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Dynamic Decisions: Experimental Reactions to War, Peace, and Terrorism

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Abstract

A set of psychological laboratory experiments, motivated by image theory, focuses on the dynamics of individual responses to international attacks. Results illuminate some dimensions of individual reactions to war, peace, and terrorism. Young American citizens are reluctant warriors. They respond slowly to news reports of international attacks. Without successive attacks, conflict responses decay over time. After several rounds of reported attacks, individuals generally escalate their responses but only up to the level of an attacker's conflict actions. Individual responses to international attacks vary with a number of additional influences. These include: prior knowledge and priming, types of attackers, types and locations of targets, individual personality and gender. Conflictual actions are more linear and unidimensional than cooperative ones, and there is no clear firebreak between conventional and nuclear weapons.

DYNAMIC DECISIONS: EXPERIMENTAL REACTIONS TO WAR, PEACE, AND TERRORISM

Francis A. Beer, Alice F. Healy, and Lyle E. Bourne, Jr.

Contemporary societies create themselves at an exponential rate. Each new scientific advance, each new technological breakthrough, each new economic success or political initiative, ripples through increasingly interlaced global networks. Actors must adapt and reconnect in a constantly changing, expanding, and reordering environment. Decision science aims at understanding the process through which these multiple actors make choices in contexts of multiple levels, sectors, and issues.

The most massive such decisions, in terms of scope and stakes, may be decisions to go to war or to make peace. Traditional analysts of international relations and foreign policy--Clausewitz or Kissinger for example--have long believed that calculation of material factors, defined in terms of reason of state or national interest, are the primary determinants of decisions to go to war or make peace. Formal rational choice models of foreign policy making also hold that such decisions stem from the calculation of national utilities in an interdependent system where all actors are rational, or at least behave as though they are. In this model, expert decision makers undertake systematic comparative assessments of rewards and risks. They order preferences and estimate probabilities. They analyze game matrices of interdependent decision. In the light of these operations, they choose appropriate policies to optimize national interests.

Rational actors, using linear, logical, mathematical optimization algorithms are most relevant in particular domains where problems are well structured, information is complete, and time allows for comprehensive analysis. In many situations, including war and peace however, rationality prerequisites are not fully present and decision-makers must operate under serious time pressures, with incomplete information, risky ambiguity, and substantial uncertainty (Cioffi-Revilla, 1998). In such cases, decision-makers do not optimize but rather, in Herbert Simon's (1956) famous word, "satisfice". Unable to search and order the full decision space, they do the best they can. Using rough approximations and heuristic short cuts, they make decisions that are "good enough." Expert official decision makers in large bureaucracies may aim at higher degrees of rationality. Public opinion leaders and the general public concerned with foreign policy may have to settle for less.

War/peace decisions thus inevitably include a mix of both rational and non-rational dimensions that vary across actors and contexts. Certain decision makers in particular circumstances may approach the status of rational actors. But the literature in cognitive psychology makes it clear that individuals differ and suffer substantial limitations of attention and memory. Going beyond these limitations, current theory suggests that rationality is only part of the story. Decision makers, in this perspective are "cognitive actors" (Rosati, 2000), and a comprehensive decision theory must take psychological factors into account (see, *inter alia*, Kahneman, Slovic, & Tversky, 1982; Burke & Greenstein, 1989; Fiske & Taylor, 1991; Farnham, 1994; Lavine, Borgida & Rudman, 1994; Geva & Mintz, 1997; Levy, 1997; Vertzberger, 1998; McGraw, 2000; Hermann,

2001; Lamborn & Lepgold, 2001). The cognitive actors approach points to new theoretical perspectives for decision. Where rational choice theory suggests that decision-makers think forward from present experience, attempting to optimize their choices according to goals to be achieved, a cognitive approach proposes that they also think backward and draw from memory. The cognitive actor tries to fit present experience into existing mental models based on past experience and prior learning. These models are generally non-rational and include parameters such as preferences and subjective probabilities along with non-optimal heuristics and images in memory (Sylvan & Voss, 1998).

