Policy Perspectives on National Security and Foreign Policy Decision Making

Steven B. Redd and Alex Mintz

This article reviews major decision-making models with an emphasis on basic theoretical perspectives as well as on how these models explain foreign policy decision making and national and international security decisions. Furthermore, we examine how these models have been utilized in explanations of various international crises. Specifically, for each model, we present examples drawn from the literature on applications of the respective model to foreign policy and national security decisions. The theories we have reviewed are as follows: rational choice, cybernetic model, prospect theory, poliheuristic theory, organizational and bureaucratic politics, groupthink and polythink, and analogical reasoning. We also review the Applied Decision Analysis method, and the concept of biases in decision making.

Introduction

How do leaders actually make foreign policy and national security decisions? How do they process information? Which decision rules do they utilize in making decisions? How do the rules and strategies adopted by decision makers affect the policies they enact? More important, how do scholars of foreign policy and national security decision making utilize decision models in explaining real-world decisions? In this article, we attempt to answer these questions by reviewing various decision-making models and what they tell us about how national security level policymakers process information en route to choice and how this information processing affects the policies they choose. We begin with rational choice theory and then proceed to review the contributions of cybernetic theory, prospect theory, poliheuristic theory, organizational process and bureaucratic politics models, groupthink, polythink, analogical reasoning, the Applied Decision Analysis (ADA) method, and the concept of biases in decision making. We chose these theories and models of decision making because they are generally regarded as the most prominent in the literature on foreign policy decision making and have been examined and applied in numerous cases as demonstrated below. We first briefly summarize each theory, model, method, or concept, and then review how each has been applied in the scholarly literature to actual foreign policy and national security cases.

Models of Decisions Making

Rational Choice Theory

The term "rational actor," broadly defined, refers to an individual "who makes choices by taking the following steps: (i) searching for relevant information regarding the conditions of choice; (ii) integrating that information so as to discover existing alternatives for action; (iii) drawing upon empirical generalizations to deduce the likely results each alternative will yield; (iv) judging which will best satisfy his or her wants; (v) choosing a course of action accordingly" (Rosenberg, 1995, p. 111).

The rational model is parsimonious and elegant. Few straightforward assumptions explain a wide range of policy decisions. Perhaps the simplest conceptualization of decision making according to rational choice theory is that put forth by Stein and Welch (1997) wherein they state,

> Rational choice theory proceeds from a simple and intuitive idea: If we know what people want, we can explain and predict what they do. It assumes merely that people are cognitively competent to match means to ends and to rank options accordingly. In standard formulations, a rational analysis simply needs information about what people want, what alternatives are open to them, and what they know (or can reasonably be expected to figure out) about the likely costs and benefits of alternatives. (p. 52)

The key assumption of the rational choice school in international relations is that "nations are led by rational, forward-looking, expected-utility-maximizing leaders" (Bueno de Mesquita & Lalman, 1990, p. 751). Scholars distinguish between thin and thick rationality (Mintz & DeRouen, 2010, p. 59). Thin rationality refers to the strategic pursuit of stable and ordered preferences (Mintz & DeRouen, 2010, p. 59). Thick rationality assumes, in contrast, that actors have specific preferences. Thus, in politics, for most politicians, the preference is typically perpetuation in office (Mintz & DeRouen, 2010, p. 59).

Rational choice approaches in foreign policy analysis and international relations have centered around several important contributions made by Bueno de Mesquita (1981, 1983, 1984, 1989), Bueno de Mesquita and Lalman (1990, 1992), and others (see e.g., Morgan & Bickers, 1992; Morrow, 1985, 1994; Wittman, 1979). A review of this literature shows that the authors use the rational choice approach to explain and predict *outcomes* in foreign policy and international conflict. In general, the analytic, rational model should lead to better decisions, although not always to better outcomes (Mintz & DeRouen, 2010, p. 58).

Applications of Rational Choice to National Security and Foreign Policy Decisions: Examples. Rational choice theory has been used to analyze many different historical foreign policy and national security choices. Bueno de Mesquita and Lalman (1992) found that rational choice theory was more persuasive in explaining domestic leaders' decisions pertinent to the Sino-Indian War and the Seven Weeks' War, just to name a few, than power preponderance theory or balance-of-power theory. Szalai

(2008) used rational choice theory to examine the creation and evolution of U.S. nuclear defense policy in the 1940s. Pollack (2007) applies rational choice to a study of European Union politics including decision making with respect to integration; legislative, executive, and judicial politics within the context of the EU; and public opinion and Europeanization.

Kim and Bueno de Mesquita (1995) used a game theoretic approach to show that decision makers take situational perceptions into account in war and peace decisions. More specifically, they were able to specify the conditions under which differences in perception were more or less likely to lead to war. Fearon (1995, p. 400) explained war as a function of rationalist explanations arguing that "the combination of private information about relative power or will and the strategic incentive to misrepresent these afford a tenable rationalist explanation for war." Fearon used this focus on private information and deliberate misrepresentation to explain decisions in July 1914 in World War I on the part of the principal actors, as well as on the part of Russian and Japanese leaders in the Russo-Japanese War of 1904.

Mintz and DeRouen (2010) examined New Zealand's decision to defy the ANZUS Treaty and showed that New Zealand's decision, while appearing to be perhaps irrational in the sense that it made decisions that caused it to lose important allies in the United States and Great Britain during the Cold War, was actually quite rational. As Mintz and DeRouen state (2010, p. 60), "by establishing itself as a promoter of international peace, New Zealand had conceivably increased its security and saved money that might otherwise have gone to expensive defense systems." Understanding New Zealand's decision as rational, however, can only be properly understood by taking domestic politics into account (Bueno de Mesquita & Lalman, 1992), particularly the role of public opinion that focused on antinuclear policies (Mintz & DeRouen, 2010).

Cybernetic Theory

Perhaps the chief critique of rational choice theory was originally put forth by Herbert Simon (1957) in his notion of bounded or procedural rationality, which states that decision makers are still rational, only boundedly so. Specifically, he posited that rational choice models were insensitive to the cognitive limitations of individuals and organizations (Simon, 1992). By claiming that individuals were boundedly rational, Simon recognized the limitations of the information-processing capacities of both individuals and organizations in decision making (Simon, 1957, 1990).

The basic argument is that individuals face constraints that limit decision makers' computational capabilities, their memory and recall abilities, etc. Because of these constraints, individuals develop decision procedures that enable them to deal more effectively and decisively with both their own cognitive limitations as well as with the demands imposed by the decision environment (March, 1986; Simon, 1955, 1957; Suedfeld & Tetlock, 1992). Simon (1957) used the term "satisficing" to denote these decision procedures. Satisficing implies that decision makers stop searching for information once they have found a satisfactory alternative; moreover, this

alternative need not be an optimal one, merely one that satisfies some *a priori* minimum threshold (Monroe, 1991; Zey, 1992).

Steinbruner (1974/2002, pp. 12–13), in his influential book *The Cybernetic Theory of Decision*, states, "Critics have long noted that rational theory assumes such sophisticated processing of information that it strains credulity to impute such procedures to real decision makers. The mind of man, for all its marvels, is a limited instrument." Steinbruner attempted to explain decision making as it occurs in reality, i.e., under conditions of complexity and uncertainty. Decision makers operate under conditions of "structural uncertainty" wherein an individual is not able to ascertain the state of the environment, locate available alternatives, or even assess the consequences of a chosen alternative (Steinbruner, 1974/2002, p. 18). Basically speaking, he argued that the cybernetic processes of "incrementalism" and "satisficing" used by individuals explained simple and "routine" decisions. Steinbruner (1974/2002, p. 86) summarizes the cybernetic paradigm by stating that "[its] major theme is that the decision process is organized around the problem of controlling inherent uncertainty by means of highly focused attention and highly programmed response. The decision maker in this view does not engage in alternative outcome calculations or in updated probability assessments."

Applications of Cybernetic Theory to National Security and Foreign Policy Decisions: Examples. Ostrom and Job (1986; see also James & Oneal, 1991), using several key variables to represent the effect of domestic politics, the economy, and international tension, constructed a cybernetic model of national security decision making for the political use of military force. Ostrom and Job (1986, p. 543) refer to a decision maker's tendency to "[formulate] simple and manageable decision algorithms." Specifically, they argue that presidents monitor a limited number of critical factors and then consider a restricted set of decision options (Ostrom & Job, 1986, p. 543).

Ostrom and Job (1986) constructed their cybernetic model to account for three factors originally suggested by Simon (1959): (i) the cognitive structure of the president-as-decision-maker; (ii) the content and formulation of his decision premises; and (iii) the logic of his inference process (i.e., the decision rule) used to reach a decision. Specifically, with respect to cognitive structure, the authors (Ostrom & Job, 1986, p. 544) posit that decision makers focus on a small and relatively fixed number of environmental factors but that they perceive these various inputs in "terms of quite gross distinctions." In other words, a decision maker will not exhaustively catalog the actual state of the environment as well as the available options. In addressing decision premises, Ostrom and Job (1986) quote Simon (1959, p. 274) wherein he states that each premise specifies the "computational procedures for *assessing* the state of the environment and its implications for action" (italics in the original). Ostrom and Job (1986) state that the president forms his decision premises on the basis of his three major functional responsibilities: commander in chief (international dimension), chief executive (domestic dimension), and political leader (political dimension).

Ostrom and Job (1986) note that the president must decide how to choose among the available alternatives in a given decision task, i.e., he must implement a decision

rule. Again, the authors refer to Simon (1959) and his notion of satisficing wherein a decision maker attempts to find solutions that are "good enough" rather than those that maximize expected utility.

