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Loss Aversion, Framing
Effects, and International
Conflict

Perspectives from Prospect Theory

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The study of international conflict has changed substantially in the decade since the publication of *The Handbook of War Studies* (Midlarsky 1989b), and the result has been an unmistakable improvement in the quality of theory and empirical research (Levy 1998). Some new intellectual trends in the field have originated in response to the end of the cold war, the collapse of the Soviet Union, the rise of ethnonational conflicts, and the spread of global capitalism and democracy. Other new lines of research have grown out of autonomous analytical developments.

One example of the latter is the application of prospect theory to international relations. Developed by social psychologists (Kahneman and Tversky 1979) in an attempt to integrate experimental evidence of descriptive inaccuracies in expected-utility theory into an alternative theory of risky choice, prospect theory has been widely applied in a number of fields, including organizational theory, management science, consumer economics, and insurance and investment behavior. Since the early 1990s it has begun to have an impact on the study of international relations.¹

Prospect theory suggests a rich set of hypotheses about the foreign policy behavior of states and the strategic interaction between states in the international system. It also raises a number of difficult conceptual and methodological issues that must be overcome before these hypotheses can be validated empirically. I have examined some of these problems

elsewhere (Levy 1997), and it is important to read this essay in that context, but here I focus primarily on the theoretical implications of prospect theory for various aspects of international conflict.

I begin with a brief survey of some of the most important behavioral deviations from the predictions of expected-utility theory and describe how prospect theory attempts to integrate these patterns into an alternative theory of choice under conditions of risk. I then turn to a lengthy discussion of the implications of the key prospect theory concepts of reference dependence, framing, loss aversion, and variable risk orientation for state security policies and for interstate bargaining.

Summary of Prospect Theory

Prospect theory is inductive rather than deductive in its origins. The dominance of expected-utility theory as a normative theory of choice under conditions of risk led social psychologists and then experimental economists to undertake a series of experimental tests of the descriptive validity of the theory.² These experiments have repeatedly demonstrated a series of violations of the basic axioms of expected-utility theory. This has led scholars to attempt to integrate these findings into a more descriptively accurate theory of risky choice. One of the most prominent of these "behavioral decision theories," and the one that has attracted the most attention in political science, is prospect theory.

The experimental evidence suggests a number of ways in which people do not behave according to the assumptions and predictions of expected-utility theory. First, contrary to the postulate of an individual utility function that is defined over levels of assets, people appear to be more sensitive to changes in assets than to net asset levels, to *gains* and *losses* from a *reference point* rather than to levels of wealth and welfare (Kahneman and Tversky 1979, 277). This *reference dependence* (Tversky and Kahneman 1991, 1039) is the central analytic assumption of prospect theory.

Reference dependence is critically important because of the tendency for people to respond differently to gains and to losses—they overvalue losses relative to comparable gains, so that the pain of losses exceeds the pleasure from gains (Kahneman and Tversky 1979; Tversky and Kahneman 1986, 1991). This is known as *loss aversion*. As Jimmy Connors once said, "I hate to lose more than I like to win" (Levy 1992a, 175).³

Because of loss aversion, people tend to value what they have more than comparable things that they do not have, and the psychological cost of relinquishing a good is greater than the psychological benefit of acquiring it. This is the *endowment effect* (Thaler 1980, 43–47). People often refuse to sell an item for a price at which they would not have considered purchasing that item in the first place, so that selling prices tend to exceed buying prices, often by a substantial amount (Knetsch and Sinden 1984; Kahneman, Knetsch, and Thaler 1990, 1336; 1991; Tversky and Kahneman 1991; Camerer 1995, 665–70).

The asymmetry between losses and gains also affects *risk orientation*.⁴ People tend to be risk averse in choices among gains but risk acceptant with respect to losses. Given a choice between \$40 for certain and a 50/50 chance of getting \$0 or \$100, over 70 percent of subjects choose the certain \$40. But given a choice between a certain loss of \$40 and a 50/50 chance of losing \$0 or \$100, roughly 70 percent take the risky gamble. That is, in choices involving possible losses people will take risks in the hope of avoiding loss, even though the result may be an even greater loss, and even though the expected value of the gamble is worse—and sometimes considerably worse—than the value of the certain loss.

Risk aversion for gains and risk seeking for losses imply that value functions are concave in the domain of gains and convex in the domain of losses, with a *reflection effect* around the reference point (Kahneman and Tversky 1979, 268). This pattern of risk orientation, represented by an S-shaped value function, is repeatedly found for a variety of individuals and situations.

Given the asymmetry of gains and losses around a reference point, how actors define the reference point can have a critical effect on the choices they make. A change in reference point can result in a change in preferences (*preference reversal*) even if the values and probabilities associated with outcomes remain the same (Kahneman and Tversky 1979; Tversky and Kahneman 1986; Roth 1995, 68–75; Camerer 1995, 652–65). The identification of the reference point is known as *framing*, and a change in preference and choice as a result of a change in frame is a *framing effect*.

One striking example of framing effects can be found in the hypothetical medical example offered by Tversky and Kahneman (1986, S260):

Imagine that the U.S. is preparing for the outbreak of an unusual Asian disease, which is expected to kill 600 people. Two alternative programs to combat the disease have been proposed. Assume

that the exact scientific estimates of the consequences of the programs are as follows:

(Survival frame)

If Program A is adopted, 200 people will be saved.

If Program B is adopted, there is 1/3 probability that 600 people will be saved, and 2/3 probability that no people will be saved.

The identical description of the situation is given to a second group of subjects, but the same information about the alternative treatment programs is framed differently.

(Mortality frame)

If Program C is adopted 400 people will die.

If Program D is adopted there is a 1/3 probability that nobody will die, and 2/3 probability that 600 people will die.

In the survival frame 72 percent ($N = 152$) of the subjects preferred Program A, indicating a risk-averse preference for saving 200 with certainty over a gamble with the same expected value. In the mortality frame ($N = 155$), however, 78 percent preferred Program D, indicating a risk-acceptant preference for a gamble in the hope of preventing 400 people from certain death. The only difference in the choice problems faced by the two groups is the framing of the outcomes in terms of the number of lives saved or lost.

Reference dependence and framing effects are extremely important for prospect theory. Preference reversals induced by changes in frames rather than by changes in subjective utilities or probabilities are difficult to reconcile with expected-utility theory or with rational choice theories more generally because they violate the fundamental assumption that logically identical choice problems should yield identical results. Evidence that behavior varies depending on whether the glass is seen as half-empty or half-full does not easily lend itself to a rational choice explanation (Tversky and Kahneman 1986, S252–57; Levy 1997, 92–93).

In the “Asian flu” example, as in most laboratory studies of framing, the experimenter manipulates the reference point in a way that she can be relatively confident that subjects will not “reframe” the problem they face; consequently, any difference in behavior can be traced to the manipulated framing effects. Similarly, there may be many simple choice problems in the real world in which the framing of the reference point is for all practical purposes determined by the situation.

