of  $u^i x_k$  for all  $i, k \in N$ ,  $c_i$ , and  $s_i$  on each issue. A group, player, or actor is any aggregation of individuals with identical values on all three of these variables.

When alternative courses of action are pitted against each other, the array of forces on either side often determines victory. Of course, this array depends on more than the relative power of the competing interests. It depends also on the willingness to spend influence on the issue in question [ $s_i$ ] and the intensity with which each actor prefers one proposed settlement, say,  $j$ 's proposal ( $u^i x_j$ ), to another proposal, say,  $k$ 's ( $u^i x_k$ ). Each group has a total number of *potential* "votes." The "votes" presumed to be cast by actor  $i$  in a comparison of alternatives  $x_j$  and  $x_k$  are said to equal  $v_{ia}^{jk}$

where:

$$(v_{ia}^{jk} | x_j, x_k) = (c_i) (s_i) (u^i x_j - u^i x_k) \quad (1)$$

Equation (1) states that the "vote" or power mobilized by actor  $i$  in a comparison of two alternatives ( $x_j$  and  $x_k$ ) is equal to the potential capabilities of  $i$  discounted by how important the issue is to  $i$  (i.e.,  $s_i$ ) and by how much  $i$  prefers one proposal to the other ( $u^i x_j - u^i x_k$ ). The "voting" scheme reflects, if you like, what takes place "inside the smoke-filled room" before any formal, visible decision-making process occurs. It assumes that any formal process echoes the agreements reached beforehand.

The prospect that a proposal will succeed is assumed to depend on how much support can be mustered in favor of the proposal as compared to the feasible alternatives. In the model this is calculated as the sum of "votes" across all actors in a comparison between  $x_j$  and  $x_k$ . This sum equals  $v^{jk}$  with

$$v^{jk} = \sum_{i=1}^n v_i^{jk} \quad (2)$$

If  $v^{jk}$  is greater than zero that implies that  $x_j$  defeats  $x_k$  because the tacit coalition in favor of  $j$ 's proposal is more motivated and powerful than the coalition supporting  $k$ 's proposal. If  $v^{jk}$  is less than zero,  $x_j$  is expected to be defeated by  $x_k$ , and if  $v^{jk}$  equals zero the competing interests are collectively indifferent between the two alternatives.

In any negotiation, there are likely to be many more than two proposed settlements. By pitting all alternatives against one another two at a time, the outcome preferred by the median voter (weighted by power, salience, and intensity of preference) is found. Barring perceptions or beliefs that lead decision makers to switch their position, the median voter position is the predicted outcome (Black, 1958). In practice, of course, perceptions or beliefs often lead decision makers to grant concessions or to give in to a rival's point of view, sometimes even needlessly. Such concessions or capitulations can change the location of the median voter. Consequently, it is crucial to provide an accounting of when such switches in position are expected to take place.

If an interest group is dissatisfied with the *expected* outcome of a negotiation, it can alter its own level of effort (i.e., change  $s_i$ ); shift its revealed position, selecting  $x_i$  such that  $u^i x_i^* \neq u^i x_i$ ; or influence those who are willing to make concessions to the focal group so that those other groups alter their level of

effort (i.e.,  $s_k$ ); or it can influence those who are willing to make concessions to the focal group so that those other groups alter their revealed position  $x_k$  so that  $u^k x_k^* \neq u^k x_k$ , leading to switches in positions. Although in the model we examine all possibilities, here we focus only on the latter one.

Decision makers interested in ascertaining what leverage they can exert could benefit from estimating the beliefs held by each other actor. To do so requires a focus on the three characteristics— $u^i x_j$  for all  $i, j \in N$ ,  $s_i$ ,  $c_i$ —used to estimate each player's expected utility from challenging or not challenging the policy proposal backed by each potential rival and for approximating the expected utility each actor  $i$  believes its rival expects to derive from challenging or not challenging the policy goals of actor  $i$ . In the model envisioned here, decision makers are assumed to calculate the expected consequences of challenging and of not challenging alternative proposals. The expected utility for  $i$  from not challenging rival  $j$ 's position is denoted as  $E^i u^i \Delta x_j \mid \bar{d}$ , with  $\bar{d}$  denoting the failure to challenge or make a proposal. This expected utility is estimated by projecting what the relevant decision maker believes is likely to happen in the absence of the exertion of pressure on a rival to persuade the opponent to alter its behavior. One of three contingencies may arise: actor  $i$  may anticipate that with some probability ( $Q^i$ ) rival  $j$  will not alter its current policies over the time period of concern to  $i$ , giving group  $i$  the ability to derive whatever utility it receives from the preservation of the status quo between itself and  $j$  ( $u^i \Delta x_j^\circ \mid \bar{d}$ );  $i$  may anticipate that  $j$ 's position on the issues will change, in which case there is some chance ( $T^i$ ) that, from  $i$ 's perspective, the policies of  $j$  are anticipated to get better (with  $u^i \Delta x_j^+ \mid \bar{d}$  being the associated utility) or to get worse ( $u^i \Delta x_j^- \mid \bar{d}$ ), so that  $u^i \Delta x_j^+ \mid \bar{d} > u^i \Delta x_j^\circ \mid \bar{d} > u^i \Delta x_j^- \mid \bar{d}$ .  $i$ 's expected utility if it leaves  $j$ 's proposal unchallenged is described as:

$$E^i u^i \Delta x_j \mid \bar{d} = Q^i u^i \Delta x_j^\circ \mid \bar{d} + (1 - Q^i) [T^i u^i \Delta x_j^+ \mid \bar{d} + (1 - T^i) u^i \Delta x_j^- \mid \bar{d}] \quad (3)$$