Prospect Theory

Prospect theory was first introduced by Kahneman and Tversky (1979), and has since become one of the leading alternatives to rational choice (expected utility) as a theory of decision under conditions of risk (see also Levy, 1992a, 1992b, 1997a, 1997b; McDermott, 1992, 2004; Mercer, 2005). The work by Kahneman and Tversky and their colleagues forms the foundation upon which other scholars have built as they have applied prospect theory's basic decision-making concepts to other subfields such as political science.[1]

Prospect theory posits that individuals evaluate outcomes not from net asset levels but instead as a function of deviations from a reference point. They also overweight losses relative to comparable gains and are risk-acceptant in the domain of loss but risk-averse in the domain of gain. Their identification of this reference point is a critical variable, and they react to probabilities in a nonlinear fashion (Kahneman & Tversky, 1979; Levy, 1992a, 1992b, 1997a, 1997b).

Instead of evaluating net asset levels, individuals tend to think in terms of gains and losses, specifically choosing among options in terms of deviations from a reference point (Kahneman & Tversky, 1979). Reference dependence is the central analytic assumption of prospect theory (Levy, 1997a; Tversky & Kahneman, 1991). This reference dependence is in violation of the expected utility assumption of an individual utility function that is defined in terms of net asset levels. Reference dependence manifests itself when we see that an individual "may prefer x to y when x is currently a part of her endowment but prefer y to x when y is part of her endowment" (Levy, 1997a, p. 35). The reference point is usually the status quo but is not necessarily so. Levy (1992a) speaks of deviations from an *aspiration level* or even some other reference point that is not synonymous with the status quo.

Because of the differential treatment of gains and losses and the importance of the reference point in determining outcomes associated with these domains, identifying the reference point, i.e., framing the choice problem, can have a critical effect on choice (Kahneman & Tversky, 1979; Levy, 1992a, 1997a; Tversky & Kahneman, 1981, 1986). Framing the choice problem in terms of gains vs. losses has a significant impact on preferences regardless of whether or not the two representations are mathematically equivalent. Framing of the reference point is often predetermined by the situation, i.e., in static environments the status quo equals the reference point. However, under dynamic conditions the reference point is not so well defined, and differences in the way individuals accommodate to gains and losses may affect the framing of the reference point (Levy, 1992a, 1997a).

Levy (1992a, 1997a) notes that prospect theory divides choice processes into two phases: (i) an *editing phase* that includes a preliminary analysis of the choice problem wherein actors identify options, the possible consequences or outcomes of each, and the values and probabilities associated with each of these outcomes; and (ii) an

evaluation phase in which the edited prospects are evaluated and then the preferred prospect is chosen. However, Levy (1997a, p. 42) states that "these parameters [identifying options, possible outcomes, and values and probabilities associated with each] are taken as given and treated exogenously. In its current form, therefore, prospect theory is a theory of the evaluation of prospects but not a theory of the editing of choices" (see also Levy, 1992a). Levy (1997a, 1997b; see also McDermott, 1992) notes that this is a limitation of prospect theory especially if one considers the plausible argument that much of the explanatory power in international relations exists in the specification of the problem, the available options, the values and probabilities associated with possible outcomes, and reference point framing.

However, this is a problem for expected utility and many other decision theories as well (Levy, 1997a). Both expected utility and prospect theory are structural theories rather than process theories. "Given certain parameters of the choice problem, they attempt to explain choices or outcomes, not the processes through which those choices come about" (Levy, 1997a, p. 42; see also Abelson & Levi, 1985).

Applications of Prospect Theory to Foreign Policy and National Security Decisions: Examples. Prospect theory has been applied in various studies of national and international security and foreign policy behavior (see e.g., Boettcher, 2004; Farnham, 1992; Jervis, 1988, 1989, 1991, 1992; McDermott, 1992).

Farnham (1992) examined FDR's decision-making behavior with respect to the Munich crisis and found that while FDR was initially hesitant to intervene in the crisis, he changed his mind once the crisis was framed as a loss. Specifically, Farnham (1992) states,

> Roosevelt's decision-making behavior shows that his reversal of preferences about the desirability of American intervention in the crisis was not the result of a reassessment of the expected utility of intervening on the basis of new information. Rather, in the midst of the crisis, despite the fact that the objective situation had not changed materially from an American point of view, Roosevelt suddenly reframed the outcome of war as a loss and became anxious to prevent it, even to the point of incurring risks he had previously judged unacceptable. (p. 233)

Farnham (1992, p. 227) further notes that FDR's change to a loss frame was most likely due to the prospect of impending war in Europe becoming "emotionally compelling to him."

McDermott (1992) used prospect theory to explain Carter's decision making in the Tehran hostage crisis. Specifically, she argued that Carter was willing to undertake the risky hostage rescue mission because he had been operating in the domain of political loss as evidenced by low public approval numbers and challenges from within his own political party. Biglaiser and DeRouen (2004) used prospect theory to explain how Latin American leaders, when operating in the domain of loss (economic problems centering around high inflation), were more likely to choose risky liberal economic reforms (see also Weyland, 1996). Fanis (2004) showed how several economic groups in Chile in the mid-1970s were motivated to cooperate with others,

even though doing so went against their own self-interest, and they did so because they were operating in the domain of loss.

Poliheuristic Theory

Poliheuristic theory concentrates on the "why" and "how" of decision making, which makes the theory relevant to both the contents and the processes of decision making (Mintz, 2004). The term poliheuristic can be subdivided into the roots *poly* (many) and *heuristic* (shortcuts), which refers to the cognitive mechanisms decision makers utilize in attempts to simplify complex decision tasks (Geva, Redd, & Mintz, 2000; Mintz & Geva, 1997; Mintz, Geva, Redd, & Carnes, 1997).

The poliheuristic theory of decision making proposes that policymakers employ a two-stage decision process where in the first stage decision makers initially screen available alternatives utilizing cognitive-based heuristic strategies. In the second stage, when the decision matrix has been reduced to a more manageable number of alternatives and dimensions, policymakers resort to analytic, expected utility, or lexicographic rules of choice in an effort to minimize risks and maximize rewards (Mintz & Geva, 1997; Mintz et al., 1997; Payne, Bettman, & Johnson, 1993). The first phase in the decision process typically involves a nonexhaustive search wherein decision makers process information across dimensions in an attempt to select "surviving" alternatives before the completion of the consideration of all alternatives along all dimensions (Mintz, 1993; Mintz & Geva, 1997; Mintz et al., 1997; Payne et al., 1993). The second phase, then, consists of a lexicographic or maximizing decision rule used in selecting an alternative from the subset of "surviving" alternatives.[2]

Another key premise of the poliheuristic theory is its reference to the *political* aspects of decision making in a foreign policy context. The assumption is that the policymaker measures costs and benefits, risks and rewards, gains and losses, and success and failure in terms of political ramifications above all else (Mintz, 1993). Furthermore, politicians are concerned about challenges to their leadership, their prospects of political survival, and their level of support (Kinne, 2005). Domestic politics is the essence of decision. Because loss aversion (Kahneman & Tversky, 1979; Levy, 1992a, 1992b) outweighs all other considerations, leaders are driven more by avoiding failure than by attaining success (Anderson, 1983). As Mintz and Geva (1997, p. 84) assert "the political dimension is important in foreign policy decisions not so much because politicians are driven by public support but because they are averse to loss and would therefore reject alternatives that may hurt them politically." The theory, then, suggests procedures for eliminating alternatives by adopting or rejecting courses of action based on this political heuristic in a two-stage decision process (Mintz et al., 1997).

The theory also posits that different decision heuristics may be employed in response to different decision tasks as a function of environmental and personal variations. This premise implies that these decision heuristics and strategies may be suboptimal (i.e., not always the "best"). Again, decision makers not only use different strategies depending on various environmental and/or cognitive constraints (Geva

et al., 2000; Maoz, 1986, 1997; Mintz & Geva, 1997; Mintz et al., 1997), but they also resort to the use of different strategies en route to a single choice (Mintz & Geva, 1997; Mintz et al., 1997). Brulé (2008, p. 266) extensively reviewed the poliheuristic literature and found that it was "progressive in the Lakatosian sense" and superior to other decision models.

Both expected utility and cybernetic theories of decision making assume that decision makers typically utilize compensatory decision rules in the first stage of information processing. In contrast, poliheuristic theory of decision making posits that decision makers employ noncompensatory rules of decision making.

Applications of Poliheuristic Theory to National Security and Foreign Policy Decisions: Examples. Freedman and Karsh (1991, p. 35) state that during the Persian Gulf crisis of 1990–1991, Iraqi president Saddam Hussein rejected outright the option of withdrawing from Kuwait because "there was an absolute certainty in [his] mind of what could not be sacrificed—his political survival." This description fits poliheuristic theory, which asserts that policymakers will use an attribute, or dimension-based process instead of an alternative-based approach for processing information. A dimension-based (intradimensional) strategy signifies that an individual focuses on a given dimension and then reviews information within that dimension across alternatives and then continues the process for another dimension (Payne, 1976). Russo and Dosher (1983) specifically state that intradimensional, or attribute-based, processing is cognitively easier and hence more likely to be employed in cognitively demanding conditions.