Schema theory is one way of formulating this insight. It is oriented around the idea that knowledge and episodes are stored in memory as schemas that can be retrieved intact and then used as analogs of current events, serving to guide action. A schema allows one to generalize from past experiences to the present or anticipated future (Beer, Healy, Sinclair, & Bourne, 1987). The schemata are activated by environmental cues and, in turn, shape perception and behavior. Examples of schema theorizing applied to politics include the "impression-driven" processing of Lodge and Stroh (1993), where the impression is the schema; the "likability heuristic" of Sniderman, Brody, and Tetlock (1991), where the perceived opinions of liked others serve as positive schemata; and other related work (Krosnick & Kinder, 1990; Kuklinski, Luskin, & Bolland, 1991; Lodge, McGraw, Conover, Feldman, & Miller, 1991; McGraw, 1991; Vertzberger, 1990).

Image theory is a particular type of schema theory that has been applied across various political domains (Blanton, 1996; Christopher, 1996; Huntley, 1996; Kamalipour & Tehranian, 1998; Lobell, 1999; Murray & Cowden, 1999; Wang, 1999; Weele, 1999; Kinney, 2000; Lindgren, 2000; Luthur, 2002). Any images that people bring to a decision making situation can be expected to affect their performance (e.g., Herrmann, Voss, Schooler, & Ciarrochi, 1997; Sylvan & Voss, 1998; Healy, Hoffmann, Beer, & Bourne, 2002). For example, politicians are likely to have images that apply to other countries as allies, enemies, colonies, or other types of categories (Voss, Kennet, Wiley, & Schooler, 1992; Heradstveit & Bonham, 1996; Schafer, 1997), and the image of a particular country will influence decisions about how to react to an immediate situation involving that country. If a particular country's image is based in part on its type of regime or government (i.e., democratic or non-democratic), then the democratic peace proposition may influence choices about how to react. According to that proposition, democratic nations do not make war against each other (see, e.g., Russett, 1993; Ray, 1995; Brown, Lynn-Jones & Miller, 1996; Maoz, 1997; Gowa, 1999; Cederman, 2001; Hegre, Ellingsen, Gates, & Gleditsch, 2001; Weart, 2001; Henderson, 2002). Both politicians and ordinary citizens of a democracy probably have an "ally" image of other democracies but an "enemy" image of non-democracies.

A popular aphorism holds that those who do not remember history are condemned to repeat it. A cognitive perspective suggests that those who do remember history apply it selectively in accordance with image theory. Particular foreign policy makers recall different past events in different shading and detail. For example, the assassination of Austrian Archduke Franz Ferdinand at Sarajevo in 1914, Germany's invasion of its Western European neighbors in the late 1930's, the Japanese attack on Pearl Harbor; the Korean War; the Cuban missile crisis; Vietnam; and the Gulf War mean different things to different participants. Different actors use different individual and

collective images in different shadings and combinations to form their understanding and interpretation of different contemporary events as metaphors, analogies, or lessons (cf. Neustadt & May, 1986; Khong, 1992; Hemmer, 2001).

In the cognitive actor model, images are components of the internal cognitive schemata that intervene between stimulus and response, working to influence actor responses. Variable external events stimulate the activation of some images and the inhibition of others. These images mediate perception, interpretation, and responsive behavior. Memory contains the image inventory, which allows pattern matching to current events. Images are used as analogs, allowing extrapolation from past experiences to current or anticipated reality. The results of image application are evaluated; old images are updated, new ones added. Learning, adaptation, and cognitive evolution occur. Of course other factors are also significant in this image activation, matching, selection, and application process. Personality qualifies and modulates image recall and application. Men and women and people with different personalities may see, remember, or use the same image in different ways, give different weights to various schema dimensions, and draw different action conclusions.