$i$  can challenge  $j$ 's position on issue  $a$  by proposing a change in  $j$ 's position. In doing so, actor  $i$  presumably takes into account the probability that  $j$  does not care enough about the issue to resist the proposed settlement by  $i$  ( $1 - s_j$ ).  $i$  also considers the possibility that  $j$  will resist  $i$ 's proposal ( $s_j$ ), in which case there is some likelihood that  $i$  will succeed in its efforts to enforce its wishes on  $j$  ( $P^i$ ) and some probability that it will fail ( $1 - P^i$ ). Should  $i$  succeed, then  $i$  will derive the utility associated with convincing  $j$  to switch from its current policy stance to that supported by  $i$ . This is denoted by  $u^i \Delta x_j^+ \mid d$ , which equals  $u^i(x_i - x_j)$ . Should  $i$  fail, then it confronts the prospect of having to abandon its objectives in favor of those pursued by  $j$ , denoted by  $u^i \Delta x_j^- \mid d = u^i(x_j - x_i)$ . The expected utility for challenging  $j$ 's proposed resolution of the multilateral dispute ( $E^i u^i \Delta x_j \mid d$ ) is:

$$E^i u^i \Delta x_j \mid d = s_j \{P^i [u^i \Delta x_j^+ \mid d] + (1 - P^i) [u^i \Delta x_j^- \mid d]\} + [1 - s_j] [u^i \Delta x_j^+ \mid d] \quad (4)$$

so that the overall expected utility of  $i$  with respect to  $j$ 's outlook on issue  $a$  is:

$$E^i u^i \Delta x_j = E^i u^i \Delta x_j \mid d - E^i u^i \Delta x_j \mid \bar{d} \quad (5)$$

If equation (5) is greater than zero, then  $i$  believes that challenging  $j$ 's position is superior to not challenging it and so  $i$  is assumed to make a proposal of its own. If equation (5) is less than zero, then not challenging is preferred and  $i$  is said to be deterred. If (5) equals zero, then  $i$  is indifferent between challenging and not challenging  $j$ 's proposed settlement. Each actor evaluates equation (5) vis-à-vis each other actor. In doing so, actors take the expected actions of third

parties into account. The estimates of  $P_i$  include calculations of how  $i$  expects all other parties to respond to a dispute over policy settlements between  $i$  and  $j$ . In particular,  $P_i$  places each other actor in  $i$ 's coalition,  $j$ 's coalition, or in a neutral position as indicated by each third party's preference for  $i$ 's policy proposal or  $j$ 's.  $j$  makes a comparable calculation (as does each  $k \in N$ ). Because equation (5) includes such subjective elements as utilities and subjective probabilities, it is possible to estimate a complete matrix of expected utilities that captures all possible confrontations, compromises, and capitulations among all the participants in the relevant political arena.

The various components of equation (5) must each be measured if the model proposed here has practical value. The measurement procedures for each term are explained in considerable detail elsewhere (Bueno de Mesquita, 1985; Bueno de Mesquita, Newman, and Rabushka, 1985; Bueno de Mesquita and Lalman, 1986; Bueno de Mesquita, 1990; Bueno de Mesquita and Stokman, 1994).

Equation (5) is estimated from four perspectives, with relevant superscripts on equation (5) indicating from whose perspective the calculation is being viewed:

- (1)  $i$ 's expected utility vis-à-vis each rival  $j$ 's proposal;
- (2)  $i$ 's perception of each  $j$ 's expected utility vis-à-vis  $i$ 's proposal;
- (3)  $j$ 's expected utility vis-à-vis each  $i$ 's proposal; and
- (4)  $j$ 's perception of each  $i$ 's expected utility vis-à-vis  $j$ 's proposal.

The expected utility values summarized in (1) and (2) and in (3) and (4) respectively describe each actor's perception of its relationship vis-à-vis each other actor. With Banks's monotonicity of escalation theorem in mind, these relationships can be described in continuous form. According to Banks's theorem, the probability with which an actor anticipates confronting a given rival increases with its expected utility for challenging the rival's proposal, so that the higher some actor  $i$ 's expected utility is with regard to persuading some other actor  $j$  to accept  $i$ 's position, the higher the likelihood that  $i$  will confront  $j$ .

The likelihood with which confrontation or concessions occur can be easily displayed in a polar coordinate space. For ease of presentation, we divide such a space into six sectors, with the boundary between each reflecting a fundamental turning point in the probability functions. Figure 1 displays such a coordinate space, along with relevant labels for each of the six sectors, reflecting the general likelihood of alternative outcomes in accordance with Banks's monotonicity theorem.

By examining the distribution of information in graphs like Figure 1, we attempt to approximate the private information available to each participant in a dispute or negotiation. From that information we estimate how each party will behave and what consequences are likely to ensue.

The perceptions of each actor as illustrated by Figure 1 imply actions. Those actions, in the form of the extraction or granting of concessions over support for this or that specific position, lead to a reevaluation of the situation by each decision maker. As stakeholders respond to revised proposals, with their responses supported by their beliefs and expectations, the prospects for a favorable or unfavorable settlement change for many participants. Beliefs and expectations provide the foundation for a quasi-dynamic assessment of the evolution of issue positions and for recalculations of the location of the median voter.

When actors are persuaded or coerced into accepting a proposal different from their initial (or current) position on an issue the decision process enters a new phase. Coalitions change and the support or risks associated with alternative proposals vary. New proposals are brought forward as revised beliefs and ex-

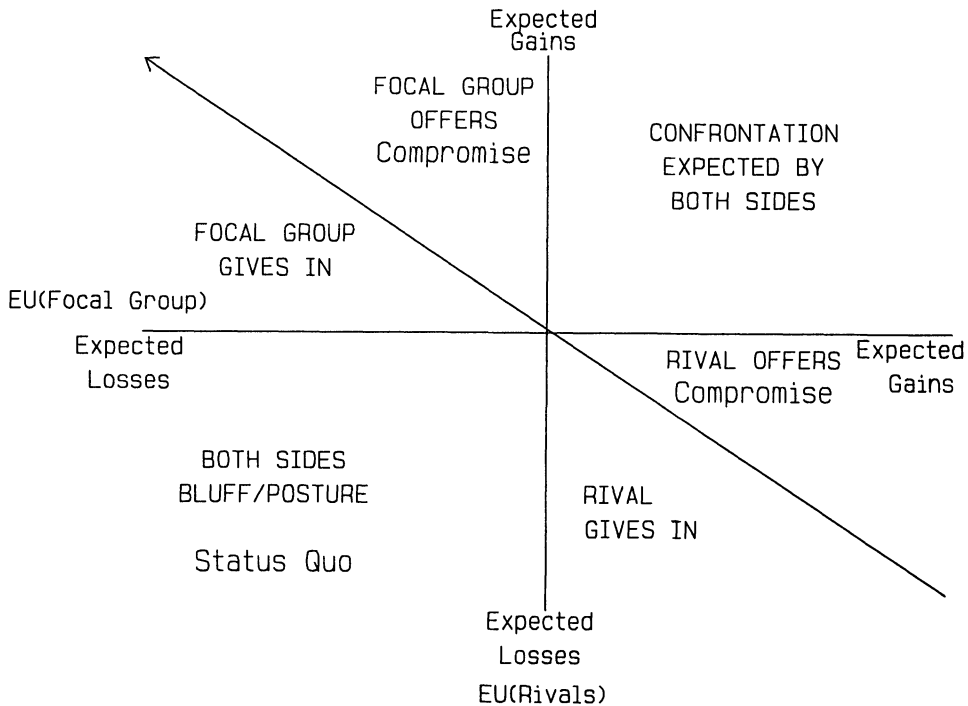


FIG. 1.

expectations open new possibilities or foreclose old ones. Each such sequence of revised stances on an issue is called an iteration. The model computes as many iterations as it takes for the policy issue to resolve itself by reaching a stable outcome; an outcome from which there is not a meaningful possibility of change given the estimated expectations of the actors.