In static situations that involve a well-defined status quo, for example, actors usually frame choice problems around the status quo. Thus Tversky and Kahneman (1991, 1046–47) argue that “the reference state usually corresponds to the decision maker’s current position.” They concede that this is not always the case, however, and that expectations, aspiration levels, social norms, and social comparisons quite distinct from the status quo can also influence the framing of the reference point.

Some applications of prospect theory ignore this important qualification and assume that the status quo always serves as the reference point. If this were true, prospect theory would lose much of its distinctiveness, for the primary value-added of prospect theory over expected-utility theory lies in reference dependence and framing effects. Framing is a *variable*, and most important prospect theory hypotheses involve the explanation of variations in outcomes as a function of variations in the framing of the reference point. The tendency to examine cases in which actors frame their reference points around the status quo is a limitation of many applications of prospect theory to international relations (e.g., McDermott 1998).

Framing around a reference point other than the status quo is particularly likely in dynamic situations in which there is no stable status quo to serve as an obvious focal point. In a situation that involves a sequence of successive choices rather than a single choice, for example, it is not clear whether an actor will define her reference point in terms of her asset position at the beginning of the series of choices or with respect to her current asset position after a series of actions, or if this is affected by whether the outcomes of each decision involve gains or losses.

There is substantial experimental evidence that people adjust to gains more rapidly than to losses. They “renormalize” their reference points after gains but not after losses, and they do so very quickly. This *instant endowment effect* (Kahneman, Knetsch, and Thaler 1990, 1342) has extremely important implications. It leads to the prediction that after a series of gains individuals will frame around those gains (the new status quo), regard any subsequent setback as a loss rather than as a foregone gain, overweight that loss, and engage in risk-seeking behavior to maintain their cumulative gains against that loss.

After a series of losses, however, individuals will not adjust to the new situation but rather continue to frame around the old reference point. They will perceive any chance of “improving” their position to a point that still falls short of the original reference point as a loss, and they will

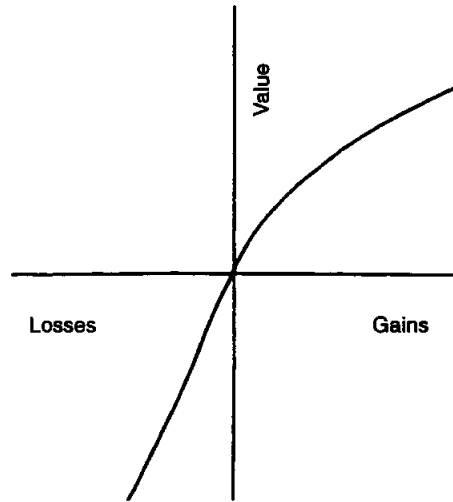


FIGURE 1. A prospect theory value function

engage in risk-seeking behavior to eliminate those losses and return to the reference point.

Most applications of prospect theory to international relations have focused on loss aversion, framing, and the reflection effect. Another important finding is that individual choice behavior demonstrates a *non-linear response to probabilities*, contrary to the linear combination of utilities and probabilities posited by expected-utility theory. People overweight outcomes that are certain relative to outcomes that are merely probable (the *certainty effect*). They tend to overweight small probabilities and to underweight moderate and high probabilities.⁵ In other words, people tend to give more weight to the utility of a possible outcome than to its probability of occurrence as long as probabilities are not small. If probabilities are extremely small, however, people are quite unpredictable in their behavior. Some buy insurance against rare catastrophes, for example, while others do not (Kahneman and Tversky 1979; Camerer 1995, 620–22).

Prospect theory attempts to combine these observed violations of expected-utility theory into a single integrated theory of choice. Toward this end Kahneman and Tversky (1979) distinguish two phases in the choice process. In the *editing phase* the actor identifies the reference point, the available options, the possible outcomes, and the value and

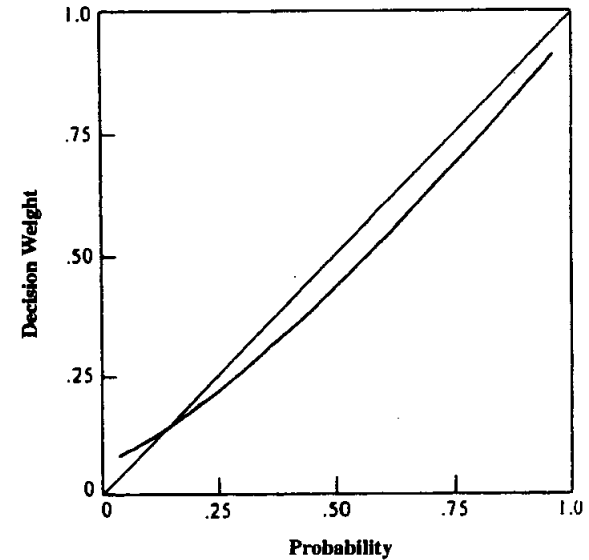


FIGURE 2. A probability weighting function

probability of each of these outcomes. In the *evaluation phase* the actor combines the values of possible outcomes (as reflected in an S-shaped *value function*, illustrated in fig. 1) with their weighted probabilities (as reflected in the *probability weighting function*, illustrated in fig. 2) and then maximizes over the product (the “prospective utility”).

It is important to note that attitudes toward risk are determined by the combination of the S-shaped value function and the probability weighting function and not by the value function alone. This combination usually generates risk aversion for gains and risk acceptance for losses, but the overweighting of small probabilities can lead to a reversal of risk propensities under certain conditions, depending on the precise shapes of the two functions (Kahneman and Tversky 1979; Levy 1992a, 183–84). This is illustrated by gambling (risk acceptance for gains) and by the purchase of insurance (which involves taking a certain loss in the form of an insurance premium in order to avoid the risk of a larger loss).

There are some serious conceptual and methodological problems that need to be overcome before we can test these hypotheses against the empirical evidence or utilize prospect theory as a reliable framework for explanation in international politics. I analyze these in detail elsewhere

(Levy 1997; see also Morrow 1997), but a brief summary would be useful here. One analytical problem derives from the fact that prospect theory is a theory of individual choice, whereas international relations involves the strategic interaction of states (and other actors). We need a theory that explains how individual-level preferences and frames get aggregated or transformed into the collective preferences and frames of states. We also need a theory that explains how the choices of two actors interact in a strategic setting—one that subsumes the decision-theoretic propositions of prospect theory into a game-theoretic framework.

At the methodological level, we cannot begin to make progress unless we can identify actors' reference points independently of the behavior that we are trying to explain. We cannot infer an actor's reference point from his or her behavior and then use framing effects based on that reference point to explain that same behavior.⁶ It is also necessary to rule out the alternative explanation that actors' choices are determined not by loss aversion, framing effects, and the reflection of risk orientations around the reference point, but instead by actors' calculations that the expected utility of the chosen option was greater than the expected utility of the alternatives.