Psychological Laboratory Experiments

Concerns about the dynamics of decisions regarding war, peace, and terrorism have motivated our collaborative research program, which has extended over 15 years. This program consists of a series of experiments focusing on the responses of young adults to simulated media reports of international conflict. Our findings are most relevant to understanding the dynamics of public opinion about international attacks. There has been a great deal of research on public opinion about international relations and foreign policy (e.g., Wittkopf, 1990; Holsti, 1996; Wittkopf & McCormick, 1998). Such work provides detailed descriptions of public attitudes toward various aspects of foreign policy and international relations. There has also been a wealth of writing on the many political and psychological dimensions and implications of modern media, including their relationship to democracy and political and personal violence (see Iyengar & Reeves, 1997; Taylor, J., 1998; Taylor, P. M., 1998; Moeller, 1999; Potter, 1999; Bennett & Entman, 2000; Graber, 2001). At the same time, there is much less systematic knowledge about the detailed psychological mechanisms through which news media reports affect individuals' responses to international events. We believe that our research on the influence of media reports about international attacks provides a promising perspective on responses of individuals to foreign events and the formation of public foreign policy opinion. At the same time, it also provides more indirect insights about general processes that may also be important when political elites and governmental decision-makers confront the same situations.

Our experiments have focused on public reactions to international cooperation and conflict (Beer et al., 1987; Beer, Ringer, Sinclair, Healy & Bourne, 1992; Beer, Sinclair, Healy, & Bourne, 1995; Bourne, Sinclair, Healy, & Beer, 1996; Bourne, Healy, & Beer, 2002; Healy, Hoffman, Beer, & Bourne, 2002). These experiments administered paper questionnaires to university students, including mostly undergraduates, but also some graduates. One experiment used a sample of political science graduate students to rate a set of items and establish a scale of for their degree of international conflict and cooperation (Beer et al., 1992). In the other experiments, undergraduate

participants were asked initially to respond to questions probing personality attributes, demographic characteristics such as gender, and level of political knowledge. Next came a priming vignette and/or a background scenario describing a situation of conflict between principal and allied nations. Participants were then given a newspaper report of an attack sponsored by one nation on another with which they were associated. They were then asked how they or their nation would respond. Following their response, they received another newspaper report describing another attack and again asked for their reaction. This procedure was iterated for a total of several successive rounds.

A Family of Action-Reaction Effects

A first set of findings focuses on a family of action-reaction effects in responses to international attacks. A large body of prior work has investigated the dynamics of reciprocal international interactions (e.g., Richardson, 1960; Axelrod, 1984; Goldstein & Freeman, 1990). There is also an extensive literature on international bargaining and negotiation that mediates such relations (e. g. Lebow, 1996; Cohen, 1997; Fisher, 1997; Rothman, 1997; Aggarwal, 1998; Hopmann, 1998; Berton, Kimura, & Zartman, 1999; Starkey, Boyer, & Wilkenfeld, 1999; Garling, Kristensen, Backenroth-Ohsaka, Wessels, & Ekehammar, 2000; Leng, 2000; Zartman & Rubin, 2000). With some notable exceptions (e.g., Rapoport & Chammah, 1965), however, there has been less experimental work in this area. Our own research presumes that repeated international attacks increasingly stimulate hostile enemy images associated with conflictual responses. Such images mediate response dynamics, which include processes that we shall call "reciprocity," "decay," "escalation" and "forgiveness" (see Healy et al., 2002). Individuals tend to reciprocate international conflict, but they do so slowly and at a discount. When not continuously provoked, they become less conflictual as memories of earlier attacks apparently drain away. Even after several sequential rounds of provocation, they generally support conflictual responses of their own state only up to the threshold of an opponent state's conflict actions. The participants that we studied show little propensity to undertake a military first strike. When attacked once, the psychological force driving a retaliatory strike diminishes over time. When attacked several times, the propensity for second and subsequent retaliatory strikes systematically lags behind the provocation and does not exceed its conflictual level (Beer et al., 1995).