The noncompensatory principle suggests that "a low score on one dimension *cannot* be compensated for by a high score on another dimension" (italics added) (Ford, Schmitt, Schechtman, Hults, & Doherty, 1989; see also Billings & Marcus, 1983; Billings & Scherer, 1988; Hogarth, 1987; Payne, Bettman, & Johnson, 1988; Payne et al., 1993). In other words, decision makers do not make trade-offs between high and low scores. Hogarth (1987, p. 77) states that, psychologically, trade-offs are difficult to make because decision makers find them difficult to execute as a result of "information-processing limitations."

Mintz (1993), in his study of the Persian Gulf War, began the extension of the noncompensatory principle to the field of foreign policy decision making. Specifically, Mintz (1993) argued that the decision by the United States to attack Iraq followed the noncompensatory principle. Mintz (1993, p. 598) specified the noncompensatory principle for use in foreign policy situations by arguing that the political dimension is the paramount attribute. Moreover, "in a choice situation, if a certain alternative is unacceptable on a given dimension (e.g., it is unacceptable politically), then a high score on another dimension (e.g., the military) *cannot* compensate/ counteract for it, and hence the alternative is eliminated" (italics in the original) (see also Mintz & Geva, 1997). By examining historical documents and written accounts of the deliberations leading up to the conflict, Mintz (1993, pp. 606–7) was able to show that the political dimension was the most salient in President Bush's decision calculus with the military/strategic dimension also playing a critical role. He further

points out that there was no comprehensive, i.e., search for compensatory trade-offs, evaluation of all the alternatives, and in fact it was quite obvious that President Bush did not consider the withdrawal option (Mintz, 1993 p. 607).

Redd (2005, p. 129) examined Clinton's decision making in the Kosovo crisis and found that "President Clinton's decision was influenced by noncompensatory domestic political calculations and the strong influence of his Secretary of State, Madeleine K. Albright." More specifically, President Clinton's decision was heavily influenced by his concern over how Congress and the public would react to his initial decision not to act and then secondly to any possible casualties from a use of force. He greatly feared the loss of American lives and how such losses would influence his political fortunes. Similarly, Brulé (2005) examined Carter's decision making with respect to the Iran hostage rescue decision and found that Carter eliminated in a noncompensatory fashion all options that threatened his chances of reelection. Once he narrowed the choice set down to a few politically palatable alternatives, he engaged in more of a maximizing process that focused on military and strategic concerns (Brulé, 2005, p. 99).[3]

Taylor-Robinson and Redd (2003, p. 95) examined Eisenhower's decision making surrounding the 1954 U.S.-led coup in Guatemala and found that he "quickly eliminated the do-nothing option as too politically costly. . . . Because of United Fruit's framing, the U.S. public and press, as well as the U.S. Congress and key actors within the administration, were very worried about communism in Guatemala and were pressuring President Eisenhower to take action. Thus, in the first stage of the decision process, Eisenhower employed a noncompensatory decision rule that caused him to eliminate the option of taking no action because it was politically infeasible" (see Mintz and Redd [2003] for a more lengthy discussion of framing in the context of international relations). Similarly, Sathasivam (2003, p. 55) found that Pakistan had "no other choice" than to build and test a nuclear device in response to India's decision to do the same. "Politically, Pakistan's prime minister could not choose the do-nothing option . . . and realistically expect to survive in government" (p. 70).

DeRouen (2003) even used poliheuristic theory to explain decisions "not" to use force, specifically in the U.S. decision not to intervene in Dien Bien Phu in 1954. Again, DeRouen (2003, p. 24) found that choosing not to use force was the politically expedient, noncompensatory option and "domestic politics constrained Eisenhower from using force." Astorino-Courtois and Trusty (2003, p. 47) investigated Israel–Syria peace decisions and found that the "sensitivity of the poliheuristic model to the political aspect of foreign policy choices added clarity and explanatory power to the analysis of apparent changes in Assad's interest in a peace accord, especially from the Rabin to Peres governments."

Below (2008) used poliheuristic theory to examine how Latin American leaders processed information with respect to ratifying the Kyoto Protocol. She found that leaders used cognitive heuristics that eliminated various policy options en route to choice and that their choices surrounding this environmental treaty were often not motivated by environmental concerns but by domestic political calculations. James and Zhang (2005) and Sandal, Zhang, James, and James (2011) examined crisis decision making in China, and comparatively in China and Turkey, respectively,

using poliheuristic theory and found that it does quite well in explaining leaders' crisis decision making.

Groupthink

Groupthink is a theory of defective decision making (Janis, 1982). More specifically, groupthink addresses defective decision making on the part of a cohesive decision-making group in which loyalty to real or perceived group norms takes precedence over independent, critical judgment. Conformity is the result of two possible factors: (i) Conformity from group pressure on the individual. Direct pressure comes from members of the group against dissenters, usually from the emergence of self-appointed "mindguards"; and (ii) Conformity from stress-induced cohesion. Time pressure may cause members of the group to withhold dissenting opinions for the sake of reaching consensus on a decision.

The consequences of groupthink and its resulting defective decision making include an incomplete survey of alternatives and objects, failure to examine the risks of preferred alternatives and a failure to reappraise initially rejected alternatives, poor information search, selective bias in processing information, and failure to work out contingency plans (Janis, 1982).

Applications of Groupthink to Foreign Policy and National Security Decisions: Examples. Perhaps the most famous example of groupthink that Janis (1982) documents is the Bay of Pigs invasion (often referred to as a fiasco) in 1961 in the JFK administration. In fact, Janis (1982, p. 14) even refers to the Bay of Pigs invasion as "a perfect failure." Kennedy and his advisory group suffered from illusions of invulnerability, illusions of unanimity, suppression of personal doubts among the advisers themselves, and the presence of self-appointed mindguards. Janis also includes the Korean War, Pearl Harbor, and the Vietnam War as additional examples of groupthink.

Hart (1994) uses groupthink to examine the Iran–Contra scandal during the Reagan administration. Walker and Watson (1989) argued that groupthink helps explain the flawed decision making on the part of British leaders during the Munich crisis, at least during parts of the crisis. McQueen (2005) argues that the Bush administration's decision to attack Iraq was the result of groupthink, citing an incomplete survey of the alternatives to war, a failure to reexamine previously rejected alternatives, and that there was a selective bias in the manner in which intelligence information was interpreted (see also Badie, 2010; Scheeringa, 2010). Beckner (2012) examined three crises facing the JFK administration for evidence of groupthink—the Bay of Pigs, the Cuban Missile Crisis, and the Vietnam conflict—and found that higher levels of groupthink led to poorer quality decision processes.

Polythink

Mintz and colleagues (Mintz, Mishal, & Morag, 2005; Mintz & DeRouen, 2010, Chapter 3) introduced the concept of *polythink*, which is essentially the opposite of groupthink: a plurality of opinions, views, and perceptions of group members.

Polythink means "*Poly* (*many*) *ways of perceiving the same decision problem, goals and solutions*" (Mintz et al., 2005; Mintz & DeRouen, 2010). Polythink can be contrasted with homogenous, uniform, monolithic worldview of group members.

Some of the consequences of polythink are similar to those of groupthink. This is the case *not* because the group is thinking alike or sharing the same views but because the group is failing to carry out any significant collective thinking. However, there are a number of important consequences that are unique to polythink.

As is the case with groupthink, polythink is likely to lead to:

1. Defective, suboptimal decisions

2. Limited review of alternatives, objectives, and risks

3. Selective use of information

4. Paralysis in decision making

However, there are several consequences of polythink that are very different from those of groupthink (listed in Mintz et al., 2005):

1. Greater likelihood for group conflict

2. Greater likelihood for leaks

3. Less likelihood for the group to speak in one voice

4. More likelihood for framing effects

5. No room for errors

6. Adoption of positions with lowest common denominator

7. Broader vision due to plurality of opinions of group members

An Application of Polythink to Decision Making in Negotiation. Mintz et al. (2005) examined whether polythink (or groupthink) existed at the Camp David 2000 Summit and concluded, based on in-depth interviews with all members of the Israeli delegation to the summer, including former Israeli Foreign Minister and former Chief of the IDF, that there was evidence of polythink among members of the Israeli delegation to Camp David. Mintz and Wayne (2014) apply polythink in an analysis of the 9/11 decision and a series of U.S. foreign policy decisions (vis-à-vis Iraq, Afghanistan, Iran).

Organizational Process Model

The organizational process model is, in some respects, similar to the cybernetic model discussed above. It views foreign policy as organizational output. One of the key concepts of the organizational process model is that of standard operating procedures (SOPs), which are routinized courses of action. In every organization there are SOPs, which help determine how the actors in that organization may/will

behave. Organizations do not attempt to estimate the probability distribution of future outcomes, as rational choice theory states. Instead, they avoid uncertainty by having and resorting to these SOPs. Therefore, the best explanation of an organization's behavior at time t is t-1, and the best prediction of behavior at t + 1 is t.

This model is clearly grounded in the notion that policymakers are boundedly rational, as noted in the reference above to cybernetic models. Because of numerous constraints such as time pressure, cognitive effort, and cognitive skills, which result in an individual's or group's inability to maximize, they instead satisfice (instead of optimizing, they look for alternatives that are good enough).

An Application of the Organizational Process Model to a National Security Decision. Perhaps the most well-known example of the application of the organizational process model is Allison's examination of ExComm decision making during the Cuban Missile crisis (Allison, 1969, 1971). However, Allison concluded that the bureaucratic politics model (see Discussion below) performed better in explaining decision making during the Cuban Missile Crisis than did the organizational process or rational choice models.