Implications for Foreign Policy Behavior

Prospect theory and the descriptive findings upon which it is based generate a rich set of hypotheses about the impact of framing effects, loss aversion, and variable risk orientation on state foreign policy behavior.⁷ One proposition concerns the greater tendency toward status quo choices than expected-utility theory would predict. This *status quo bias* has been observed in both experimental research and field studies of consumer and investment behavior (Samuelson and Zeckhauser 1988; Knetsch and Sinden 1984; Hartman, Doane, and Woo 1991).

We can explain this pattern in terms of loss aversion and the endowment effect. If an individual frames a choice problem around the existing status quo, she or he will treat the costs of moving away from the status quo as a loss and the benefits of moving away from the status quo as a gain, overweight the former relative to the latter, and consequently demonstrate a bias toward remaining at the status quo.⁸

The status quo bias is reflected in the common observation that states appear to make greater efforts to preserve the status quo against a

threatened loss than to improve their position by a comparable amount. They are sometimes willing to fight to defend the same territory that they would not have been willing to fight to acquire in the first place. This is illustrated by Ross's (1984, 247) argument that Soviet leaders were willing to engage in the "use of decisive and perhaps risky action far more readily for *defending* as opposed to *extending* Soviet gains."

These observations are consistent with "defensive realism," which essentially argues that "states maximize security by aiming to preserve the status quo in the international system" (Labs 1997, 9; see also Posen 1984, 69; Snyder 1991). This perspective is the object of Schweller's (1996) critique of "neorealism's status quo bias." Though Schweller (1996, 99, 106) does not explicitly refer to prospect theory, the connection is striking when he argues that "states value what they possess more than what they covet," and that "rational states do not seek relative gains so much as avoid relative losses."

Other variables, including reputational and domestic political considerations, might explain the tendency toward status quo choices in international politics. These explanations are not necessarily inconsistent with prospect theory, however, for reputational and domestic political interests may themselves be influenced by loss aversion. Political leaders may be more concerned to prevent a decline in their country's (or their own) reputation or credibility than to increase it by a comparable amount, and more worried by the costs of falling dominoes than hopeful about the gains from others bandwagoning in their favor (Jervis 1991). It is also conceivable that domestic publics tend to punish their political leaders more for strategic or economic losses than to reward them for comparable gains. The conventional wisdom among students of American politics, for example, is that political candidates are more concerned to avoid alienating key constituencies than to strengthen support among those groups.

Thus there may be loss/gain asymmetries in the impact of both reputational interests and domestic politics on foreign policy behavior. It is important to know, however, where in the causal chain loss aversion has an impact. Are political leaders themselves prone to loss aversion in their evaluation of the reputational or domestic consequences of certain outcomes? Or does loss aversion occur earlier in the causal chain and have a more indirect impact, affecting the reaction of domestic and foreign audiences (as anticipated by political leaders) but not the calculations of political leaders themselves? Or does loss aversion affect both leaders and

their audiences and thus have a “double whammy” effect? These causal paths are analytically distinct, but they cannot be empirically differentiated by looking at outcomes alone.

Nincic (1997) provides some evidence for the hypothesized asymmetry in public support for political leaders in his study of the impact of American military interventions abroad on the president’s domestic support levels. Nincic focuses on justifications offered by the president for the active use of U.S. military force abroad, which he categorizes as either “protective” of existing interests or “promotive” in the sense of enhancing American interests. Nincic examines a set of 18 American military interventions and measures presidential justifications through a content analysis of public statements. He finds that the increases in presidential popularity are six percentage points greater for interventions framed as protective than for those framed as promotive.

Nincic (1997) also examines the likelihood of congressional support (in the form of a congressional resolution) for military interventions as a function of presidential framing of those interventions as protective or promotive. Again he finds a difference, with the odds of the president securing a resolution in support of a protective intervention being about five times greater than for a promotive intervention. Nincic (1997) concludes that “the U.S. public and Congress are more willing to reward the president for foreign policy actions intended to preserve or restore a situation that had already been attained than for those meant to pursue a new gain or to create a new outcome.”⁹

If all states defined their reference point in terms of the status quo and if the status quo were basically acceptable and unchanging, then loss aversion and the status quo bias would lead states to be excessively cautious in attempting to improve their positions. Consequently, there would be fewer challenges to the status quo than we might expect on the basis of expected-value calculations, and the status quo bias would reinforce stability in international politics.¹⁰

The problem is that political leaders do not always frame around the status quo. They sometimes frame around an expectation or aspiration level. If actors define their reference point above the status quo, they will evaluate the status quo as a loss, recognize that inaction will result in a certain loss, and tend toward risky gambles in the hope of eliminating a certain loss but at the risk of incurring a larger loss.¹¹

This suggests that the concept of a status quo bias is technically misspecified. It is really a *reference point bias* (Levy 1996a), a greater ten-

dency to move toward the reference point than is predicted by expected-value calculations. The status quo bias occurs only when actors define the status quo as their reference point. Whereas the hypothesized status quo bias is generally stabilizing in the sense that it reinforces the status quo, the reference point bias may be destabilizing whenever actors frame their reference points above the status quo.

Consider the situation immediately after an actor has suffered a loss—whether territorial, reputational, or domestic political. After suffering losses political leaders have a tendency not to renormalize their reference point but instead to gamble in the hope of eliminating those losses and returning to the reference point, even at the risk of suffering a larger loss.

One illustration is the 1982 Falklands/Malvinas crisis. Argentine military leaders, faced with serious domestic economic and political problems and with a status quo defined by continued British occupation of the Malvinas, adopted a potentially risky strategy of attempting to seize the Malvinas by force rather than continue negotiations with Britain. The hypothesis that Argentine leaders framed their reference point around an aspiration level defined by Argentine control of the Malvinas gains additional credibility from the fact that the junta’s deadline for recovering the islands was the end of 1982, which happened to be the very symbolic 150th anniversary of the Argentine loss of the islands (Levy and Vakili 1992).

Another example comes from U.S. decision making in the 1962 Cuban missile crisis. There is substantial evidence that President Kennedy framed his reference point in terms of zero Soviet offensive missiles in Cuba, that he perceived the existence of Soviet missiles in Cuba as a loss from this long-standing expectation level, and that the issue was not whether to remove the missiles but how (Whyte and Levi 1994, 248–51). Kennedy recognized that a strategy of compellence to induce the Soviets to remove the missiles would be risky, but he was willing to take these risks to avoid the certain loss that would follow from inaction.

This interpretation gains added support from the fact that Kennedy apparently believed that the best he could do was break even and that a successful outcome of the crisis would not so much bring gains but restore the situation to the status quo ex ante. As Sorensen (1965, 680; cited in Whyte and Levi 1994, 250) writes, “not one of us at any time believed that any of the choices before us could bring anything but either prolonged danger or fighting. . . .” It is true, however, that in his choice

among alternative means of removing the missiles JFK and his advisers opted for a naval blockade strategy that was less risky than alternative strategies.