The Falklands/Malvinas Experiment

Our first experiment (Beer et al., 1987) began with 60 University of Colorado introductory-psychology students. After some preliminary questions, subsets of participants were now placed in different conditions with different priming vignettes. One group received a page entitled "War Involves Terrible Costs" that statistically and graphically described the horrors of World War I. A second group received a page entitled "Appeasement of Aggression Leads to War." The text described the "famous example of appeasement, the Munich conference, at which the Sudetenland was transferred from Czechoslovakia to Germany." A third control group received no priming vignette. Participants were now given a general background scenario modeled on the Falklands/Malvinas crisis of 1982. This vignette described two fictional countries, Afslandia and Bagumba, and the claims each had on a set of small islands. Afslandia represented Great Britain and Bagumba took the place of Argentina. At this point, participants were given sets of alternative cooperative or conflictual actions that the protagonists might take in the Afslandia-Bagumba

situation. Five separate pages in the questionnaire each contained 15 different actions. These ranged on a scale from 1 to 15 in cooperation-conflict intensity. A scale value of 1 represented the most peaceful attempt to resolve the tensions; 15 constituted an all-out military retaliation. The actions in each set were presented in a random order. On the first page that contained 15 alternatives, participants were instructed to choose the action that they felt Afslandia would take in response to Bagumba's invasion of the islands. On the next page, the participants were instructed to choose the action that they felt Bagumba would take, given that Afslandia had taken the action chosen on the first page. This procedure continued through five pages, with the actions alternating from one to the other country. Hence, Afslandia was given three actions and Bagumba two.

The participants' conflictual responses clearly showed <u>reciprocity</u> for the Bagumban attack. At the same time, participants' level of conflict and cooperation varied as a function of serial order, and there was a <u>decay</u> effect for each actor. Figure 1 shows that the participants' first selection involving Afslandia was usually most conflictual and the fifth selection was generally the most cooperative. The second and fourth selections, which involved Bagumba, also showed conflictual declines, though they were lower than the third selection, which involved Afslandia. Thus, participants became less conflictual with successive action selections for a particular country, and they were generally more conflictual in their selections for Afslandia than for Bagumba.

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Insert Figure 1 about here

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The Middle East Experiment

A subsequent experiment (Beer et al., 1995) represented a situation similar to that of the Middle East. Fifty-six undergraduate students received an experimental booklet, which provided a background scenario describing an ongoing situation of intransigent regional conflict. In this situation, two fictional countries, Afslandia and Bagumba, were locked in an historical structure of tension and hostility. Afslandia was supported by the United States, Bagumba by its simulated ally Calderon. The United States appeared in the scenario in order to anchor the participants' identities and identifications, so that they would know more specifically where they fit into the narrative. Hypothetical names were again used for the other countries in order to minimize the activation of extraneous images. Following the background scenario, half the participants in the peace treaty condition received a simulated news story that described the signing of "an historic peace treaty at Camp David". This treaty was signed by leaders from 10 nations who "pledged a cease fire in the war that has ravaged the region for the last 20 years." Various measures of military, economic, scientific and cultural cooperation were designed to reduce tensions and increase positive relationships between the United States and Afslandia, on the one hand, and Bagumba and Calderon on the other. The news story noted that the treaty was a step toward "a new and promising era of international cooperation and world order." The other half of the participants in the no peace treaty condition were not shown any simulated news story at this point. All participants then proceeded to the following section which informed participants that: "This news flash just appeared: Bagumba's artillery opens fire on Afslandia's military outpost near the border." Participants were asked to respond to the news flash by choosing one of the 12 possible action

alternatives "that would be best for the United States to support at this time in response to this news event." Participants were instructed to select their response by circling the appropriate number on a thermometer or scale "representing different levels of aggressiveness." After their first action response, participants proceeded to the next page of the test booklet and were informed that: "This news flash just appeared: Despite Afslandia's response, Bagumba's artillery continues to fire on Afslandia's military outpost near the border." Participants were again asked to respond to the news flash by choosing one of the 12 possible action alternatives "that would be best for the United States to support at this time in response to this news event." After this response, all participants were asked to respond three more times to exactly the same situation.