Bureaucratic Politics

The development of the bureaucratic politics model can be attributed to Graham Allison's *Essence of Decision* and his further work with Morton Halperin (Allison, 1969, 1971; Allison & Halperin, 1972). This work pioneered the conceptualization of the theory and developed its structure as a way to explain government action. This in no respects means that there is wide acceptance of this model and its implications, and the text was met with both praise (Holsti, 1972; Rourke, 1972; Wagner, 1974) and criticism (Caldwell, 1977; Krasner, 1972). More recently scholars have questioned both the internal logical consistence (Bendor & Hammond, 1992), and its generalizability to other political systems (Kasza, 1987).

There are two fundamental aspects in understanding decision making in this approach: (i) how decisions are arrived at; and (ii) what beliefs the decision maker has about his/her advisors. Allison makes it quite clear that "the name of the game is politics: bargaining along regularized circuits among players positioned hierarchically within the government. Government behavior can thus be understood according to a third conceptual model, not as organizational outputs but as results of these bargaining games" (Allison, 1971, p. 144). Government actors bargain over outcomes due to their different policy goals. The high-level positions that the actors possess in the foreign policy environment allow them to participate in the bargaining game (Allison, 1971, p. 164). Furthermore, Allison (1971) argues that "bargaining games are neither random nor haphazard" where "action channels structure the game by pre-selecting the major players, determining their usual points of entrance into the game, and distributing particular advantages and disadvantages for each game" (pp. 169–70).

As such actors will bargain over policy to maximize the influence they have in implementing a particular policy. They do so to "promote the positions their

organizations have taken in the past" that "are consistent with the interests their organization represents" (Feldman, 1989, p. 13). "Each player's probability of success depends upon at least three elements: bargaining advantages, skill and will in using bargaining advantages, and other players' perceptions of the first two ingredients" (Allison & Halperin, 1972, p. 50). One of the ways in which organizational/ bureaucratic actors may increase their bargaining advantage is by altering the group's membership to increase the number of similar advisors. Frequently, problems arising from group composition become the driving force behind restructuring executive agencies. For example, Roman and Tarr (1998) describe the restructuring of the Joint Chiefs of Staff as a way to provide a unified, and more powerful, organizational voice to the president by getting everyone "on the same page." This illustrates how various group compositions affect bargaining advantages. Similar evaluations of information by organizationally aligned advisors increase the bargaining weight of the preferred option.

Applications of Bureaucratic Politics to Foreign Policy and National Security Decisions: Examples. Smith (1984/1985) examines how the composition of advisors to President Carter affected policy choice in the Iran hostage crisis. Smith divides advisors into groups according to perceived and generalized "stances" in dealing with the crisis. Smith concludes that group composition limited the evaluation of the alternatives. The multiple "hawks" at the table outmaneuvered the single "dove," Under Secretary of State Warren Christopher. We could expect a bargaining advantage to exist in such cases of multiple "similar" advisors wherein they would outweigh other single advisors. For example, Smith (1984/1985) illustrates that while Under Secretary of State Christopher illustrated a number of dovish alternatives initially proposed by Secretary of State Cyrus Vance, "Brown immediately dismissed these as 'not impressive,' and he was supported by Brzezinski, Jones, Turner, Powell and Jordan [the hawks], all of whom wanted to go ahead. Christopher was alone in his opposition to the plan" (p. 19). Even when Secretary Vance returned to the bargaining table to present his objections to the rescue mission, "his objections were met by 'a deafening silence'" (Smith, 1984/1985, p. 20).

The second fundamental aspect of the bureaucratic politics model is that actors within the bargaining game represent organizationally formed preferences. Many authors have addressed whether choices are arrived at through interaction of organizational beliefs (Drezner, 2000; Feldman, 1989; Simon, 1957; Smith, 1984/1985), whether manipulation affects the choice outcomes (Maoz, 1990), or how bureaucracies may help prevent such manipulation (George, 1980).

Many authors (see e.g., Allison & Halperin, 1972; Downs, 1994; Drezner, 2000) argue that organizations will try to maximize their influence over a particular policy choice. A policy stance will develop according to either the real or perceived "organizational" mission. In recent work Drezner (2000) argues that "idea based" organizations will have a consistent set of goals and attempt to propagate these goals over policy maintaining their preferences over both the means and outcomes of policy. Organizational actors will have policy preferences that are in line with their stated organizational policy preferences. These organizational interests are "often

dominated by the desire to maintain the autonomy of the organization in pursuing what its members view as the essence of the organization's activity" (Allison & Halperin, 1972, p. 49). Experimental findings presented by Hermann, Geva, and Bragg (2001) indicate that actors that have a high sense of organizational commitment are more likely to prefer their organizational goals within groups having unanimous decision rules.

Hollis and Smith (1986, p. 275), in applying the bureaucratic politics model to President Jimmy Carter's decision to pursue a rescue mission in Iran, argue that organization "allegiances are so striking that one might even surmise that, had the participants switched positions, they would also have switched preferences.

Allison and Halperin (1972) argue that individuals in positions within organizations have preferences over alternatives that are determined by the nature of the position itself. "Given the face of the issue that he sees, each player must calculate how the resolution of the issue may affect his interests. This defines his *stakes* in the issue at hand. In light of these stakes he then determines his *stand* on the issue" (Allison & Halperin, 1972, p. 49). Furthermore, "participants define national security according to the interests of the organization to which they belong. Career officials naturally come to believe that the health of their organization is vital to the nation's security" (Halperin, 1972, p. 66).

Are policymakers beholden to their perceptions of the bureaucratic "actor as advocate?" Research by Tetlock (1999) indicates that experts often utilize defense mechanisms to reinforce beliefs when presented with disconfirming evidence. These actors' beliefs can play a significant role in choice selection as illustrated by Lamb's (1985) research of the Mayaguez Crisis, or Jervis's (1976, 1988) work on misperception of both intentions and consequences of decisions. Geva and Skorick (1999) also find that inconsistency of information plays a role in choice selection (for further discussion see Billings & Hermann, 1998; Herrmann, 1988; Taber, 1998; and Vertzberger, 1990).

Analogical Reasoning

Analogical reasoning implies that individuals operate by "transferring knowledge from past problem-solving cases to new problems that are similar to the past cases" (Sage, 1990, p. 1). Sage (1990) notes that this type of decision process is fundamentally different from deductive inference or inductive inference-based reasoning. Interestingly, cybernetic theory relies on analogies in that information is funneled through a feedback mechanism and human behavior in general is therefore highly dependent on previous experiences. Vertzberger (1990) divides analogical reasoning into two stages: (i) establishing an analogy between two events and another analogy between their causes; and (ii) inferring that similar causes lead to similar outcomes. Instead of relying solely on the information at hand, individuals resort to historical analogies as a guide in making decisions. The implication is that individuals are "less-than-rational" in their reliance on historical analogies, analogies which may or may not be accurate. Obviously, the success in using analogical

reasoning depends on the accuracy of a given analogy to a particular foreign policy problem.

Applications of Analogical Reasoning to Foreign Policy and National Security Decisions: Examples. Prior to the Persian Gulf War, many opponents of the impending conflict attempted to portray the situation as "another Vietnam" and that the United States was being dragged into another foreign policy quagmire. Conversely, President George Bush repeatedly referred to Saddam Hussein as another "Hitler" and that the United States could not afford to "appease" another dictator as Chamberlain had prior to World War II.

Khong (1992) has written a book on the influence of analogies on decisions dealing with war. His primary goal was to demonstrate "how historical analogies, once invoked, influence the actual selection of policy options" (p. 9). Khong (1992) develops what he calls the Analogical Explanation (AE) framework. The AE framework "suggests that analogies are cognitive devices that 'help' policymakers perform six diagnostic tasks" (p. 10). These diagnostic tasks aid the decision maker in dealing with complex decision environments and allow the cognitively limited decision maker to rely on "knowledge structures" to assist in decision making (p. 13). Khong then uses the AE framework to examine decision making with respect to Korea, Dien Bien Phu, and Munich.

Applied Decision Analysis

ADA is a procedure for developing descriptive (and predictive) decision profiles of individual decision makers such as political leaders, financial decision makers, other policymakers (Mintz, 2005). The procedure consists of two key steps. First, the analyst must identify the decision matrix—the alternatives, dimensions and implications of the alternatives corresponding to each dimension—of the policymaker. The second step involves the analysis of each decision by uncovering a specific decision rule out of multiple decision rules (e.g., EBA, lexicographic, poliheuristic, satisficing, or utility maximizing) to understand how the policymaker made the decision and which decision rule and model have been used (Mintz, 2005).

In identifying the decision matrix of the policymaker, the analyst/researcher should:

1. Identify the alternatives

2. Identify the decision dimensions

3. Assign weights to each dimension

4. Assign ratings to each implication of each alternative

5. Infer the decision rule

Step 1: Identifying the Decision Matrix of the Policymaker

A decision matrix consists of a set of alternatives, the dimensions (or criteria) for selecting among these alternatives, and an assessment of the implications of each dimension for each alternative. Weights (or levels of importance) can be assigned to each dimension if the analyst observes that dimensions should receive unequal weight in the analysis. The analyst can also use counterfactual scenarios to analyze potential actions and reactions of leaders.

Alternatives. The set of alternatives includes the likely courses of action a decision maker may reasonably consider when faced with some decision problem. For example, leaders may consider using force, applying sanctions, do nothing.

Dimensions. A dimension or a decision criterion is an organizing theme relevant in evaluating the alternatives. Thus, if the leader considers using applying sanctions, using force, or doing nothing in response to another country's behavior, relevant dimensions could be military, diplomatic, political, and economic.