Risk-acceptant behavior to recover losses also relates to the sunk cost phenomenon. Loss aversion and the failure to renormalize the reference point after losses help to explain the fact that actors frequently incorporate sunk costs into their calculations, contrary to the normative prescriptions of standard microeconomic theory. Sunk costs are perceived as a certain loss in the absence of further action, and attempts to recover sunk costs to eliminate the loss often contributes to entrapment in escalating conflicts (Brockner and Ruben 1985).¹²

Once lives are lost in battle, for example, there are psychological and domestic political pressures (driven by loss aversion) on decision makers to persist in the war to ensure that their soldiers had not died in vain. This might help to explain why states continue to persist in failing policies, as evidenced by the American intervention in Vietnam, the Soviet intervention in Afghanistan, Japanese expansionism leading up to the attack on Pearl Harbor (Taliaferro 1997), and in countless other cases. Given the pervasiveness and importance of this phenomenon, it is rather surprising that international relations theorists have not attempted to explain escalating but costly conflicts in terms of framing, loss aversion, sunk costs, and entrapment.

Another situation in which political leaders are likely to frame their choices as losses is when they find their state undergoing a decline in relative power. They will most likely frame their reference point at (or above) the current status quo, perceive inaction as leading to a certain loss, and see the alternative as a preventive war. This option offers the prospect of eliminating the certain loss by blocking the rising adversary while the opportunity is still available, but also runs the risk of a costly and possibly unsuccessful military action.

Decisions regarding preventive war are quite complex, in that they involve two rather than one risky option (because inaction also involves risks), a comparison of current risks with future risks, and the discounting of value over time (Levy 1992b, 302–3). As a first approximation, however, a straightforward application of prospect theory would predict that if the expected values of inaction and preventive war are at all comparable, leaders may be tempted to fight a preventive war in the hope of avoiding the losses that are the inevitable by-product of continued decline.¹³

One of the additional complications involved in the analysis of preventive war, and a more general problem in empirical applications of prospect theory, is the possibility that a victorious war might go beyond eliminating losses to generate positive gains. Actors who face choices involving a certain outcome and a risky gamble that leads to positive or negative outcomes relative to the reference point are in a “mixed lottery” rather than a domain of pure gains or pure losses. Laboratory tests of behavior in mixed frames demonstrate that standard prospect theory hypotheses still hold but that they are weaker in strength.

Whereas experimental studies of mixed frames are structured in such a way that the expected values of different choices are strictly controlled, this is much harder to do in the empirical study of international relations. One danger of applying prospect theory to mixed frames in the absence of such controls is the possibility that the gain from the positive outcome is sufficiently great that it increases the expected value of the gamble to the point that it exceeds the expected value of doing nothing. As a result, the preference for a risky gamble over a certain loss may follow directly from an expected value calculation rather than from a prospect theory hypothesis based on loss aversion, the certainty effect, and risk acceptance.

Consider, for example, McDermott's (1998, chap. 3) analysis of how the Carter administration framed its decision regarding the Iranian hostage rescue mission. McDermott demonstrates convincingly that Carter perceived that inaction would lead with certainty to the continued deterioration of the U.S. international position and his own domestic support, whereas a risky rescue mission held out the promise of eliminating those losses but ran the risk of even greater losses should the mission fail. McDermott concludes that Carter's choice for the rescue mission was consistent with the prospect theory prediction of risk acceptance in the domain of losses. She also shows that different expectations about the future by Vance, Brzezinski, and Carter led each of them to frame the issue in slightly different ways and consequently to arrive at different policy preferences.

McDermott (1998, 65) concedes that Carter believed that a successful rescue mission might not only allow him to recover his losses but also bring some domestic political gains as well. This raises the possibility that the prospective gain from success sufficiently outweighed the downside risks of failure, particularly in comparison to the costs of doing nothing, so that Carter's decision is easily explained by a straightforward

expected-value calculation. McDermott recognizes this potential challenge to her prospect theory explanation and effectively deals with it by demonstrating that the perceived probability of success of the mission was very low. In response to a question from General Jones of the Joint Chiefs of Staff about the probability of success and the risks involved, Charles Beckwith, who eventually led the mission, replied, "Sir, the probability of success is zero and the risks are high" (in McDermott 1998, 69).

Implications for Strategic Interaction and Bargaining

The previously mentioned hypotheses relating to framing, loss aversion, and risk orientation all focus on national-level foreign policy choices of political leaders, but they have some important implications for dyadic-level strategic interaction. There may be some situations in which two adversaries each see themselves in the domain of losses and each is more likely to engage in risk-seeking behavior than we would predict from standard expected-value calculations.

Consider a situation in which state A has just made a tangible gain at state B's expense, say through the seizure of territory. The endowment effect suggests that A will renormalize its reference point and assimilate its gains much more quickly than B will adjust to its losses. Consequently, B will attempt to recover its losses and restore the old status quo, and A will attempt to maintain the new status quo against B's encroachments. Each will be in the domain of losses and accept larger than normal risks in order to maintain its own version of the status quo. One implication of this is that *fait accomplis* are less likely to succeed than standard theories of deterrence and coercive diplomacy suggest (George and Smoke 1974, 536–40), because they generate both risk-seeking behavior by the target to recover its losses and risk-seeking behavior by the initiator to preserve its gains.

The 1991 Persian Gulf War provides one example. It is clear that President Bush defined his reference point around the status quo *ex ante*, viewed the Iraqi occupation of Kuwait as a loss, and saw military action as a means of restoring the status quo *ex ante*.¹⁴ At the same time, the deteriorating Iraqi economy and the risks it created for Saddam Hussein's continued hold on power were important factors behind Saddam's decision to invade Kuwait (Freedman and Karsh 1993). Although more

research is necessary to determine precisely how Saddam framed his reference point, it is plausible to argue that after the seizure of Kuwait Saddam renormalized his reference point around his new gains, feared the reputational costs at home and in the Arab world of retreating from the new status quo, and adopted a risk-seeking strategy in his standoff with the United States.

Still another example of two adversaries both operating in the domain of losses was the July 1914 crisis between Austria-Hungary and Serbia. The leadership of the Dual Monarchy almost certainly perceived themselves in the domain of losses because of external decline in relative power, internal problems deriving from ethnic divisions in their multinational empire, and the affront of the assassination. Given the extraordinary demands of the Austrian ultimatum and its infringement on Serbian sovereignty (Joll 1984), it is reasonable to assume that Serbian leaders also saw themselves in the domain of losses. In the absence of additional evidence that these are correct assessments of leaders' reference points in 1914, however, one would have to be very cautious in making inferences linking these frames to subsequent behavior.

Another type of situation in which adversary state leaders may each define their choices in the domain of losses is one in which each side perceives itself to be in relative decline, though possibly for different reasons deriving from different assessments of different components of military power, different time horizons, or different analytic frameworks. Mutual perceptions of decline, whatever their sources, may create temptations for preventive war by both parties.

One example might be the Japanese-American conflict leading up to the Pacific War. By fall 1941 key Japanese decision makers believed that their current position could only deteriorate. Although they recognized that there was little chance of victory in a long war with the United States, they believed that they had a 70 or 80 percent chance of an initial success that might improve their bargaining position for a favorable settlement that would avoid a long war, and that those odds would continue to decline the longer they waited. The only alternative to war would be a return to an American-dominated international system that was intolerable to Japan (Iriye 1987, 161, 173–74; Van Evera 1999, 89–94), in part because Japanese leaders probably framed their reference point around the Co-prosperity Sphere that they hoped to implement (Levi and Whyte 1997).