The model portrays a process of decision making during each iteration. To gain an intuitive sense of what happens within the logic of the model during each iteration, think of the decision makers as being engaged in a game of cards. At the outset, each player is dealt a hand. The quality of the hand dealt to each player depends on the commonly known characteristics of each player. Stronger players (or those with strong backing from others) generally draw better cards than weaker players. Because of variations in salience, some players pay closer attention to their cards than do others and so form different perceptions of the situation. Based on the cards they hold and the known characteristics of other players, each decision maker forms perceptions about how good the hand is of each rival relative to the hand dealt the particular decision maker. With that information, each player decides on proposals or bids to make to the other decision makers.

If a player believes his or her hand is very weak compared to a specific rival, then no proposal is made to that actor. If  $i$  expects to lose to  $j$ , for instance, then  $i$  does not make a proposal to  $j$ . If, however,  $i$  thinks it holds a good hand relative to  $j$  then  $i$  makes a proposal in the form of a suggested change in position by  $j$  on the issue at hand.<sup>9</sup> If  $i$  thinks  $j$  stands to lose quite a lot, then  $i$

<sup>9</sup> $i$  makes a proposal if, in Figure 1, the conjunction of  $i$ 's expected utility and  $i$ 's estimate of  $j$ 's expected utility falls between zero degrees from the horizontal axis and 45 degrees, or falls between 270 degrees and 360 degrees

will propose that  $j$  accept  $i$ 's current position.<sup>10</sup> If  $i$  thinks it has a good enough hand to shift  $j$ 's position, but not so good that  $j$  will give in to what  $i$  wants, then  $i$  proposes a compromise somewhere between  $i$ 's position and  $j$ 's.<sup>11</sup>

After all the players have submitted their secret proposals to one another, each player now reviews the new cards—the proposals—that it holds. Of course, some proposals are better for the recipient than others. Indeed, some proposals turn out to be frivolous in that the proposer cannot enforce the proposal, something that the proposer might only learn at the end of the round of proposal making. Other proposals received by a decision maker are potentially enforceable, but fall by the wayside because a superior, enforceable proposal was made by a different player. Each player would like to choose the best offer made to it, and each proposer enforces its bids to the extent that it can. Those better able to enforce their wishes than others can make their proposals stick. Given equally enforceable proposals, players move the least that they can. Each actor selects from among the bids it made and the bids it receives. The bid that is chosen is the proposal that is the optimal choice for the player given the constraints under which it operates. These constraints include its own perceptions and the reality of which proposals turn out to be enforceable and which turn out to be beaten back by rivals or rejected outright as unenforceable by the recipient.

At the end of a round of proposal making, players learn new information about their opponents. If, for instance, a player finds that some proposals it thought of as enforceable are successfully rejected then it learns the proposal was unenforceable (i.e., the player has less support than it thought). By monitoring responses to its proposals a player learns how much leverage it has with other decision makers. If a proposal is accepted, then a player learns that it made the best offer among all the proposals made to the recipient of its accepted bid.

When the players finish sorting out their choices among proposals, each shifts to the position contained in the proposal it accepted (if any). The game ends when no player believes it has a remaining credible proposal or the value of remaining proposals is sufficiently small that the cost of continuing to bargain outweighs the value for each player of the expected improvement in the outcome. The median voter of the final stage of the game is the predicted policy outcome. For a fuller description of the sequential process in this game we suggest seeing Bueno de Mesquita and Stokman (1994).

### Estimating the Model's Results: Developing the Data

Political outcomes, whether they involve intra- or intergovernmental relations or negotiations between public and private organizations or even within a single organization, can be and have been predicted using the model delineated above. To do so, however, requires converting theoretical concepts into practical ap-

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from the horizontal axis. That is the domain within which  $i$  believes it has a comparative advantage over  $j$  and  $i$  expects more gains than losses from challenging  $j$ 's position.

<sup>10</sup>A proposed capitulation by  $j$  to  $i$ 's wishes is made if  $i$  locates the conjunction of the respective expected utilities in the wedge that falls between 270 degrees and 315 degrees below the horizontal axis in Figure 1 or in the wedge between zero degrees and 45 degrees. In the latter instance,  $i$  expects resistance from  $j$ , but  $i$  believes it can enforce its demand. In the former case,  $i$  expects no resistance from  $j$ .

<sup>11</sup>A compromise is proposed if  $i$  believes the conjunction of the relevant expected utilities falls between 315 degrees and 360 degrees from the horizontal axis in Figure 1.



plication. Although this can be an extremely difficult task, there is, fortunately, a body of knowledge that can be called upon to estimate the critical variables. By combining the perspective of this rational-actor model with the knowledge and expertise of area or issue *experts* it is possible to estimate the variables of interest and to solve the perceptual and “voting” components of the model discussed here.

The forecasting and perceptual models require the identification of the groups or actors interested in trying to influence a policy outcome on the issues in question. For each actor, data must then be estimated on three and only three variables: capabilities, preferred outcome, and salience. Sometimes, in institutionally structured settings, it is also important to take into account structural constraints that operate to help shape outcomes. With just this minimal information in hand, and *without any other information*, regarding, for instance, the history of the situation, the history of relations between particular actors within the situation, other sunk costs, or without even interviewing the actors involved to assess their own judgment about their beliefs and expectations, it is possible to predict what the likely outcome will be.