Implications. The implications consist of a description of the likely consequences of an alternative for a given dimension. Each alternative has implications corresponding to each dimension. For example, in the case of applying sanctions, using force, or doing nothing, each of these alternatives has economic, military, political implications.

Ratings. Implications can be rated by the analyst, e.g., from −10 ("very bad") to +10 ("very good"). For example, if choosing the alternative "Do Nothing" is likely to result in a loss of public support for the decision maker, the analyst should assign a negative rating ("very bad," −7 or −8) to the political implications of "Doing Nothing." In contrast, if "Apply Sanctions" is likely to lead to an increase public support, then this alternative should receive a positive rating (e.g., "very good," or +8).

Weights. Weights indicate the importance level of each dimension, e.g., from 1 ("not important at all") to 10 ("very important"). Thus, in the Apply Sanctions example, the analyst assigns different weights to the military, economic, diplomatic, and political dimensions.

Once a policymaker's decision matrix is constructed, it can then be analyzed to uncover the leader's decision rule.

Step 2: Uncovering the Decision Code of Leaders

In the second stage of the ADA procedure, the analyst determines the decision rule used by the policymaker to make a particular choice (Mintz, 2005). For example, if it is clear that the policymaker stopped before considering all of the alternatives

and selected a "good enough" option, then the decision rule may be consistent with a satisficing rule, such as in cybernetic theory.

It is possible to discern the decision rule used by an individual in making multiple decisions. Mintz (2005) termed this the Decision DNA of leaders. The analyst can examine multiple choices made by the policymaker and classify them accordingly. This will reveal a particular decision pattern, which can be further refined by collecting additional observations.

Data to be inserted into the decision matrix can be obtained by interviewing experts (often accompanied by the use of a Delphi technique), by using actual data, conducting content analysis of publications, or by relying on a key expert.

Applications of ADA to Foreign Policy and National Security Decisions: Examples. Previous research has used ADA to understand decisions made by U.S. presidents (Brulé, 2005; Redd, 2005), nondemocratic leaders (Kinne, 2005) as well as leaders of terrorist organizations—Bin Laden, leaders of Hamas and Hezbollah (Chatagnier, Mintz, & Samban, 2012; Mintz, Chatagnier, & Brulé, 2006). ADA has also been utilized for predictions of decisions of terrorist leaders (Chatagnier et al., 2012).

Biases

National security and foreign policy decision makers are often prone to serious biases in decision making, such as a focus on one alternative, the acquisition of information that is "supportive" of this alternative while ignoring critical information that is contradictory to this option, susceptibility to the "preference over preference" bias and so on. Scholars of international relations, organizational behavior, judgment and decision-making processes point to common biases and errors in decision making (Jervis, 1976, 1988). Kahneman, Lovallo, and Sibony (2011) and Thaler and Sunstein (2008) write extensively on how biases influence decision making in strategic choices as well as in everyday life. They also review strategies for improving decision making and eliminating biases from decision making. Sage (1990, pp. 227–29) has identified and listed close to 30 such biases ranging from adjustment and anchoring biases, primacy and recency effects, to "wishful thinking." His general conclusion is that "human decision behavior systematically deviates from (or is biased when compared to) a normative model that is assumed to be the optimal way to make the decision under investigation" (see also Jervis's [1976] work on motivated and unmotivated biases).

Markus and Zajonc (1985) state that bias occurs when individuals become victims of their own cognitive limitations. They divide biases into three general categories: (i) input biases; (ii) output biases; and (iii) operational biases. An input bias occurs when inference relies on data selectively to the extent that some classes of data are given more weight than others. A common input bias is the availability heuristic wherein an individual tends to interpret the frequency or probability of an event based upon what instances or occurrences are brought to mind (Hogarth, 1987; Stein & Welch, 1997; Tversky & Kahneman, 1982b).

Output biases, in contrast, reflect response preferences such as the acquiescence bias wherein there is a tendency to give positive rather than negative answers. Operational biases are generally rules of thumb for inference. Hindsight, attributing a causal structure to past events and blaming ourselves and others for not having foreseen these events, is an example of operational bias (Markus & Zajonc, 1985).

Other biases frequently mentioned in the literature by scholars such as Forman and Selly (2001), Kahneman and Tversky (1979, 1984), Mintz and DeRouen (2010), and others are the following: Shooting from the Hip, Frame Blindness, Lack of Frame Control, Wishful Thinking, Plunging In (Forman & Selly, 2001), misperception (Jervis, 1976, 1988), gain/loss framing (Kahneman & Tversky, 1984), the Poliheuristic Bias (wherein decision makers often reject attractive alternatives because they are damaging politically or personally, resulting in a suboptimal choice), the preference over preference bias, and the "locking" on a preferred alternative rather than examining a broad range of alternatives.

"Plunging In" is defined by Forman and Selly (2001, p. 4) as "gathering information and reaching conclusions without thinking about the crux of the issue or how decisions like this one should be made." "Frame Blindness" is defined by Forman and Selly (p. 4) as "setting out to solve the wrong problem because your framework causes you to overlook attractive options or lose sight of important objectives." "Lack of Frame Control" is defined as "failing to define the problem in more ways than one, or being unduly influenced by the frames of others" (p. 4). "Shooting from the Hip" is defined as "trying to keep straight in your head all the information relating to the decision rather than relying on a systematic procedure" (p. 4). "Preference over preference" occurs when the decision maker has a clear preference for a course of action that affects his choices (Mintz & DeRouen, 2010). Closely related to the preference over preference bias is the locking on a preferred alternative bias.

There is no central theory of cognitive bias. Scholars and researchers have identified numerous biases and many are incorporated into various theories of decision making while many scholars focus on a particular bias and examine its impact on information processing and choice (see e.g., Frisch, 1993; Hogarth, 1987; Sage, 1990). Moreover, while many scholars discuss biases in information processing and choice (see e.g., Fiske & Taylor, 1991; Forman & Selly, 2001; Sage, 1990), generally speaking little effort is made to systematically compare biases to each other with respect to origin, similarity, and impact on decision making. Moreover, there is no review of biases in decision making as applied to foreign policy and national security decisions.

For example, while frame blindness, as noted above, refers to the tendency for decision makers to solve the wrong problem because one's mental framework is focused on a particular piece of information or objective to the exclusion of others, how does this bias relate to other biases such as the preference over preference bias? We would submit that the preference over preference phenomenon refers to a decision maker identifying a preferred option regardless of the information presented, whereas the frame blindness bias implies that the decision maker has misidentified the decision task at hand because of a fixation on a particular goal or objective, not necessarily a course of action *per se*.

Applications of Biases to Foreign Policy and National Security Decisions: Examples. During the July–August 2007 second war in Lebanon, Israel "locked in" on the air campaign course of action. Its chief of staff largely advocated the use of this option even though the air attack was ineffective in shutting off short term the shelling of Katyusha rockets from southern Lebanon into northern Israel. There was clearly a "preference over preference" bias in the Israeli military thinking pertaining to the air campaign as the preferred mode of fighting against Hezbollah (see the Winograd Committee preliminary report, 2007).

Mintz and Redd (2007) have conducted an experimental analysis using the Decision Board simulator with high-ranking military and Pentagon officials, focusing on selecting a counter-terrorism technology. The study revealed many of the cognitive biases reported above in decisions on combating terrorism.

Decisions in Pearl Harbor, the Bay of Pigs, Operation Barbarossa, the Yom Kippur War of 1973, the 2003 Invasion of Iraq, and many other foreign policy decisions suffered from motivated and unmotivated biases in decision making. Ironically, leaders are continually influenced by biases and even repeat the same mistakes.

Conclusion

In this article we have reviewed the major decision-making models that have been used in the literature examining foreign and national security level decision making. To begin, we have spelled out basic tenets of each theory, highlighting key concepts, assumptions, and processes. We then illustrated how each theory has been applied in specific case studies of foreign and national security decision making.

Rational choice theory is the baseline standard against which other theories are often compared. Decision making is purposeful, with decision makers maximizing utility with respect to choice. However, rational choice theory is better adept at explaining decision making outcomes than foreign policy processes.

Cybernetic theory, developed precisely to respond to the rational choice assumption of utility maximization, instead argues that decision makers "satisfice" en route to choice. Policymakers select an alternative that is "good enough." Prospect theory counters rational choice theory assumptions, positing that decision makers evaluate gains and losses not in absolute terms but based on a reference point. As a consequence, decision makers tend to be more risk-averse in the domain of gain and risk-acceptant in the domain of loss. Poliheuristic theory combines elements of rational choice theory with cognitive approaches to decision making. As such, it can account for both the outcomes and processes of foreign and national security decision making. Decision makers use multiple heuristics en route to choice in response to both cognitive constraints and situational factors, such as time pressure, information overload, etc. The theory also emphasizes the political calculations that policymakers often face, arguing that political calculations are often noncompensatory considerations, i.e., other factors cannot compensate, or override, the political dimension. Finally, according to poliheuristic theory, decision makers tend to process information in two stages, with the first stage

focusing on heuristics and cognitive shortcuts, and the second stage being more analytical in nature.

Organizational process and bureaucratic politics models concentrate primarily on the assertion that groups cannot be "rational" in all aspects that rational choice theory prescribes. Instead, groups employ SOPs and/or make decisions based on bureaucratic interests and preferences. Groupthink, as the name implies, argues that individuals participating in group decision making suppress individual evaluations of the merits of a particular course of action. Unlike the other theories presented here, this theory focuses on particular problems in foreign policy decision making, i.e., groupthink is a theory of defective decision making. Thus, its utility may be narrower in application.