Thus it is pretty clear that Japanese leaders saw themselves in the domain of losses and that they gambled on a risky preventive war to

consolidate their regional hegemony while the opportunity was still available.¹⁵ The United States, meanwhile, never accepted Japanese expansion into China, insisted on a return to the status quo ex ante in Asia, feared the erosion of its global position by a rising and expansionist regional power, and implemented highly coercive economic sanctions against Japan, which only increased Japanese dissatisfaction with the status quo (Iriye 1987).

Most of these illustrative examples involve the failure of deterrence or compellence, and prospect theory has important implications for coercive threats and bargaining. Framing and loss aversion help to provide a theoretical explanation for Schelling's (1966, 69–91) insight that deterrence is easier than compellence. Deterrence entails dissuading actors from taking an action they have not yet taken and thus usually involves denying adversaries a possible gain. Compellence involves threats to persuade others to do something they are not currently doing, to stop doing something they are already doing, or to undo something they have already done, which usually involve the imposition of a loss. Psychological costs of losses are greater than those for gains, so in these situations compellence is harder than deterrence.

It is incorrect to assume, however, that targets in deterrence situations always frame their reference points around the status quo and that deterrence always involves denying gains to the adversary. When a state loses territory, it usually does not quickly renormalize its reference point, and it usually perceives any subsequent attempt by others to deter it from recovering that territory as a reinforcement of losses rather than a denial of gains. French attitudes after the German seizure of Alsace-Lorraine in 1871 are examples of this.

Similarly, if state decision makers perceive that their position of power is threatened by domestic political opposition, they may be tempted to engage in belligerent foreign policies in order to generate rally effects and thus solidify their domestic support. If these decision makers frame their reference point around earlier and more positive support levels, attempts to deter them from using military force abroad will be perceived as the continued imposition of losses rather than the denial of gains and will be less likely to succeed (Lebow and Stein 1987).

The more general proposition about deterrence and compellence is that influence attempts based on coercion are more likely to be successful if the target sees itself in the domain of gains and is contemplating an effort to improve its position. Coercion is less likely to succeed if the tar-

get sees itself in the domain of losses and is considering how to prevent its position from deteriorating further or to recover its losses.

Framing and loss aversion also have potentially important implications for standard approaches to the study of immediate deterrence. It is conventional here for researchers to select cases based on a prior threat by a challenger (Huth and Russett 1988).¹⁶ If the target or its protector responds to a challenger's initial threat with a deterrent threat of its own, the challenger must decide whether to defy the deterrent threat and implement its initial threat (or some variation of it) or to withdraw its initial threat.

The challenger recognizes that its initial threat has certain consequences because of the reputational and perhaps domestic political costs involved in making such a threat and then withdrawing it, and how the challenger frames its reference point will influence how it evaluates those costs. If the actor defines its reference point as the status quo ex ante, it will see its failure to implement the threat as a retreat *to* the old status quo, which involves a foregone gain. If, on the other hand, the challenger frames around the situation created by its new demand and associated threat, it will see any withdrawal of the threat as a retreat *from* the new status quo, which involves losses. The second frame is more likely to induce risk-seeking behavior and the escalation of the conflict. Presumably, however, the challenger will anticipate the potential costs of withdrawing a threat in the face of a counterthreat and make the initial threat only if she or he is highly resolved (Fearon 1994b).

Let us now turn to a more direct focus on bargaining in strategic interaction within dyads. I spoke earlier about the status quo bias (or, more accurately, reference point bias) in individual choice. There is a comparable tendency in dyadic bargaining. Bargaining involves making concessions on some issues in return for compensation on others. Loss aversion and the endowment effect imply that actors have a tendency to treat the concessions they give up as losses and the compensation they receive from the other actor as gains, and consequently to overvalue what they give relative to what they get. This leads to a greater tendency on both sides to risk the consequences of a nonagreement or deadlock, and hence a lower probability of a negotiated agreement, than utility-based bargaining theory might predict.

This is often described as a *concession aversion* in bargaining (Kahneman, Knetsch, and Thaler 1990, 1345). Concession aversion applies even when the value of the concessions and acquisitions in bargaining

are perceived to be equal by each actor. The implication is that if everything were the same except that the ownership of the specific goods in question were reversed, each actor would still have a concession aversion against a bargain over those goods.

The implicit hypothesis underlying this discussion is that people behave differently when the issue is the distribution of losses rather than the distribution of gains, so that how the bargainers frame the problem in terms of gains and losses is itself a critical variable. Consider a bargaining situation in which each side makes an initial offer and then is given the choice between accepting a compromise agreement halfway between the two offers or accepting an arbitrated solution. We assume for the purposes of this example that actors can achieve a negotiated settlement with certainty if they select it and that arbitration is a risky alternative, in that it can lead to an outcome that is either better or worse than the negotiated outcome. We also assume that the expected value of the arbitrated outcome is lower than that of the negotiated alternative, due to such arbitration costs as time delays, arbitration fees, loss of control over the outcome, and so on (Crawford 1979; Neale and Bazerman 1985, 37).

Hypotheses on framing and loss aversion imply that the likelihood of the negotiated settlement being accepted depends in part on whether the two negotiators frame the compromise agreement as a gain from their adversary's initial offer or a loss from their own initial offer. If they frame the compromise as a retreat from their initial offer, they will define compromise as a certain loss and be more inclined (*ceteris paribus*) to accept the risky gamble of arbitration in the hope of eliminating their loss but at the risk of incurring a greater loss. If they frame the compromise as a gain from the adversary's initial offer, they will be more inclined to accept that settlement and lock in a certain gain rather than take a risky gamble.

Although less experimental work has been done on the impact of framing on bargaining behavior than on individual choice, the evidence provides some support for this framing hypothesis (Tversky and Kahneman 1986, S262; Bazerman 1983). Neale and Bazerman (1985) conducted an experiment in which subjects were assigned the role of management negotiators. One group of subjects was given a negative frame ("Any concessions beyond those granted will represent serious financial losses to the company") and another was given a positive frame ("Any union concessions from their current position will result in gains for the company"), but the choice problems facing each group were mathematically equivalent.

Neale and Bazerman (1985) find as predicted that individuals in the negative frame (as compared to those in the positive frame) are less likely to settle for the certainty of the negotiated agreement, more likely to accept the riskier gamble of arbitration, and more likely to end up with inferior outcomes. They also find that the likelihood of subjects selecting the riskier arbitrated settlement depends also on their degree of confidence in being able to secure a favorable outcome from arbitration.