Figure 2 shows the mean level of conflict for all participants, which increases over each of the five action rounds, both in raw form and as the best fitting exponential function. The initial action selection begins at a level of conflict substantially lower than that of the act committed by Bagumba against Afslandia (which had a conflict level of 8). Conflict increases, however, to a level essentially equal to that of Bagumba's for subsequent actions, but not beyond. This point is supported by the fact that this peak level of conflict is achieved in Round 4 and then maintained in Round 5. Had a level of conflict equal to that of Bagumba's not been reached until Round 5, it would not be clear whether participants would be willing to go beyond that level to stop Bagumba's conflict if additional rounds had been available. The conflict asymptote suggests that participants are most comfortable supporting escalation to a point roughly equivalent to that of the enemy. The best-fitting value for the asymptote in the transformation equation was approximately equal to the weighted mean value of the news flash prompts describing Bagumba's actions across the five rounds.

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Insert Figure 2 about here

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This experiment replicates and complicates the dynamics of action and reaction that were explored earlier. There were important forgiveness, escalation, reciprocity effects. Participants reacted directly and incrementally to the conflictual behavior of others. In the earlier experiment, participants responded autonomously for two actors over five rounds, and the impetus for conflict gradually decayed. In the Middle East Experiment (Beer et al., 1995), the opponent's reported attacks were repeated. Participants' conflictual choices changed in response to this sequential priming. They were willing to support increasingly conflictual actions as previous Afslandian responses failed to stop Bagumba's military attacks. Incremental escalation of participants' choices occurred in response to attacks that continued over time, even though the attacks themselves did not escalate in conflictual intensity. Forgiveness is evidenced by the fact that participants reacted to attacks at a lower level of conflict initially. The conflictual responses gradually escalated to a reciprocal level, equal to Bagumba's attacks, but not exceeding them.

Terrorist Experiments

A final set of three experiments explored individual responses to reported fictitious international conflict involving terrorist attacks on the United States (Healy et al., 2002). Although there is an exhaustive library of work on terrorism, there is, to our knowledge, little previous experimental research on public reactions to terrorist attacks. There is a substantial political science literature focusing on terrorism (e.g., Freedman, 1983; Kegley, 1990; Nacos, 1996;White, 1997; Guelke, 1998; Kummamoto, 1999; Tanter, 1999; Volkan, 1999; Simonsen & Spindlove, 2000; Combs & Combs, 2001; Laqueur, 2001; O'Neill & Meyer, 2001; Whitaker, 2001; Combs, Slann, & Combs, 2002). Furthermore, there are several publications on the psychological processes underlying terrorism and its effects (see, e.g., Crenshaw, 1992, 2000). Such research has tended to focus on various dimensions of terrorism, in an effort to give it definition. Also included in this literature are attempts at description, explanation, and prediction of terrorist aims, organization, and behavior, as well as prescriptions for effective counter-terrorist activity within the constraints of democratic political norms. It is strange that, although the professed object of terrorist activity is to create fear and alarm in enemy civilian populations, little systematic empirical or theoretical investigation has been given to the dynamics of citizens' responses to terrorist acts. Our own experiments focused on differential participant reactions to reported attacks by terrorist and conventional military forces; attacks sponsored by democratic and non-democratic regimes; attacks that occurred in the American homeland or abroad; and attacks on various different types of targets.