Polythink's central premise is that rather than a group erroneously focusing on one particular option, instead, too many policy options and alternatives are presented, which results in defective decision making because the group is unable to engage in effective collective decision making.

ADA is an analytic procedure aimed at understanding and forecasting decisions of national leaders. It consists of two key stages: uncovering the decision matrix of the leader and then uncovering the decision rule and decision "DNA" of leaders.

Analogical reasoning posits that policymakers use analogies from previous successful/unsuccessful decisions and decision-making processes to help guide them as they deal with their own foreign and national security crises. However, decision makers often misapply analogies, which results in problems in the decision-making process as well as for the final outcome. Finally, biases and mistakes are common in political decision making.

We have highlighted many different historical and contemporary cases in which these various theories have been applied. In many instances, different theories have been applied to the same case, in which different facets of either the theory or case are manifest. Often times the manner in which a theory is applied to a particular real-world policy decision is a function of the objectives of the researcher as well as the specific strengths and weaknesses of the theory. Researchers may wish to illuminate the processes that led to a particular decision outcome, identify the decision unit, focus on how members in a decision-making group interacted with one another, how previous decisions influenced policy deliberations, how information processing went "wrong," and how biases influenced the decisions. As discussed above, each of these models focuses on different aspects of decision making and can thus be applied to different features of the decision environment and/or the policymaker himself or herself. Perhaps these considerations help to explain the diversity of decision-making theories and the lack of a central theme in how they are applied to real-world events.

Future applications of decision-making theories in the policy realm may benefit from reconsidering Allison's (1969) seminal approach wherein he applied three different theoretical models to one case, the Cuban Missile Crisis, and compared and contrasted their explanatory value. By so doing, scholars will be better able to examine the unique contributions of each theory in a comparative manner, rather than attempting to do so in isolation of other theoretical considerations.

Steven B. Redd is Associate Professor of Political Science at the University of Wisconsin-Milwaukee. He is a past president of the Foreign Policy Analysis Section of the International Studies Association. He has published articles in numerous scholarly journals including the *American Political Science Review*, the *Journal of Conflict Resolution*, and *International Studies Quarterly*. His research interests focus on foreign policy decision making and U.S. foreign and national security policy.

Alex Mintz Dean of the Lauder School of Government, Diplomacy and Strategy at IDC-Herzliya, and Director of its Program in Political Psychology and Decision Making (POPDM). Professor Mintz is editor-in-chief of the journal *Political Psychology*, and editorial board member of the journals *American Political Science Review*, *International Studies Quarterly*, *Foreign Policy Analysis*, *International Studies Perspective*, *Open Political Science Journal*, and *Advances in Political Psychology*. He also served as Associate Editor of the *Journal of Conflict Resolution*, and as editor of the University of Chicago Press book series in Leadership and Decision Making in International Relations. Prof. Mintz is the 2005 recipient of the Distinguished Scholar Award of the Foreign Policy Analysis section of the International Studies Association (ISA) for distinguished contributions to the field, and the 1993 recipient of the Karl Deutsch Award of the ISA for the most important contribution of any scholar in the world under age of forty to the scientific study of International Relations. Mintz is the author of the widely read book *Understanding Foreign Policy Decision Making* (with Karl DeRouen, Cambridge University Press, 2010) as well as eight other books and edited volumes.

Notes

1. See, e.g., Kahneman and Tversky (1979, 1984); Kahneman, Knetsch, and Thaler (1990, 1991); Kahneman, Slovic, and Tversky (1982); Tversky and Kahneman (1981, 1982a, 1982b, 1986, 1991); Tversky, Slovic, and Kahneman (1990).

2. Mintz and Geva (1997) distinguish between the *adoption* or *acceptance* of alternatives vs. the *rejection* of options. These lead to the utilization of different decision rules.

3. Note that Brulé (2005), McDermott (1992), and Smith (1984/1985) each attempt to explain Carter's decision making in the Iran hostage crisis, albeit from three different decision-making perspectives: poliheuristic theory, prospect theory, and the bureaucratic politics model, respectively.

References

Abelson, Robert P., and Ariel Levi. 1985. "Decision Making and Decision Theory." In *The Handbook of Social Psychology*, Vol. 1, 3rd ed., eds. Gardner Lindzey, and Elliot Aronson. New York, NY: Random House, 231–309.

Allison, Graham T. 1969. "Conceptual Models and the Cuban Missile Crisis." *American Political Science Review* 63: 689–718.

———. 1971. *Essence of Decision: Explaining the Cuban Missile Crisis*. Boston, MA: Little, Brown.

Allison, Graham T., and Morton H. Halperin. 1972. "Bureaucratic Politics: A Paradigm and Some Policy Implications." *World Politics* 24 (Issue Supplement): 40–79.

Anderson, Paul A. 1983. "Decision Making by Objection and the Cuban Missile Crisis." *Administrative Science Quarterly* 28: 201–22.

Astorino-Courtois, Allison, and Brittany Trusty. 2003. "Degrees of Difficulty: The Effect of Israeli Policy Shifts on Syrian Peace Decisions." In *Integrating Cognitive and Rational Theories of Foreign Policy Decision Making*, ed. Alex Mintz. New York, NY: Palgrave Macmillan, 29–53.

Badie, Dina. 2010. "Groupthink, Iraq, and the War on Terror: Explaining US Policy Shift toward Iraq." *Foreign Policy Analysis* 6: 277–96.

Beckner, Lauren Renee. 2012. "Decision-Making during National Security Crises: The Case of the JFK Administration." Master's thesis, Virginia Polytechnic Institute and State University.

Below, Amy. 2008. "Decisions to Ratify the Kyoto Protocol: A Latin American Perspective on Poliheuristic Theory." Ph.D. diss., University of Southern California.

Bendor, Jonathan, and Thomas H. Hammond. 1992. "Rethinking Allison's Models." *American Political Science Review* 86 (2): 301–22.

Biglaiser, Glen, and Karl DeRouen, Jr. 2004. "The Expansion of Neoliberal Economic Reforms in Latin America." *International Studies Quarterly* 48: 561–78.

Billings, Robert S., and Charles F. Hermann. 1998. "Problem Identification in Sequential Policy Decision Making: The Re-Representation of Problems." In *Problem Representation in Foreign Policy Decision Making*, eds. Donald Sylvan, and James F. Voss. Cambridge: Cambridge University Press, 53–79.

Billings, Robert S., and Stephen A. Marcus. 1983. "Measures of Compensatory and Noncompensatory Models of Decision Behavior: Process Tracing Versus Policy Capturing." *Organizational Behavior and Human Performance* 31: 331–52.

Billings, Robert S., and Lisa L. Scherer. 1988. "The Effects of Response Mode and Importance on Decision-Making Strategies: Judgment Versus Choice." *Organizational Behavior and Human Decision Processes* 41: 1–19.

Boettcher, William A., III. 2004. "The Prospects for Prospect Theory: An Empirical Evaluation of International Relations Applications of Framing and Loss Aversion." *Political Psychology* 25: 331–62.

Brulé, David J. 2005. "Explaining and Forecasting Leaders' Decisions: A Poliheuristic Analysis of the Iran Hostage Rescue Decision." *International Studies Perspectives* 6: 99–113.

———. 2008. "The Poliheuristic Research Program: An Assessment and Suggestions for Further Progress." *International Studies Review* 10: 266–93.

Bueno de Mesquita, Bruce. 1981. *The War Trap*. New Haven, CT: Yale University.

———. 1983. "The Costs of War: A Rational Expectations Approach." *American Political Science Review* 77: 347–57.

———. 1984. "Forecasting Policy Decisions: An Expected Utility Approach to Post-Khomeni Iran." *PS* 17: 226–36.

———. 1989. "The Contribution of Expected-Utility Theory to the Study of International Conflict." In *Handbook of War Studies*, ed. Manus I. Midlarsky. Ann Arbor, MI: University of Michigan Press, 143–69.

Bueno de Mesquita, Bruce, and David Lalman. 1990. "Domestic Opposition and Foreign War." *American Political Science Review* 84: 747–65.

———. 1992. *War and Reason*. New Haven, CT: Yale University Press.

Caldwell, Dan. 1977. "Bureaucratic Foreign Policy-Making." *American Behavioral Scientist* 21: 87–110.

Chatagnier, John Tyson, Alex Mintz, and Yair Samban. 2012. "The Decision Calculus of Terrorist Leaders." *Perspectives on Terrorism* VI (4–5) (October 2012): 125–44.

DeRouen, Karl. 2003. "The Decision Not to Use Force at Dien Bien Phu: A Poliheuristic Perspective." In *Integrating Cognitive and Rational Theories of Foreign Policy Decision Making*, ed. Alex Mintz. New York, NY: Palgrave Macmillan, 11–28.

Downs, Anthony. 1994. *Inside Bureaucracy*. Prospect Heights, IL: Waveland Press.

Drezner, Daniel W. 2000. "Ideas, Bureaucratic Politics, and the Crafting of Foreign Policy." *American Journal of Political Science* 44 (4): 733–49.

Fanis, Maria. 2004. "Collective Action Meets Prospect Theory: An Application to Coalition Building in Chile, 1973–1975." *Political Psychology* 25: 363–88.

Farnham, Barbara. 1992. "Roosevelt and the Munich Crisis: Insights from Prospect Theory." *Political Psychology* 13: 205–35.