These findings have important implications for international conflict, for a comparable situation to the preceding would be a crisis in which two states both define their options as either a negotiated settlement that they have good reason to believe that the other would agree to, or a war that would generate some possibility of a better outcome than the negotiated settlement and some possibility of a worse outcome. In addition, overconfidence in securing a favorable arbitrated outcome parallels the tendency among political leaders to overestimate the probability that their own coercive threats will induce compliance by the adversary or that they can defeat the adversary in war if the crisis escalates.¹⁷

These behavioral studies of bargaining also have important implications for the study of the conditions for cooperation in international relations. Most of the empirical work on cooperation focuses on international political economy and defines the question in terms of cooperation to distribute the gains of economic interdependence. Hypotheses on framing suggest that international cooperation should be more difficult when the issue involves the distribution of losses rather than of gains (Stein and Pauly 1992).

The psychological asymmetry between actual losses and foregone gains, between out-of-pocket costs and opportunity costs, also has some important implications for judgments of moral responsibility and for social norms regarding fairness. Although the literature on the role of international norms has grown significantly in the last half-decade (Katzenstein 1996), little work has been done on the impact of norms of fairness and how they affect the origins and escalation of international crises and other aspects of international behavior. Evidence from other areas, however, suggests some interesting hypotheses regarding international behavior.

People have a tendency to treat errors of commission or action as more blameworthy than errors of omission or inaction (Ritov and Baron 1990; Camerer 1995, 668). The enactment of a crime is usually judged more harshly than the failure to prevent a crime from occurring. In tort

law, judges distinguish between “loss by way of expenditure and failure to make a gain.” In contract law, a party that breaches a contract in order to make an unforeseen gain is more likely to be held to the original terms of the contract than if the action were taken to avoid a loss (Kahneman, Knetsch, and Thaler 1991, 204). Similarly, social norms against hurting another are probably more compelling than norms to help another, and there is some evidence that people are more cooperative when they perceive the others to be in a loss frame rather than a gain frame (de Dreu, Emans, and van de Vliert 1992).

Judgments of fairness or injustice can be an important factor in the origins and escalation of international conflicts. They may have a particularly important impact on how actors frame their reference points and how quickly they adjust or renormalize to changes in the status quo. Actors are less likely to renormalize their reference points after the loss of territory—and more likely to adjust to a gain in territory—if they perceive that territory as a long-standing moral entitlement. It is useful to compare the behavior of France and Germany with respect to Alsace-Lorraine in 1871 and 1918. France failed to renormalize its reference point after the loss of Alsace-Lorraine in 1871 but rapidly renormalized to its recovery in 1918, whereas Germany never fully incorporated her gain in 1871 and quickly accepted her loss of Alsace-Lorraine in 1918 (Welch 1993, 24–25).

The status quo bias, concession aversion, and related hypotheses are based on the endowment effect. Experimental evidence suggests that under some conditions the endowment effect is likely to be minimal. One of the most important of these, at least in terms of implications for international bargaining, is the tendency for goods that are acquired for later sale rather than used to generate small endowment effects (Kahneman, Knetsch, and Thaler 1991, 200).

One important implication is that “bargaining chips” are evaluated differently than are other goods. If concessions involve a bargaining chip, and especially if the items or resources involved were acquired or created with that purpose in mind, the asymmetry of value attached to concessions given and compensation received is likely to be much less, which minimizes the concession aversion. The Israeli seizure of the Sinai Peninsula from Egypt in the Six Day War and subsequent return of the Sinai to Egypt as part of the 1979 peace treaty is a good example here. It is clear that Israeli leaders regarded the Sinai as a bargaining chip (Yaniv 1994, 213, 221), though it is not clear whether that was a primary motivation in the initial seizure of the territory.

Another interesting qualification of the endowment effect concerns responses to sudden windfalls. Gamblers who are ahead for the day sometimes refer to “playing with the house money” and gamble rather recklessly as a result, rather than assimilate the windfall into their psychological endowment and renormalize their reference points, as the instant endowment effect would predict. Thaler and Johnson (1990) refer to this as the *house money effect*. This effect diminishes as the size of the potential loss threatens to cut into one’s initial stake or endowment (Battalio, Kagel, and Jiranyakul 1990).

It is not clear that the house money effect has any meaningful parallels in international behavior, though Taliaferro (1995) provides an interesting application to the U.S. decision to intervene in Korea in 1950. One possibility is that political leaders who unexpectedly receive a boost in domestic political support may be more willing to take diplomatic (or domestic) actions that carry domestic political risks, given the additional cushion provided by their windfall.

The Strategic Dimensions of Framing

I have emphasized the centrality of framing to prospect theory and the empirical problems associated with identifying the reference point and doing so independently of the behavior we are trying to explain. The assumption, here and in all of the literature, is that framing is exogenous and that causality runs unidirectionally from framing to preference and choice. We must be sensitive to the possibility, however, that under some circumstances framing might be endogenous. That is, one’s preference for a certain outcome might influence how one frames the choice problem.

This is particularly important in a group or interactive decision-making context. Individuals may articulate a particular frame or reference point for the primary purpose of influencing another’s behavior by attempting to manipulate how they frame their choice problem. What appears to be an actor’s exogenously defined reference point may in fact represent strategic behavior. This raises the difficult methodological problem of how to differentiate empirically between genuine frames and strategic frames.

In Japanese policy deliberations leading up to the Pearl Harbor attack, for example, do repeated references to the Co-prosperity Sphere by Japanese decision makers represent genuine framing around an

aspiration level, as Levi and Whyte (1997) argue? Or do they represent strategic efforts by some actors to manipulate others' preferences by framing the way they define the situation? In emphasizing the zero-missile reference point in the Cuban missile crisis, was Kennedy expressing his true frame or was he behaving strategically to shape others' reference points in a way that would support Kennedy's policy preferences?

One approach to this problem is to examine both private documents and public documents, on the assumption that the former are more likely to reveal genuine preferences and that any discrepancy between the two may reflect strategic attempts to manipulate frames. This is the rationale behind Levi and Whyte's (1997) comparative content analysis of transcripts from both the Liason Conferences and Imperial Conferences in Japan in 1941. They argue that various factions were freer to voice their dissenting opinions during the deliberations in the Liason Conferences, where decisions were made, than in the Imperial Conferences, where recommendations were presented to the emperor for approval and where there were strong norms against revealing disunity within the decision-making group. This approach helps to control for deference to authority in the Imperial Conferences, for moderates made more references to the Co-prosperity Sphere in the Imperial Conferences than in the Liason Conferences, but the problem of separating genuine from strategic frames in the Liason Conferences remains.

The problem of identifying the direction of causality between frame and preference is even more difficult for individual behavior, where there are fewer written records that might be used to infer a reference point. It is conceivable that an individual's preference or risk orientation may lead him or her to frame a choice problem in a way that reinforces the preferred outcome, strategy, or risk orientation. Actors who prefer a cautious policy for psychological or other reasons, for example, may frame their reference point in a way that renders the status quo an acceptable outcome and thus reinforces their psychological preference to avoid risky gambles. Or, actors who prefer a confrontational policy may frame their own reference point around a higher aspiration level; this would leave the status quo as a loss and reinforce the preexisting tendency toward risk-acceptant choices.