### Forecasting Chinese Foreign Policy: The Data

The data for our analyses were obtained from several sources during the period between early June and early August of 1992. The first data collection relies on the expertise of Dr. Cheng-chi Chang and his associates at the National Chang-Chi University. The issue for which we sought data is:

What level of resources does each group support reallocating from the economic reform program to military capabilities in order to respond to challenges from smaller countries and to secure China's interests in the South China Sea, assuming that any such challenges are expected to be on a small scale with no super-power involvement?

Dr. Cheng-chi Chang and his associates have investigated this issue in great detail.<sup>12</sup> Nevertheless, when Dr. Cheng-chi Chang was interviewed by Samuel S. G. Wu he was not asked to provide an answer to the above question. Rather, he was asked to identify the stakeholders or actors with an interest in shaping Chinese policy regarding the issue at hand. Dr. Cheng-chi Chang was also asked to use his expertise to estimate the relative capabilities or power, position, and salience that each actor attaches to the issue, thereby creating the first standardized data set.<sup>13</sup>

A second estimation of the same data was done as a reliability check. The second data set is based on research done by Wu and two of his assistants, Mr. Alexander Tan and Mr. Yu-guo Chen. The team searched through several recent publications and documents on political factions within the Chinese leadership and their associated interest groups (Lee, 1992a, 1992b; Ellis, 1987; *World*

<sup>12</sup>Dr. Chang is the Chair of the Graduate Program on Labor Relations, National Chang-Chi University. He is an expert on the impact of interest groups on China's policy making (especially on labor policy). He has conducted several field studies in southern China and is therefore particularly familiar with the interest groups in that area.

<sup>13</sup>It should be noted that the United States government has found that there is substantial consistency in model predictions even as the experts providing the data inputs vary. This is not too surprising given that experts are asked very basic information only (who are the interested parties, what do they want, what is their relative potential to influence the process, and how much do they care about the issues in question). Surely someone who does not know this information is not an expert on the issue.

*Journal*, 1991–1992).<sup>14</sup> Wu also went to China for one month of field research to foster development of the second data set.<sup>15</sup>

The few differences in estimations between the two data sets were then resolved through discussions between the two groups of experts. Therefore, the final data set represents the consensus of the two groups. Again, neither group was asked to provide an answer to the question we are studying, but rather was asked to provide the basic data needed by the model to evaluate the issue. The data are reported in Table 1. The scale of policy preferences for the data in Table 1 is interpreted as follows:

- 0 = All resources should be reallocated from economic reform to military purposes even though this will mean a delay in economic reform.
- 25 = Prepared to use army, navy, and air forces to protect territorial interests in the South China Sea.
- 47 = Prepared to use navy and air forces, but no ground troops.
- 70 = Prepared to use a naval blockade only to advance territorial interests in the South China Sea.
- 76 = The status quo, indicating that the challenge should only be dealt with through limited military operations.
- 81 = Enhanced military readiness, but no actual military operations in the area.
- 100 = No resources should be allocated to military conflict instead of economic reform so that there will be no military operations in the South China Sea.

TABLE 1. Data Assumptions

	Capabilities	Position	Salience
GENPOP3	40	81	30
DENG	100	76	75
GUANGDONG	30	70	70
PLA2	80	66	70
USOIL	3	62	80
PLA3	25	59	50
SWMILIND	5	56	85
GENPOP4	60	54	20
GENPOP2	10	47	80
CHEN YUN	35	43	75
PLA1	10	25	85
GENPOP1	3	17	90

<sup>14</sup>*World Journal* is the biggest and most prominent U.S.-based Chinese newspaper. It actually provides more accurate information than do the newspapers in mainland China since the latter are operated and censored by the state.

<sup>15</sup>Chinese security policy formation has been one of Wu’s research interests for some time. Both Mr. Tan and Mr. Chen are Ph.D. students. Mr. Tan worked on issues concerning Chinese economic reform at a noted economic research institution in Taiwan for several years before he came to the U.S. Mr. Chen was a lecturer at the Department of International Relations, Peking University, before he came to the U.S. Wu’s field study visit to China took place in October 1992.

Before turning to our analysis of China's anticipated policy affecting the allocation of resources for military purposes in the South China Sea, we should comment briefly on the data presented in Table 1. The identity of the groups is explained in the Appendix. It is evident that there is considerable variation in the power, position, and salience of the groups. One might legitimately wonder at how reliable the data are given that they are based on the personal judgments of a few specialists. Four points are worth noting in this regard.

First, the model's success rate of 90 percent in predicting policy choices among contending interests suggests that experts provide reliable data most of the time. Second, an assessment of the reliability of experts has found that the predictions made with the model are robust across experts even if the assumptions of the experts about how to identify relevant actors are divergent. Third, when predictions from the model differ from predictions made by the experts who provided the input data, the model proves to be significantly more precise and accurate than do the very experts whose inputs were used (Feder, 1987). Finally, sensitivity analysis can be—and has been—conducted to determine whether the results are robust or are altered by small changes in the data assumptions.

As part of our data evaluation procedure we have tested the robustness of our analytic results. The sensitivity testing centered on the most controversial aspect of our data set. Some China specialists, for instance, have suggested that the faction described as the South-West military-industrial complex in our data set may be stronger than our expert evaluators indicated. As this conjecture is plausible, we have tested the impact on our results that would arise if the South-West military-industrial complex actually has capabilities anywhere in the range of 5 units (as indicated in our data set) to 50 units on our scale. Fifty units, of course, represents a tenfold increase relative to our data set.

The sensitivity analysis demonstrates that our analytic results change meaningfully only if the capabilities of the South-West military-industrial complex are as large as 50. In other words, only when the judgment of a collective body of China experts turns out to be wrong by about ten times, which is very unlikely, are the results of our analysis altered significantly. Several similar sensitivity tests were conducted and all pointed to the conclusion that the results of the analysis are robust against plausible measurement errors.

### Forecasting China's Policy: An Illustration of the Method

As is evident from Table 1, there is a wide diversity of opinion on this issue. Less evident, perhaps, is the great difference between the concentration of potential political influence and the realized utilization of political influence on this question. Figure 2 highlights that difference.

Stakeholders with an interest in transferring substantial amounts of money away from the economic reform program and toward the military collectively possess substantial political influence. However, they are much less willing to use their influence on this issue than are those who are more disposed to maintain the status quo or even increase support for the economic reform program. Figure 3 displays the cumulative political power and utilized political power (i.e., capabilities discounted by salience) as a function of policy preference. The median "voter" line crosses the power or capabilities variable at position 66, indicating support for a somewhat more aggressive foreign policy, but the utilized power configuration does not achieve the status of the median "voter" until position 76, a posture that is equivalent to the maintenance of the status quo.