Fearon, James D. 1995. "Rationalist Explanations for War." *International Organization* 49: 379–414.

Feldman, Martha S. 1989. *Order Without Design: Information Production and Policy Making*. Stanford, CA: Stanford University Press.

Fiske, Susan T., and Shelley E. Taylor. 1991. *Social Cognition*, 2nd ed. New York, NY: McGraw-Hill.

Ford, J. Kevin, Neal Schmitt, Susan L. Schechtman, Brian M. Hults, and Mary L. Doherty. 1989. "Process Tracing Methods: Contributions, Problems, and Neglected Research Questions." *Organizational Behavior and Human Decision Processes* 43: 75–117.

Forman, Ernest H., and Mary Ann Selly. 2001. *Decision by Objectives: How to Convince Others That You Are Right*. River Edge, NJ: World Scientific.

Freedman, Lawrence, and Efraim Karsh. 1991. "How Kuwait Was Won: Strategy in the Gulf War." *International Security* 16: 5–41.

Frisch, Deborah. 1993. "Reasons for Framing Effects." *Organizational Behavior and Human Decision Processes* 54: 399–429.

George, Alexander. 1980. *Presidential Decisionmaking in Foreign Policy: The Effective Use of Information and Advice*. Boulder, CO: Westview Press.

Geva, Nehemia, Steven B. Redd, and Alex Mintz. 2000. "Evolving vs. Static Decision Dimensions and Decision Processes: An Experimental Assessment of Poliheuristic Propositions." Monograph. Texas A&M University.

Geva, Nehemia, and J. Mark Skorick. 1999. "Information Inconsistency and the Cognitive Algebra of Foreign Policy Decision Making." *International Interaction* 25: 333–62.

Halperin, Morton H. 1972. "The Decision to Deploy the ABM: Bureaucratic and Domestic Politics in the Johnson Administration." *World Politics* 25 (1): 62–95.

Hart, Paul 't. 1994. *Groupthink in Government: A Study of Small Groups and Policy Failure*. Baltimore, MD: Johns Hopkins University Press.

Hermann, Charles F., Nehemia Geva, and Belinda Bragg. 2001. "Group Dynamics in Conflict Management Strategies: An Experimental Analysis of the Effects on Foreign Policy Decision-Making." Paper presented at the 2001 Hong Kong Convention of International Studies, July 25–27, 2001, Hong Kong.

Herrmann, Richard. 1988. "The Empirical Challenge of the Cognitive Revolution: A Strategy for Drawing Inferences about Perceptions." *International Studies Quarterly* 32: 175–203.

Hogarth, Robin M. 1987. *Judgement and Choice: The Psychology of Decision*, 2nd ed. New York, NY: John Wiley and Sons.

Hollis, Martin, and Steve Smith. 1986. "Roles and Reasons in Foreign Policy Decision Making." *British Journal of Political Science* 16: 269–86.

Holsti, Ole. 1972. "Review of *Essence of Decision*." *Western Political Quarterly* 25: 136–40.

James, Patrick, and John R. Oneal. 1991. "The Influence of Domestic and International Politics on the President's Use of Force." *Journal of Conflict Resolution* 35: 307–32.

James, Patrick, and Enyu Zhang. 2005. "Chinese Choices: A Poliheuristic Analysis of Foreign Policy Crises, 1950–1996." *Foreign Policy Analysis* 1: 31–54.

Janis, Irving L. 1982. *Groupthink: Psychological Studies of Policy Decisions and Fiascoes*, 2nd ed. Boston, MA: Houghton Mifflin.

Jervis, Robert. 1976. *Perception and Misperception in International Politics*. Princeton, NJ: Princeton University Press.

———. 1988. "War and Misperception." *Journal of Interdisciplinary History* 18: 675–700.

———. 1989. *The Meaning of the Nuclear Revolution*. Ithaca, NY: Cornell University Press.

———. 1991. "Domino Beliefs and Strategic Behavior." In *Dominoes and Bandwagons: Strategic Beliefs and Great Power Competition in the Eurasian Rimland*, eds. Robert Jervis, and Jack Snyder. New York, NY: Oxford University Press, 20–50.

———. 1992. "Political Implications of Loss Aversion." *Political Psychology* 13: 187–204.

Kahneman, Daniel, Jack L. Knetsch, and Richard H. Thaler. 1990. "Experimental Tests of the Endowment Effect and the Coase Theorem." *Journal of Political Economy* 98: 1325–48.

———. 1991. "Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias." *Journal of Economic Perspectives* 5: 193–206.

Kahneman, Daniel, Dan Lovallo, and Olivier Sibony. 2011. "The Big Idea: Before You Make That Decision. . . ." *Harvard Business Review* June: 51–60.

Kahneman, Daniel, Paul Slovic, and Amos Tversky, eds. 1982. *Judgment Under Uncertainty: Heuristics and Biases*. Cambridge, UK: Cambridge University Press.

Kahneman, Daniel, and Amos Tversky. 1979. "Prospect Theory: An Analysis of Decision Under Risk." *Econometrica* 47: 263–91.

———. 1984. "Choices, Values, and Frames." *American Psychologist* 39: 341–50.

Kasza, Gregory. 1987. "Bureaucratic Politics in Radical Military Regimes." *American Political Science Review* 81 (3): 851–72.

Khong, Yuen Foong. 1992. *Analogies at War: Korea, Munich, Dien Bien Phu, and the Vietnam Decisions of 1965*. Princeton, NJ: Princeton University Press.

Kim, Woosang, and Bruce Bueno de Mesquita. 1995. "How Perceptions Influence the Risk of War." *International Studies Quarterly* 39: 51–65.

Kinne, Brandon J. 2005. "Decision Making in Autocratic Regimes: A Polihuristic Perspective." *International Studies Perspectives* 6: 114–28.

Krasner, Steven. 1972. "Are Bureaucracies Important? (or Allison Wonderland)." *Foreign Policy* 7: 159–79.

Lamb, Chris. 1985. "Belief Systems and Decision Making in the Mayaguez Crisis." *Political Science Quarterly* 99: 681–702.

Levy, Jack S. 1992a. "An Introduction to Prospect Theory." *Political Psychology* 13: 171–86.

———. 1992b. "Prospect Theory and International Relations: Theoretical Applications and Analytical Problems." *Political Psychology* 13: 283–310.

———. 1997a. "Prospect Theory and the Cognitive-Rational Debate." In *Decisionmaking on War and Peace: The Cognitive-Rational Debate*, eds. Nehemia Geva, and Alex Mintz. Boulder, CO: Lynne Rienner Press, 33–50.

———. 1997b. "Prospect Theory, Rational Choice, and International Relations." *International Studies Quarterly* 41: 87–112.

Maoz, Zeev. 1986. "Multiple Paths to Choice: An Approach for the Analysis of Foreign Policy Decision Making." In *Text Analysis Procedures for the Study of Decision Making*, eds. Irmtraud N. Gallhofer, Willem E. Saris, and M. Melman. Amsterdam, Netherlands: Sociometric Research Foundation, 69–96.

———. 1990. "Framing the National Interest: The Manipulation of Foreign Policy Decisions in Group Settings." *World Politics* 43: 77–110.

———. 1997. "Decisional Stress, Individual Choice, and Policy Outcomes: The Arab-Israeli Conflict." In *Decisionmaking on War and Peace: The Cognitive-Rational Debate*, eds. Nehemia Geva, and Alex Mintz. Boulder, CO: Lynne Rienner, 163–81.

March, James G. 1986. "Bounded Rationality, Ambiguity, and the Engineering of Choice." In *Rational Choice*, ed. Jon Elster. New York, NY: New York University Press, 142–70.

Markus, Hazel, and R. B. Zajonc. 1985. "The Cognitive Perspective in Social Psychology." In *The Handbook of Social Psychology*, Vol. 1, 3rd ed., eds. Gardner Lindzey, and Elliot Aronson. New York, NY: Random House, 137–230.

McDermott, Rose. 1992. "Prospect Theory in International Relations: The Iranian Hostage Rescue Mission." *Political Psychology* 13: 237–63.

———. 2004. "Prospect Theory in Political Science: Gains and Losses from the First Decade." *Political Psychology* 25: 289–312.

McQueen, Alison. 2005. "A Groupthink Perspective on the Invasion of Iraq." *International Affairs* 14: 53–79.

Mercer, Jonathan. 2005. "Prospect Theory and Political Science." *Annual Review of Political Science* 8: 1–21.

Mintz, Alex. 1993. "The Decision to Attack Iraq: A Noncompensatory Theory of Decision Making." *Journal of Conflict Resolution* 37: 595–618.

———. 2004. "How Do Leaders Make Decisions? A Poliheuristic Perspective." *Journal of Conflict Resolution* 48: 3–13.

———. 2005. "Applied Decision Analysis: Using Poliheuristic Theory to Explain and Predict Foreign Policy and National Security Decisions." *International Studies Perspectives* 6: 94–98.

Mintz, Alex, John Tyson Chatagnier, and David Brulé. 2006. "Being bin Laden: An Applied Decision Analysis Procedure for Analyzing and Predicting Terrorists' Decisions." In *Suicide Terrorism: Root Causes of the Culture of Death*, ed. Ami Pedahzur. London: Taylor & Francis, 152–78.

Mintz, Alex, and Karl DeRouen, Jr. 2010. *Understanding Foreign Policy Decision Making*. New York, NY: Cambridge University Press.