It may be very difficult to distinguish between these alternative explanations and to disentangle what comes first, the frame or the preference. Consider the Cuban missile crisis. Presidential adviser Sorensen (quoted in Blight, Nye, and Welch 1987, 181) states that

... the President drew the line precisely where he thought the Soviets were not and would not be ... if we had known that the Soviets were putting 40 missiles in Cuba, we might under this hypothesis have drawn the line at 100, and said with great fanfare that we would absolutely not tolerate the presence of more than 100 missiles in Cuba. ... I am suggesting that one reason the line was drawn at zero was because we simply thought the Soviets weren't going to deploy any there anyway.

This implies that, in Sorensen's view, the causality runs from Kennedy's preference for a cautious response to the Soviet action, in conjunction with his expectations about likely Soviet behavior, to a zero-missiles reference point, not the other way around. Kennedy's public warning to the Soviets not to install offensive missiles in Cuba was an attempt to neutralize political criticism at home without incurring much military risk (Whyte and Levi 1994, 252). Sorensen's account includes the counterfactual hypothesis that had Kennedy expected a certain number of missiles in Cuba he would have drawn his line in the sand above that number so as to minimize the likelihood of any confrontation.

It is not clear, however, that this evidence reflects an individual adjusting his own reference point consistent with a certain level of risk he was willing to accept, or whether it reflects an attempt to manipulate the reference point of public opinion to contain their demands for excessively confrontational policies.

The preceding discussion concerns an actor's attempt to influence the policy preferences of others in a collective decision-making setting by influencing how others frame their reference points. A similar "framing game" occurs in bargaining between adversaries. In a bargaining situation I have an incentive to attempt to influence my adversary's evaluation of the relative costs and benefits of various policy choices, and also the adversary's images of my own preferences, resolve, and expectations. In addition, however, I may also have an incentive to try to influence the adversary's resolve indirectly by shaping the way he or she frames his or her choice problem and the way the adversary perceives that I frame my own choice problem.

The basic hypothesis is that I should try to influence the adversary to treat his or her concessions as foregone gains rather than as losses, and at the same time to convince the adversary that I treat my own concessions as losses rather than as foregone gains. That is, I should induce the

adversary to shift her or his reference point to a lower expectation or aspiration level and to believe that my reference point is at a higher expectation or aspiration level. This would decrease the psychological cost to the adversary of making concessions to me, increase my own costs of making concessions (as perceived by the adversary), and consequently shift the bargaining outcome in my favor. Whether these various forms of strategic framing actually go on, and whether the magnitude of their effects are significant, is an important empirical question that scholars have yet to explore.

There are other ways of presenting negative outcomes besides foregone gains, and different frames induce different subjective assessments of value. Most people do not think of insurance premiums as a loss, for example, but rather as a cost of protection, the psychological cost of which is lower. Slovic, Fischhoff, and Lichtenstein (1982) find that only 20 percent of their study subjects preferred a sure loss of \$50 to a 25 percent chance of losing \$200, but 65 percent preferred to pay \$50 for insurance against a 25 percent risk of losing \$200 (see also Schoemaker and Kunreuther 1979).

These and related patterns lead Kahneman and Tversky (1984, 349) to make a distinction between uncompensated losses (or "dead losses") and costs of protection. The former, but not the latter, are overweighted in risky choice behavior. This has prescriptive implications. If people psychologically frame negative outcomes as costs (e.g., the costs of doing business or costs of insurance) rather than losses, they can reduce the psychological impact of those losses.

The implications for international relations are potentially important but undeveloped. It is intriguing to speculate whether it makes a difference—in terms of the psychology of political decision makers or in terms of public opinion—if certain negative outcomes in international relations are framed as costs of "doing business" and insuring against future losses in a hostile and competitive international system, or if they are framed as losses.

Conclusion

Kahneman and Tversky (1979) developed prospect theory to explain patterns of individual choice that deviate from the predictions of expected-utility theory in systematic and predictable ways. The theory builds on

the central analytic assumption of reference dependence and the asymmetry between gains and losses to generate a rich set of hypotheses about individual behavior. In this chapter I have tried to develop the implications of framing and loss aversion for international conflict and bargaining. The resulting hypotheses provide some new perspectives on some old questions in the study of international conflict, and they also put a new set of questions on the agenda for further theoretical and empirical exploration.

The tasks facing the prospect theory research program are both theoretical and empirical. I have discussed some of these elsewhere (Levy 1997), but this chapter suggests some additional points that I should mention. Some of the most important tasks involve the analysis of framing. Reference dependence is the key assumption of prospect theory, but we have few hypotheses on how actors actually identify their reference points and no accepted methodology for empirically measuring where those reference points are and when and how they change. We know that actors renormalize their reference points much more quickly after gains than after losses, but we do not know how much more quickly and whether this varies as a function of issue area, the magnitude of the losses, or personal characteristics. A related question concerns the conditions under which states that have suffered losses finally accept those losses and renormalize to the new status quo. Britain has adjusted to the loss of its North American colonies, but Argentina has yet to accept the loss of the Malvinas and some Israelis and Palestinians frame around reference points that go back millennia.

Another question is whether actors can influence how others define their reference points or induce changes in those reference points. I have suggested that both in group decision making and in bargaining with adversaries actors may have incentives to attempt to influence how others frame their reference points, but these "framing games" have not been developed theoretically or examined empirically or experimentally.

At this stage of the prospect theory research program it would be more useful to pursue these tasks and to develop further the implications of prospect theory for international relations and foreign policy than to engage in more abstract debates with rational choice theorists about the relative merits of the two paradigms. In particular, visions of a paradigmatic war between rational choice and prospect theory are not particularly useful. McDermott's (1998, 14) comment that "prospect theory renders rational choice models descriptively vacuous, empirically static, and

normatively bankrupt with respect to understanding risk-taking in international politics," for example, is unproductive and supported neither by theoretical argument nor by empirical evidence. It greatly exaggerates the extent of progress in the empirical verification of key prospect theory hypotheses in international relations. It also fails to recognize that prospect theory and rational choice theory share many of the same assumptions and many of the same limitations.

I have spoken elsewhere about the complex relationship between the two theories and have argued that prospect theory is not easy to classify in terms of the "cognitive-rational" debate (Levy 1997). It is true that the process of framing undoubtedly involves cognitive and affective variables and thus is inherently "psychological" in nature. But most research on prospect theory focuses on the evaluation phase of the theory, which treats preferences and subjective probability judgments as exogenous and which shares much in common with expected-utility theory and other rationalist utility-based models of choice.

As McDermott (1998, 5) correctly notes, "prospect theory is a theory of decision making, not one of judgment." Like utility-based rational choice theories, prospect theory must be combined with a theory of judgment that explains subjective assessments of the likelihood of various outcomes and also with a theory of preferences that explains how actors identify different possible outcomes and evaluate their respective utilities. Neither prospect theory nor rational choice theory alone provides a complete theory of international politics. In many respects they share more similarities and differences, and proponents of both should recognize that they face greater enemies than each other.