The expected utility analysis provides details concerning the resolution of the

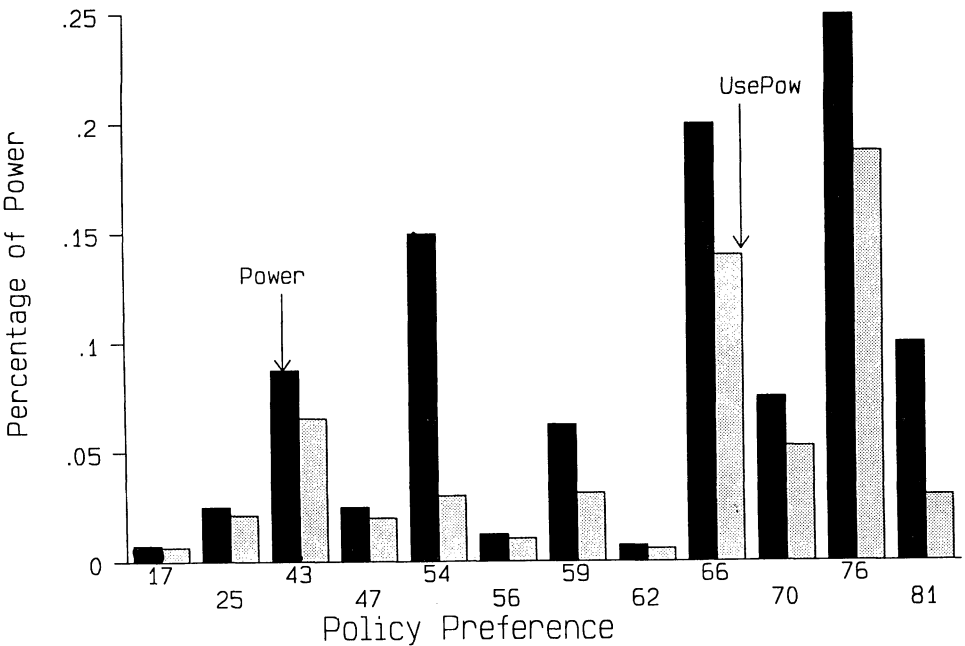


FIG. 2. Will the PRC Use Force?

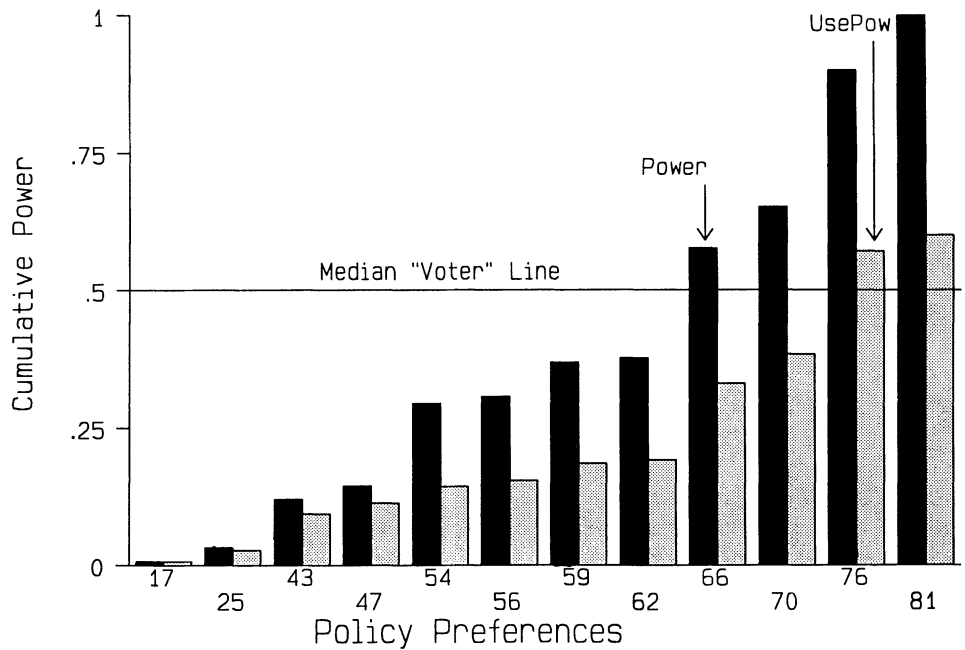


FIG. 3. Support for Resource Transfers

issue that cannot be gleaned from these two figures. We find, consistent with Figures 2 and 3, that China is expected to become somewhat more militarily active in the short term in promoting its claims to the Spratly Islands than has been true up until now. However, after considerable internal debate, China's policy will settle down to an equilibrium about equivalent to the current status quo. On a scale from zero to 100, with all-out war being equal to zero, and with the current status quo equal to 76, the expected utility forecast is that internal Chinese debate will first incline China toward a policy involving at least a naval blockade and perhaps air or naval harassment (position 66 on the scale). This more activist stance, however, will quickly give way to a more moderate position. We expect that the internal bargaining process will lead to a compromise between hard-liners and more moderate elements, resulting in support for a policy that moves from activist to an endorsement of some action like a naval blockade, but without additional military harassment or intervention (position 70 on the scale). That is, the intermediate expected utility assessment indicates a policy that is slightly more activist than the current status quo.<sup>16</sup>

We find, further, that even the intermediate, only slightly more activist profile will prove difficult for China to sustain. Gradually, a coalition policy will emerge to reassert the current status quo. Although that policy will not be without significant detractors, it will prove to be fairly stable.