Military v. Terrorist Attacks

In the first of these terrorist experiments, 40 undergraduate students received a background scenario describing two fictional countries, Afslandia and Bagumba, in conflict. The United States supported Afslandia; an opposing fictional superpower, Calderon, was an ally of Bagumba. All participants read the background scenario describing the conflict, and half read a subsequent simulated press release about the signing of a peace treaty between Afslandia and Bagumba. The other half of the participants received no such press release. Following this introduction, all participants received a simulated media news story reporting a Bagumban attack. Half the participants received reports of a Bagumban conventional military attack; the other read about an attacking Bagumban-based terrorist group. Participants were then asked to choose from among 12 alternative Afslandian political-military actions, choosing the one "that would be best for the United States to support at this time." Following the first response round, participants were presented with a second news flash (preceded by the statement, "This news flash just appeared") describing another Bagumban attack and were asked to select a second response. In all, participants were asked to respond on a total of five rounds to the same repeated news flash (Healy et al., 2002).

Participants chose increasingly conflictual responses to repeated Bagumban military or terrorist attacks. Responses to military attacks were initially greater than to terrorist attacks, despite similar descriptions. However, repetition of terrorist attacks eventually prompted participants to escalate their responses. Successive terrorist attacks eventually stimulated participant conflictual responses that surpassed those to military attacks. At the end of the response series, participants responded more conflictually to terrorist attacks than to military ones. (Figure 3).

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Insert Figure 3 about here
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Homeland, Democracy, and Target Effects

Having established relatively robust action-reaction effects, we wished to explore factors other than enemy attack that might influence participant responses. Two obvious choices were whether the attack occurred on the American homeland or abroad, and whether the attacker was associated with a democratic or non-democratic regime. We expected attacks on the homeland, sponsored by non-democratic nations, would be most likely to provoke hostile enemy images and conflictual responses.

We have already discussed the first terrorist experiment. In a second terrorist experiment, the fictional countries Afslandia and Bagumba disappeared from the background scenario, leaving only one fictional antagonistic country, Calderon, a superpower nation opposing the United States. Participants were given a background scenario describing an ongoing situation of conflict between the United States and Calderon. Conventional military attacks were also eliminated, leaving only terrorist attacks. The previous terrorist experiment had located all the attacks reported in the news flashes outside the United States; the second terrorist experiment included attacks made on targets inside and outside the United States (Healy et al., 2002), but there was no overall effect of this variable.

In this second terrorist experiment, we also introduced a regime variable, varying whether or not the antagonistic country Calderon had a democratic or nondemocratic government. One of the pillars of current international relations theory, as we discussed earlier, is the idea that democratic nations rarely engage in combat with each other. We extended image theory to make the prediction that this "democratic peace" phenomenon may be associated with reciprocal democratic images of identification, friendship, or alliance. We thus expected that conflictual reactions to any kind of attack should be weaker if the attacking nation were democratic (cf. Schafer, 1997). Contrary to our expectations, however, the nature of the sponsoring regime produced no overall change in the conflictual level of participant responses to terrorist attacks. It made no general difference if the state sponsoring the attack was democratic or not (Healy et al., 2002).

In a third terrorist experiment, participants were given the same background scenario as in the second terrorist experiment. For half of the participants, Calderon was described as a democratic nation, and for the other half it was described as a non-democratic nation. After reading the background scenario, half the participants read of a terrorist attack on United States citizens sponsored by Calderon. Unlike the second terrorist experiment, for all of the participants, the attack took place in Washington, DC. Participants were then presented with the 12 alternative political-military actions used in Experiment 2, and were asked to choose the one "that would be best for the United States to support at this time." Next, participants read a second news flash describing a new attack, this time on a different target also involving United States citizens. In all, participants were asked to respond on a total of six rounds to news flashes that differed with respect both to whether

the target was military or cultural/educational and to its specific site. The military targets were a naval ship, an air force base, and a military barracks; the cultural/educational targets were a library, an art museum, and the American University. Six different orders of these targets were used, all of which involved a regular alternation of cultural/educational and military targets. Results showed that attacks on military targets provoked more conflictual responses. Attacks on cultural or educational targets stimulated less conflictual reaction (Healy et al., 2002).