NOTES

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1. See the special issues of the *International Journal* (1992) and *Political Psychology* (1992), which were reprinted as edited books by Stein and Pauly (1992) and Farnham (1994), respectively; the book by McDermott (1998); articles by Peterson and Lawson (1989), Whyte and Levi (1994), Boettcher (1995), Levy (1996a, 1997), Weyland (1996), Nincic (1997), Levi and Whyte (1997), Taubman (1997), and Berejikian (1997); chapters in several books (Geva and Mintz 1997); and a rapidly growing number of convention papers and journal submissions (Geva and Mintz 1994; Levy 1996b; Taliaferro 1994, 1995, 1997; Davis 1997). In addition, much of the increasing interest in risk

behavior in international politics (Vertzberger 1995, 1998; Kowert and Hermann 1997) has been influenced by debates relating to prospect theory. The historian John Lynn (1999, 43–44) uses prospect theory to help explain Louis XIV's motivations in the 1680s and 1690s.

2. The expected-utility principle postulates that actors aim to maximize their expected utility by weighting the utility of each possible outcome of a given strategy by its probability of occurrence, summing over all possible outcomes, and selecting that strategy with the highest expected utility. Expected-utility theory posits that an individual's utility for a particular good is a function of net asset levels of that good. An actor's attitude or orientation toward risk is defined in terms of marginal utility or the shape of the actor's utility function. Actors are risk averse if their utility function is concave, risk neutral if their utility function is linear, and risk acceptant if their utility function is convex. This section builds on Levy (1996a).
3. Similarly, John Elway (*New York Times*, 25 January 1999) remarked that "The fun of going to the Super Bowl in no way compares to the wrath you get for losing one."
4. Loss aversion and risk orientation are analytically distinct. Loss aversion is reflected in the steepness of the value function on the loss side, whereas risk orientation is reflected in the curvature of the value function. The concepts of loss aversion, the endowment effect, and the status quo bias can all be applied to choice behavior under conditions of certainty, where there are no risky gambles, as well as to choices under risk. Tversky and Kahneman (1991), for example, develop a model of loss aversion in riskless choice that has nothing to do with lotteries.
5. Preliminary experimental evidence suggests that overweighting begins when probabilities are below .10 or .15 (Levy 1992a, 183).
6. For example, we cannot infer that because Saddam refused to withdraw from Kuwait in the face of U.S. coercive threats, he must have framed his reference point around his new acquisitions and engaged in risk-acceptant behavior to keep them.
7. The following discussion builds on Levy (1992b, 1996a, 1996b).
8. Similar logic affects compensatory decision rules in multiattribute choice problems. More specifically, actors' trade-offs among competing values are complicated by the fact that a loss on one dimension cannot be compensated for by an "equal" gain on another dimension, for the loss will be overweighted relative to the gain.
9. There is some danger that these findings may be distorted by selection effects and related endogeneity problems. Nincic (1997) selects only cases of intervention and ignores other cases in which presidents may also have preferred intervention but backed off in the presence or anticipation of low levels of public or congressional support. It would be useful to identify such

cases of nonintervention, to explore how these were framed by the public and Congress and president, and to analyze whether framing explains which cases led to intervention and which did not.

With regard to congressional support, Nincic's indicator ("the presence or absence of an affirmative resolution originating within either house of Congress") is affected by whether the president seeks such a resolution, which in turn is affected by the expected probability of winning such a resolution. President Bush sought and received a congressional resolution just prior to taking military action against Iraq in the 1990/91 Persian Gulf War, but had planned to withdraw the request and avoid a vote if anticipated head counts had turned negative (Freedman and Karsh 1993). It is not clear, therefore, whether causality runs from intervention type to support levels or from anticipated support levels to presidential proposals for intervention.

10. An alternative explanation for the observed tendency toward status quo choices is an *inaction bias*. Some experiments show that subjects prefer a default option (which would be selected if no explicit action were taken) over the current status quo when the two are different (Camerer 1995, 669). This could be particularly important in dynamic situations in which the failure to act might leave one worse off than before. This question needs more investigation in the laboratory and in the empirical world of international relations.
11. There has been a great deal of work in management science and organizational behavior on the role of aspiration or target levels, and this has potentially important but undeveloped implications for international relations. The standard hypothesis is that organizations define an aspiration or target level and that this point divides success from failure. Performance above a target level leads to a primary focus on avoiding actions that might drop one below the target, which leads to risk aversion. Below target-level performance, on the other hand, leads to greater risk taking in an attempt to reach the target (March and Shapira 1987).
12. Substantial experimental evidence supports the importance of sunk cost effects (Arkes and Blumer 1985). In one hypothetical experiment, Thaler (1980, 47) finds that people are more likely to drive through a snowstorm to go to a basketball game if they had paid for the tickets than if they had been given the tickets. There is also evidence that betting on long shots at race-tracks increases as the day goes on, which suggests that those who play the horses do not adjust to their losses.
13. One might argue, however, that the risks of delay are greater than the risks of war now because the number and magnitude of negative outcomes presumably increases as one's relative power declines. This would create an incentive for a risk-acceptant actor to delay, but for a risk-averse actor to prefer preventive action now (Levy 1992b). This tendency for risk-acceptant dominant states to prefer inaction but for risk-averse states to prefer a pre-

ventive war now follows from Kim and Morrow's (1992) formal theoretical model of war decisions during power transitions, which receives some support from their empirical analysis for the period since 1815.

14. This may have been a mixed frame for Bush, in that he may have seen military action as a means of setting back the Iraqi nuclear program, establishing a precedent for allied cooperation in the "new world order," and increasing (or restoring) his levels of domestic political support.
15. Levi and Whyte (1997) find in their content analysis of Japanese documents that recommendations for war were accompanied mainly by reference point arguments relating to Japan's unsatisfied aspirations and the unacceptable nature of the status quo. Recommendations for diplomatic options, on the other hand, were associated with non-reference point arguments, including probability estimates of success and failure. This is consistent with more general findings that individuals' concerns with the probability of success or failure decline as the status quo becomes more aversive (Cohen, Jaffray, and Said 1987). Note that this runs contrary to the standard assumption (in both expected-utility theory and prospect theory) that actors' subjective utilities and probabilities are formed independently.
16. A prior threat suggests some motivation for military action on the part of the challenger, and thus minimizes the likelihood that the failure of the challenger to undertake military action after a deterrent threat from an adversary is due to the absence of motivation on the part of the challenger, rather than to the hypothesis of successful deterrence by the target.
17. One experimental study in international relations that bears on this is Morgan and Wilson's (1989) test of a spatial model of crisis bargaining. They find that subjects sought agreements when the payoffs were positive but were more likely to risk war when the payoffs were negative; in each case the preferred outcome had a lower expected value than the alternative. See also the experimental work by Geva and Mintz (1994) on Israeli attitudes toward a negotiated agreement with Syria.

Note: because the *Handbook of War Studies* combines all references for the volume at the end, I include the following list of references for this chapter.

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