It is of some interest to note how the competing interests are expected to evolve over time. With that in mind, Table 2 provides four snapshots based on predictions using the dynamic version of the expected utility model. In the first picture, each group hypothesized to be relevant to the issue—as defined in the Appendix—is located at what China experts have identified as their current position. The second snapshot indicates the shifts in positions, and the formation of coalitions, predicted by the initial phase of the dynamic expected utility model. The third and fourth snapshots show the equilibrium positions at which each group is expected to settle for the time being. Each snapshot, then, denotes a phase in the sequence of internal bargaining that will take China from its current

TABLE 2. The Prospects of Military Engagement over the Spratly Islands

<i>Group</i>	<i>T1</i>	<i>T2</i>	<i>T3</i>	<i>T4</i>
GENPOP3	81	70	69	72
DENG	76	75	73	73
GUANGDONG	70	71	73	73
PLA2	66	75	73	73
USOIL	62	70	71	73
PLA3	59	64	70	73
SWMILIND	56	66	67	67
GENPOP4	54	61	63	72
GENPOP2	47	43	66	66
CHEN YUN	43	49	52	56
PLA1	25	66	67	67
GENPOP1	17	62	62	69
FORECAST	66	70	73	73

<sup>16</sup>As noted earlier, there are recent reports that China has sent three submarines to join its naval fleet in the area. China has denied the action. Submarines, of course, are a major instrument for China if China hopes to instigate a successful naval blockade. If the report is correct, then, it demonstrates that the policy prediction we made in August 1992 when this paper was originally presented at the meetings of the American Political Science Association is consistent with subsequent developments.

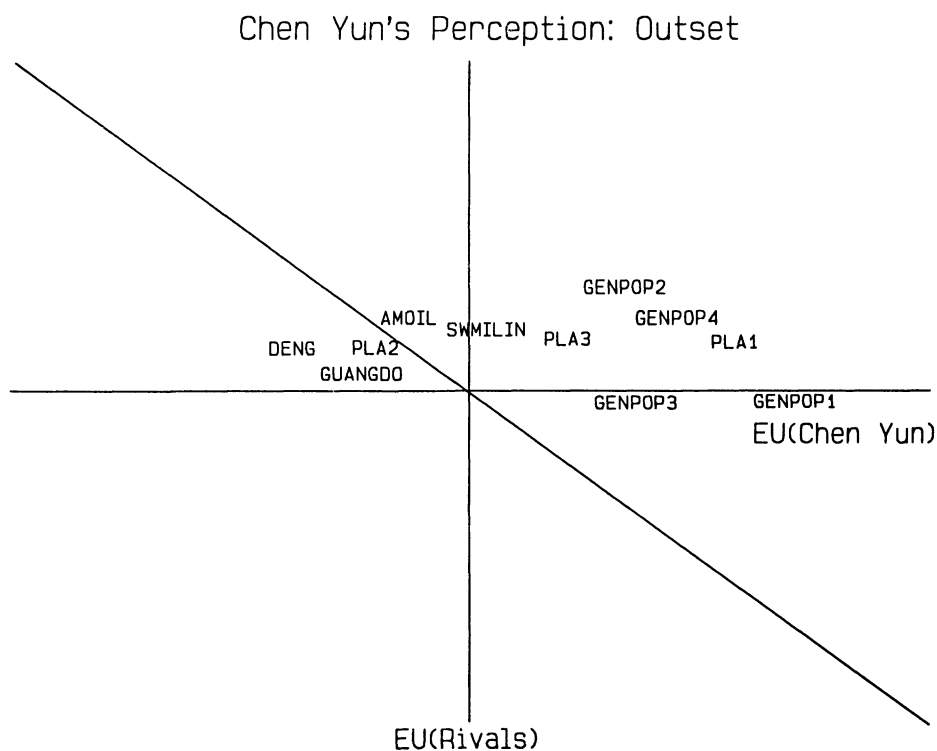


policy toward the Spratly Islands to a more aggressive posture and then back to the status quo ante.

The dynamics underlying the emergence of the predicted equilibrium highlight interesting features related to actor perceptions. Recall that the interpretation of the figures that depict these highlights is done in accordance with the sample guide provided in Figure 1.

Most notable among the perceptual highlights is the unrealized potential among Deng Xiaoping's supporters for promoting a still less aggressive policy than that which will be implemented. In particular, according to the logic of the expected utility assessment, it appears that Chen Yun believes that he can do no better than to give in to Deng if he is pressed to do so. Figure 4 clearly indicates that Chen Yun perceives himself to be in a politically weak position vis-à-vis Deng as well as other reform-oriented actors. While the conservative Chen Yun believes that he has real influence over those segments of the population that are extreme nationalists (GENPOP1) or that have already benefited substantially from current economic reform programs and are afraid to rock the political boat (GENPOP3), he otherwise sees himself as embattled. His situation, in actuality, is better with respect to Deng than he thinks and is more complex with regard to the general population than Chen Yun recognizes.

Figure 5 reveals how each group views its own situation vis-à-vis Chen Yun. Most intriguing from a policy perspective is the difference between Chen Yun's view of the expected interaction with Deng and Deng's view of the same anticipated interaction. Insofar as Deng's position is somewhat more moderate than the status quo and Chen Yun is a key center of power among the hard-liners, pressing him to accept Deng's policies would foster an even broader based



coalition of support for economic reform and military moderation. According to the model, however, Deng believes his relationship vis-à-vis Chen Yun is one that will lead to a stalemate in which it is best not to press for further concessions (Figure 5). *This misperception results in a foregone opportunity to consolidate greater support behind Deng's objectives.* As we saw in Figure 4, Chen Yun would give in and accept Deng's policy if he were pressed to do so. That Deng will not press means that he will forego the opportunity to further weaken the anti-economic reform hard-liners, thereby possibly jeopardizing the future viability of his programs once he has left the scene. While the model proposed here could be used to simulate the impact on this policy question that Deng's death (or Chen Yun's) would have, such an assessment is beyond the current scope and objectives of this investigation.

We also find that the Spratly Islands policy is fraught with internal conflict. At the outset of our assessment we find that 37 percent of the bilateral group relationships involve the prospect of very high tension. This is mitigated significantly by the first bargaining round, in which the compromise agreement at 70 leaves about 29 percent of the relationships in a confrontational mode. The press to withdraw even the small concessions to activists reflected in this intermediate forecast is expected to result in 45 percent of the internal bilateral relationships being tense and conflictual. Once the status quo is reestablished, however, tempers seem to calm down, with a return to approximately the current level of tension. In the final iteration of the model, 35 percent of bilateral relations are conflictual.