Mintz, Alex, and Nehemia Geva. 1997. "The Poliheuristic Theory of Foreign Policy Decisionmaking." In *Decisionmaking on War and Peace: The Cognitive-Rational Debate*, eds. Nehemia Geva, and Alex Mintz. Boulder, CO: Lynne Rienner, 81–101.

Mintz, Alex, Nehemia Geva, Steven B. Redd, and Amy Carnes. 1997. "The Effect of Dynamic and Static Choice Sets on Political Decision Making: An Analysis Using the Decision Board Platform." *American Political Science Review* 91: 553–66.

Mintz, Alex, Saul Mishal, and Nadav Morag. 2005. "Victims of Polythink? The Israeli Delegation to Camp David 2000." UN studies, Yale University.

Mintz, Alex, and Steven B. Redd. 2003. "Framing Effects in International Relations." *Synthese* 135: 193–213.

Mintz, Alex, and Carly Wayne. 2014. *The Polythink Syndrome: 9/11 and the Challenges of 21st Century American Foreign Policy* (forthcoming).

Monroe, Kristen R. 1991. "The Theory of Rational Action: What Is It? How Useful Is It for Political Science?" In *Political Science: Looking to the Future*, ed. William J. Crotty. Evanston, IL: Northwestern University Press.

Morgan, T. Clifton, and Kenneth N. Bickers. 1992. "Domestic Discontent and the External Use of Force." *Journal of Conflict Resolution* 36: 25–52.

Morrow, James D. 1985. "A Continuous-Outcome Expected Utility Theory of War." *Journal of Conflict Resolution* 29: 473–502.

———. 1994. "Alliance, Credibility, and Peacetime Costs." *Journal of Conflict Resolution* 38: 270–97.

Ostrom, Charles W., and Brian L. Job. 1986. "The President and the Political Use of Force." *American Political Science Review* 80: 541–66.

Payne, John W. 1976. "Task Complexity and Contingent Processing in Decision Making: An Information Search and Protocol Analysis." *Organizational Behavior and Human Performance* 16: 366–87.

Payne, John W., James R. Bettman, and Eric J. Johnson. 1988. "Adaptive Strategy Selection in Decision Making." *Journal of Experimental Psychology: Learning, Memory, and Cognition* 14: 534–52.

———. 1993. *The Adaptive Decision Maker*. Cambridge, UK: Cambridge University Press.

Pollack, Mark A. 2007. "Rational Choice and EU Politics." In *Handbook of European Union Politics*, eds. Knud Erik Jorgensen, Mark Pollack, and Ben J. Rosamond. New York, NY: Sage, 31–56.

Redd, Steven B. 2005. "The Influence of Advisers and Decision Strategies on Foreign Policy Choices: President Clinton's Decision to Use Force in Kosovo." *International Studies Perspectives* 6: 129–50.

Roman, Peter J., and David W. Tarr. 1998. "The Joint Chiefs of Staff: From Service Parochialism to Jointness." *Political Science Quarterly* 113 (1): 91–111.

Rosenberg, Shawn W. 1995. "Against Neoclassical Political Economy; A Political Psychological Critique." *Political Psychology* 16: 99–136.

Rourke, Francis. 1972. "Review of *Essence of Decision*." *Administrative Science Quarterly* 71: 431–43.

Russo, J. Edward, and Barbara Anne Dosher. 1983. "Strategies for Multiattribute Binary Choice." *Journal of Experimental Psychology: Learning, Memory, and Cognition* 9: 676–96.

Sage, Andrew P. 1990. "Human Judgment and Decision Rules." In *Concise Encyclopedia of Information Processing in Systems and Organizations*, ed. Andrew P. Sage. New York, NY: Pergamon Press, 232–44.

Sandal, Nukhet A., Enyu Zhang, Carolyn C. James, and Patrick James. 2011. "Poliheuristic Theory and Crisis Decision Making: A Comparative Analysis of Turkey with China." *Canadian Journal of Political Science* 44: 27–57.

Sathasivam, Kanishkan. 2003. " 'No Other Choice': Pakistan's Decision to Test the Bomb." In *Integrating Cognitive and Rational Theories of Foreign Policy Decision Making*, ed. Alex Mintz. New York, NY: Palgrave Macmillan, 55–76.

Scheeringa, Daniel. 2010. "Was the Decision to Invade Iraq and the Failure of Occupation a Case of Groupthink?" Master's thesis, Virginia Polytechnic Institute and State University.

Simon, Herbert A. 1955. "A Behavioral Model of Rational Choice." *Quarterly Journal of Economics* 69: 99–118.

———. 1957. *Models of Man*. New York, NY: John Wiley.

———. 1959. "Theories of Decision Making in Economics." *American Economic Review* 49: 253–83.

———. 1990. "Alternative Visions of Rationality." In *Rationality in Action: Contemporary Approaches*, ed. Paul K. Moser. Cambridge, UK: Cambridge University Press, 189–204.

———. 1992. "Decision Making and Problem Solving." In *Decision Making: Alternatives to Rational Choice Models*, ed. Mary Zey. Newbury Park, CA: Sage Publications, 32–53.

Smith, Steve. 1984/5. "Policy Preferences and Bureaucratic Position: The Case of the American Hostage Rescue Mission." *International Affairs* 61: 9–25.

Stein, Janice Gross, and David A. Welch. 1997. "Rational and Psychological Approaches to the Study of International Conflict: Comparative Strengths and Weaknesses." In *Decisionmaking on War and Peace: The Cognitive-Rational Debate*, eds. Nehemia Geva, and Alex Mintz. Boulder, CO: Lynne Rienner, 51–77.

Steinbruner, John D. 1974/2002. *The Cybernetic Theory of Decision: New Dimensions of Political Analysis*. Princeton, NJ: Princeton University Press.

Suedfeld, Peter, and Philip E. Tetlock. 1992. "Psychological Advice about Political Decision Making: Heuristics, Biases, and Cognitive Defects." In *Psychology and Social Policy*, eds. Peter Suedfeld, and Philip E. Tetlock. New York, NY: Hemisphere Publishing, 51–70.

Szalai, Andras. 2008. "Rational Choice Theory in Early Cold War US Defense Policy—The Role of 'Defense Rationalists.'" Monograph. Central European University.

Taber, Charles S. 1998. "The Interpretation of Foreign Policy Events: A Cognitive Process Theory." In *Problem Representation in Foreign Policy Decision Making*, eds. Donald Sylvan, and James F. Voss. Cambridge: Cambridge University Press, 29–52.

Taylor-Robinson, Michelle M., and Steven B. Redd. 2003. "Framing and the Poliheuristic Theory of Decision: The United Fruit Company and the 1954 U.S.-Led Coup in Guatemala." In *Integrating Cognitive and Rational Theories of Foreign Policy Decision Making*, ed. Alex Mintz. New York, NY: Palgrave Macmillan, 77–100.

Tetlock, Philip E. 1999. "Theory Driven Reasoning about Plausible Pasts and Probable Futures in World Politics: Are We Prisoners of Our Preconceptions?" *American Journal of Political Science* 43: 335–66.

Thaler, Richard H., and Cass R. Sunstein. 2008. *Nudge: Improving Decisions About Health, Wealth, and Happiness*. New Haven, CT: Yale University Press.

Tversky, Amos, and Daniel Kahneman. 1981. "The Framing of Decisions and the Psychology of Choice." *Science* 211: 453–58.

———. 1982a. "Judgments Of and By Representativeness." In *Judgment Under Uncertainty: Heuristics and Biases*, eds. Daniel Kahneman, Paul Slovic, and Amos Tversky. Cambridge, UK: Cambridge University Press, 84–100.

———. 1982b. "Judgment Under Uncertainty: Heuristics and Biases." In *Judgment Under Uncertainty: Heuristics and Biases*, eds. Daniel Kahneman, Paul Slovic, and Amos Tversky. Cambridge, UK: Cambridge University Press, 3–20.

———. 1986. "Rational Choice and the Framing of Decisions." *Journal of Business* 59: S251–84.

———. 1991. "Loss Aversion in Riskless Choice: A Reference Dependent Model." *Quarterly Journal of Economics* 106: 1039–61.

Tversky, Amos, Paul Slovic, and Daniel Kahneman. 1990. "The Causes of Preference Reversal." *American Economic Review* 80: 204–17.

Vertzberger, Yaacov Y. I. 1990. *The World in Their Minds: Information Processing, Cognition, and Perception in Foreign Policy Decisionmaking*. Stanford, CA: Stanford University Press.

Wagner, R. Harrison. 1974. "Dissolving the State: Three Recent Perspectives on International Relations." *International Organization* 28: 435–66.

Walker, Stephen G., and George L. Watson. 1989. "Groupthink and Integrative Complexity in British Foreign Policy-Making: The Munich Case." *Cooperation and Conflict* 24: 199–212.

Weyland, Kurt. 1996. "Risk Taking in Latin American Economic Restructuring: Lessons from Prospect Theory." *International Studies Quarterly* 40: 185–208.

Winograd Committee. 2007. Israel Ministry of Foreign Affairs. April 30, 2007. http://www.mfa. gov.il/MFA/Government/Communiques/2007/Winograd+Inquiry+Commission+submits+Interim+ Report+30-Apr-2007.htm. Accessed March 15, 2013.

Wittman, Donald. 1979. "How a War Ends: A Rational Model Approach." *Journal of Conflict Resolution* 23: 743–63.

Zey, Mary. 1992. *Decision Making: Alternatives to Rational Choice Models*. Newbury Park, CA: Sage Publications.