Personality and Gender

Another set of findings centers around personality and gender effects. Our research suggests that personality influences responses. Individuals with more dominant personalities tend to respond more conflictually to international attacks.

The Falklands/Malvinas experiment (Beer et al., 1987) measured two main personality dimensions: dominance-submission and experimenting-conservative personality traits. Participants were considered dominant or submissive, experimenting or conservative, based on a median split of their scores. Participants with more dominant personality scores tended, in general, to respond more conflictually to international attacks. We did not find a significant overall difference in conflictual response between experimenting and conservative participants.

Priming made a difference. As we discussed earlier, participants were divided into three groups: those who received a scenario describing the costs of war, those who received a scenario describing the dangers of appeasement, and a control group who received no prime. Figure 4 shows that dominant participants who received either one of the two war-related vignettes tended to respond more conflictually to international attacks than did submissive participants. Participants in the control group, who did not read a vignette about war, did not show the expected difference between dominant and submissive personality groups. Our overall results suggest that participants' propensity towards conflictual or peaceful behavior can be activated by a prior general war scenario. This activation occurs regardless of whether the scenario itself specifically discusses the costs of war or the futility of attempts for peace.

Insert Figure 4 about here

In the Middle East experiment (Beer et al., 1995), a strong background scenario of intransigent regional conflict replaced the war related primes of the Falklands/Malvinas experiment (Beer et al., 1987). The analysis of personality again concentrated on the same two main personality traits--dominance-submission and experimenting-conservative--and used the same scoring techniques. In the Middle East experiment, as shown in Figure 5, high dominance participants generally responded to international aggression more conflictually than low dominance participants. In the third terrorist experiment (Healy et al., 2002), as shown in Figure 6, participants with

personality dominance showed steeper escalation of conflict across successive attacks than did those with submissive personalities.

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Insert Figures 5 and 6 about here

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We were also interested in possible gender differences. In the Middle East experiment (Beer et al., 1995; Bourne et al.*,* 1996), there was no general gender variation in the action selections. Men and women, other factors remaining equal, generally responded to attacks with the same level of conflict although men responded with significantly more conflict than did women in the third terrorist experiment (Healy et al., 2002). Interestingly, our results in the Middle East experiment showed some gender-related personality differences. Men were significantly more dominant than were women. Men also tended to be more experimenting, but the difference between genders was not statistically significant for this personality trait. In the second and third terrorist experiments (Healy et al., 2002), however, men and women did not differ in their personality scores for the submissive/dominant dimension. Men were significantly more experimenting than women in these experiments, but this personality dimension was not directly related to attack response.

Peace Agreements with a Gender Difference

We had thought that responses to international attacks might be moderated when participants received an initial report of a peace treaty between the warring parties. In the Falklands/Malvinas experiment (Beer et al., 1987), initial scenarios focusing on war had primed dominant personalities toward more conflictual responses. An initial peace treaty report, we believed, might anchor the experimental series in a set of friendly images that might have similar priming effects.

The Middle East Experiment

In the Middle East experiment (Beer et al., 1995), following the background scenario, participants were divided into two groups. One group received a peace treaty vignette, and one did not. Contrary to our expectations, as mentioned earlier, the effect of a peace agreement was not evident, presumably because the description of the peace treaty was followed by reports of continuing attacks. There was no independent general "peace treaty" effect. There was little overall difference between the behavior of participants who received the initial peace treaty prime and the control group that did not. The existence of a current peace agreement between Afslandia and Bagumba had the least general influence of any of the variables manipulated on the level of conflictual response.