It appears that the big winners among Chinese elites are Deng Xiaoping and the leaders of Guangdong. They are at the core of the winning coalition, while

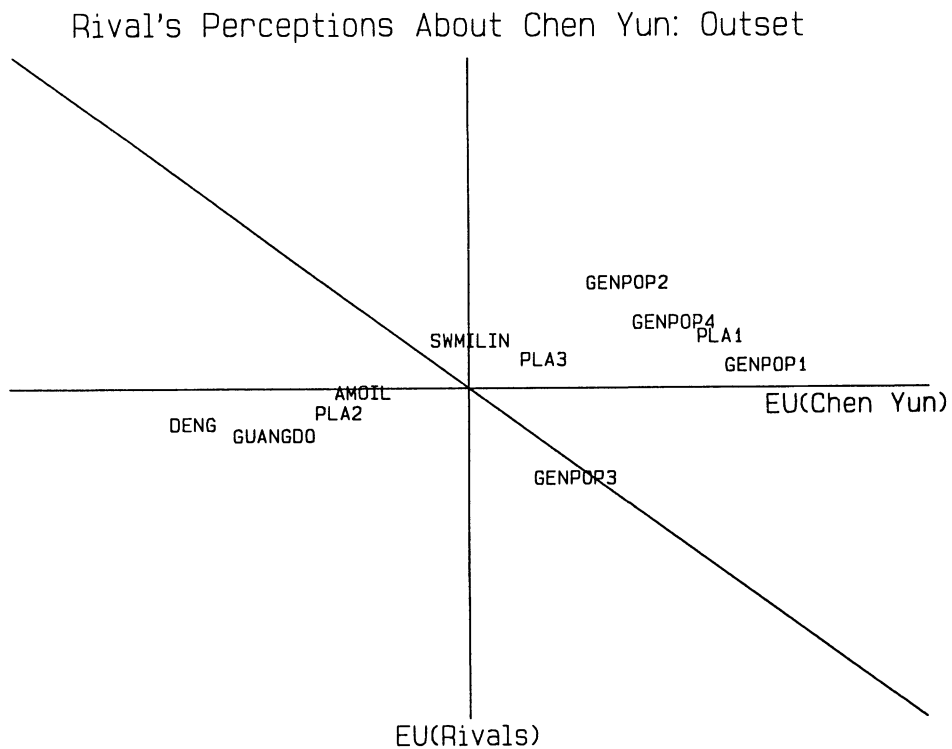


FIG. 5.

Chen Yun and his followers are the biggest losers. Our assessment suggests that fears of expanded Chinese militarism in the South China Sea are misplaced. Although the prospect of such behavior is enhanced in the short term, it is not sustainable given internal Chinese pressures. This means that neither the United States nor regional powers need worry themselves very much about constructing a policy oriented toward deterring China's territorial ambitions concerning the Spratly Islands or related disputes in the near future. What the more distant future will bring (say, more than five years from now), of course, will require updating of the analysis from time to time.

### Conclusions

The approach to analyzing Chinese politics taken here represents a methodological departure from more commonly used perspectives. The technical nature of the analysis will naturally and appropriately make China specialists and others somewhat skeptical. Yet our conclusions about the low prospects of a war over the Spratly Islands are rather consistent with previous Chinese foreign policy and with much scholarship on the subject.

Shih and Adelman (1993) look at the history of China's foreign policy from 1840 through 1980. They argue that China tends to dramatize its foreign policy determination by participating in many disputes while carefully controlling the level of conflict. Their assessment of historic patterns is quite consistent with the predictions we make regarding the current ongoing dispute in the South China Sea. A similar perspective is found in Gurtov and Hwang's (1980) evaluation of China's participation in the Korean War and in Segal's (1985) observation that China has always been flexible in determining its military goals.

In contrast to our model-based predictions, which are also consistent with several analyses of past Chinese involvement in disputes, there is considerable diversity of opinion about China's future intentions, a diversity that highlights the controversial nature of our predictions. In the context of a prospective conflict with Taiwan, for instance, Chang and Lasater (1993) believe China's approach is to threaten Taiwan with force in order to obtain greater bargaining leverage in the future. Godwin (1993) contends that China is likely to use a blockade of Taiwan to compel reunification, while former chairman of the Joint Chiefs of Staff Admiral Thomas H. Moorer believes that a blockade of Taiwan would immediately escalate into a full-fledged war with the potential to spread throughout the region. Based on our analysis, we are sanguine that China is not prepared to risk such a level of military engagement at this time.

It is reassuring that our findings are echoed in a substantial body of earlier research on China's foreign policy. We have made quite explicit our assumptions about rationality in Chinese policy formation. Others, though using less explicit models, share this conviction that China's policies are shaped by rational, strategic calculations by the leadership. Certainly such a view is reflected, for instance, in Chan (1978) and Whiting (1975). Specialists on China should be somewhat reassured that the formal models approach we have taken is capable of yielding insights into China's future that are generally consistent with a significant body of more conventional analysis. At the same time, such specialists, we hope, will be intrigued by the differences between our predictions and other points of view and by the practical possibilities our approach holds out for predicting future events and for explaining those events in the context of strategic calculations and motivations to gain political advantage.

Some limitations of the model discussed here should be mentioned before we conclude this study. The accuracy of the predictions, of course, relies on the

accuracy of the input data. We believe there is room for improvement in this regard. This report, therefore, can be seen as an invitation for experts on Chinese security policy to join in the effort to analyze Chinese affairs through the use of such models. At the same time, we hasten to add that the reliability of predictions made with this model over the past decade gives us reason to express some confidence in the model, the method used for acquiring data, and the expertise of area specialists in recognizing the underlying structure of power, position, and salience on specified issues. What is more, the model provides a basis for integrating the expertise of those who specialize in particular regions or problems and those who specialize in the analysis of decision making. Such an integration holds out promise of more comprehensive political analysis than has generally been possible by either decision analysts or area specialists on their own in the past.

To the extent that one might doubt the validity of the data, the approach taken here provides a useful tool for assessing alternative data assumptions. The model can, of course, be resolved with different data assumptions to test the robustness of the current results or to evaluate the impact of alternative views on the fundamental structure of policy making in China (or elsewhere). Some tests of just these questions of robustness have been reported in our analysis.

One of the more encouraging aspects of this type of modeling is that all of the assumptions behind the analysis are explicit and fixed, so that different scholars will not unwittingly introduce alternative assumptions about the fundamental structure of decision making while using an approach such as the one suggested here. This ensures comparability across analysts and allows us to focus specifically on the impact, if any, of alternative input assumptions. Interestingly, this model turns out to be quite robust in its results in the face of quite different specifications of stakeholders, their power, preferences, and salience.

The Spratly Islands dispute appears to be unlikely to flare up into a significant source of violent conflict in the South China Sea over the next few years. The analysis indicates that, if challenged, China's response will be a little bit more aggressive in the near future than it has been recently, but the response will not be so much more aggressive that we should expect a significant diversion of resources away from economic growth and toward military capabilities relevant to disputes in the South China Sea. We see no reason to believe that China will undertake a big policy shift and become more aggressive. Since reformers in China will have a much better chance to implement their agenda, policies that emphasize a stable international environment are expected to prevail in the near future. That is certainly good news, not only for those in the region, but also for American foreign policy makers.

In the event that changing circumstances or a changed leadership in China should produce an alteration in the situation, the United States would almost certainly be called upon to act as the principal source of deterrence. In the event of such exogenous eventualities as the death of Deng Xiaoping, we would hope to revisit this issue and reanalyze the prospects for a stable Chinese policy using the framework suggested here.

### **Appendix: Description of Positions and Groups**

#### **Issue Definition:**

What level of resources (therefore, defining what level of military operation) should be reallocated from economic reform to military adventure to respond to challenge(s) from smaller countries and to secure China's interests in the

South China Sea? (The assumption is that the challenge(s) will be mostly small-scale one(s) and there will be no superpower involvement.)

#### Groups and Positions:

**Deng and Reformers in the Party:** This group includes Deng Xiaoping, General Secretary Jiang Tse-min, Prime Minister Li Peng, Foreign Minister Qian Qichen, and others. This group advocates the peaceful resolution of any territorial dispute with neighboring countries. Li Peng and Qian (*World Journal*, August 18 and 19, 1992:4) were quoted as saying that China needs a peaceful international environment to embark on vigorous economic reform programs. Li Peng was also quoted as saying that it is not China's intention to be a hegemonic power in Southeast Asia (*World Journal*, August 18, 1992:4).

**Chen Yun and Supporters in the Party:** Led by Chen Yun, this group is the conservative wing of the Communist party. It is believed that there is quite a following behind this faction. Chen Yun was quoted as saying that economic reform is important but it needs to follow the Chinese model of socialism (*World Journal*, May 13, 1992:4). This group does not oppose expanded military conflict in the area, for at least two reasons. First, a serious military conflict would change the policy priority and emphasize collectivism instead of individualism. Second, the uncertainty created by a war might change their disadvantaged power position vis-à-vis the reformers.

**PLA1:** This group includes the People's Liberation Army's (PLA) professional officers in the middle and lower ranks, aged from around 50 or older. They are the losers in the process of economic reform. Many of these officers are under the threat of losing their jobs with little chance to transfer to other jobs (*World Journal*, July 1, 1992:4). Their level of respect has declined primarily because of social changes brought about by the success of economic reform (*World Journal*, June 25, 1992:4). In addition, they have voiced concerns about the ill effects of economic reform on the PLA's fighting capability and on the morale of their troops. They believe that they would benefit from conflict against other countries.

**PLA2:** This group includes those high-level leaders in the PLA who support Deng's economic reforms. For instance, PLA2 includes the National Chairman, Yang Shangkun, and the PLA reform group led by Yang's younger brother and Chief of the General Staff, General Chih Haotien (*World Journal*, June 12, 1992:4). In a news report (*World Journal*, October 10, 1991:1) Yang was quoted as saying that economic reform is the single most important priority for China, but he cautions that China will respond with force if threatened militarily. If challenged in the South China Sea, a combination of a naval blockade and economic sanction might be, according to Yang, the best response (*World Journal*, August 15, 1992:1).

**PLA3:** This group includes most of the naval forces. The Navy has been a big winner in China's recent increases in military expenditures for technological improvement. As long as a military conflict does not escalate out of control, sizable conflict in the South China Sea would further boost the perception of the importance of the Navy. In turn, it would help the Navy to obtain even more resources.

**Guangdong Provincial Government and the Guangdong Military Region:** This group includes the population in the Guangdong area, represented by the leadership of the provincial government and the military region. They are big



winners because of the economic reform program (*World Journal*, June 13, 1992:4). Recently, they have become less and less controlled by the political center in Beijing. They oppose a major military operation as the vehicle by which Beijing regains control over the South China Sea region. However, they do not adamantly oppose a controlled, limited military action in which the military divisions from the Guangdong Military Region would be responsible for the operation. There are two reasons they would find such a limited military engagement acceptable: (1) to secure the economic benefits from the exploration of the South China Sea; and (2) to increase their power through the resources gained from military preparations and operations.

**General Population 1:** This group includes fanatic nationalists in China (about 1% of the population) who are extremely sensitive to any foreign challenge to China's territorial integrity. Foreign challenges serve as vivid reminders of the humiliating history of imperial invasions of China by foreign powers. Therefore, whenever China's territorial integrity is challenged, they prefer China to respond in a forceful way. However, even this group would not want an all-out war.

**General Population 2:** This group includes those who have a strong sense of nationalism but are not as fanatic as those in the GP1 (about 3–5% of the population). They prefer China to respond in a limited but forceful way, say, a limited conventional war involving no more than two branches of the armed forces.

**General Population 3:** This group includes those who have benefited from economic reforms (about 40% of the population, excluding Guangdong). The territorial disputes in the South China Sea are not their prime concern. They do not want to see the current path of reform interrupted by international conflict, nor do they want to see conservatives regain power. They could accept a military showdown that fell short of actual fighting.

**General Population 4:** This group includes those whose position on the issue is between GP2 (General Population 2) and GP3 (about 50–55% of the population). Included in this group are those who have not yet benefited much from economic reforms and who therefore put heavier weight on territorial integrity than on stability for the sake of economic reform and development. Neither stability for the sake of economic reforms nor military operations for the sake of territorial integrity is a high priority for them. They can, however, be mobilized by an appeal to nationalism. Without such a mobilization, they probably prefer to “teach” smaller countries a lesson with a limited, low-intensity arms operation.

**American Oil Company(ies):** This group includes the oil companies that are interested in cooperating with China to explore oil in the area. Of course, the company(ies) would prefer a peaceful, stable environment for their operation. However, if their contract(s) with China were challenged by other nations in the region, they would prefer that China “teach” those nations a lesson. The war should be serious enough to deter other countries from possibly challenging the contract(s) again, but should not be so out of control that the oil exploration is jeopardized.

**South-West Military-Industrial Complex:** The military-industrial complex in the South-West of China is one of the most important concentrations of military industries in China. Many important military modernization projects have been contracted to institutions in this region. Military conflict would probably bring them more contracts.

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