The two genders showed no substantial overall differences between the action selections; the general effect of gender on conflictual behavior was not significant. At the same time, the presence of the peace treaty affected the two genders in opposite ways. Reports of an initial peace treaty followed by international attacks stimulated different responses, and presumably different

images, in men and women, as Figure 7 shows. In the presence of a prior peace settlement, women were more forgiving about an opponent's future conflictual actions. Men reacted in the opposite way; violations of a peace agreement provoked more extreme conflictual responses than if there had been no agreement. When faced with an international attack, women appeared more concerned with preserving relationships, men with enforcing retribution. Men made more conflictual action choices when primed by a prior peace treaty than if they received no peace treaty prime. When women were primed with a prior peace treaty, they made less conflictual responses than in the absence of a peace treaty. These interactive findings suggest that the absence of overall peace treaty or gender effects is misleading. Peace agreements do have consequences; and gender matters. The effects occur only together; peace treaty effects appear to be peculiarly intertwined with those of gender.

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Insert Figure 7 about here

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Terrorist Experiments

In the second terrorist experiment (Healy et al., 2002), participants faced with ongoing attacks increased their conflict responses. The democratic peace hypothesis suggests that democratic citizens should respond more aggressively to attacks sponsored by non-democratic states than by democratic ones. Our research did not, on its surface, confirm this expectation. The form of government sponsoring the attacks seemed to have no overall influence on participants' reactions. Rather, conflict escalation depended on the combination of democracy and gender; the three-way interaction of government type, gender, and round was significant. After the initial attacks, men were more conflictual in responding to terrorist attacks by a democratic than by a nondemocratic nation, whereas the opposite pattern was found for women, as shown in Figure 8. During the last two rounds, men responded with more conflict to an attack by a democratic adversary than to an attack by a nondemocratic adversary, whereas women responded with more conflict to an attack by a nondemocratic adversary than to an attack by a democratic adversary. This outcome was replicated in the third terrorist experiment as shown in Figure 9. It is also consistent with predictions based on our earlier argument that the relationship between countries with a democratic form of government is tantamount to the existence of an implicit peace treaty between them. In previous experiments (Beer et al., 1995; Bourne et al., 1996), women seemed to place importance on maintaining prior peaceful contractual relationships between nations. Likewise, in the second and third terrorist experiments, women ultimately responded with less conflict in the face of an attack by a democratic country (implying an implicit peace treaty). In previous experiments, men seemed to emphasize retaliation for contractual violation. Similarly, men ultimately responded in the present experiments with greater conflict to an attack by a democratic country.

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Insert Figures 8 and 9 about here

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Prior Knowledge and Textual Materials

Our research program has produced knowledge about individual responses to ongoing international attacks. We have found that these responses varied according to the attack sequence, the identity of the attackers, the types of targets, and the locations of the attacks. Genders and personalities of the individuals also made a difference. We were also curious about the way that the individuals' prior knowledge and the textual materials with which they were presented might affect their reactions.

Prior Knowledge, Memory, and Crisis Recognition

In the Falklands/Malvinas experiment (Beer et al., 1987), division of participants into low and high prior political knowledge groups did not yield any significant main or interactive effects. Conflictual reactions by participants with high prior knowledge were similar to those by participants with lower knowledge. Scores on the prior knowledge test were significantly related to higher scores on the experimenting dimension of the personality test. There was, though, not a significant relationship between knowledge test scores and the dominance/submissiveness dimension of the personality test.

Scores on the questions at the end of the Falklands/Malvinas experiment concerning memory for the Afslandia-Bagumba scenario were quite high indicating that participants did read and remember the scenario when making their action choices. Participants in the World War I and World War II conditions also produced high scores on the questions concerning memory of those vignettes.

Near the end of the Falklands/Malvinas experiment, we also asked participants whether the Afslandia-Bagumba situation reminded them of any recent events in history. 27 of the 60 mentioned the Falklands/Malvinas crisis: 9 from the World War I group, 8 from the World War II group, and 10 from the control group. As Figure 10 shows, there was little difference between the dominant/submissive personality groups for those participants who recognized the crisis. On the other hand, participants who did not recognize the crisis responded in very different ways. Participants with more dominant personality types were substantially more conflictual than those from the more submissive group. Participants who identified the crisis seemed to react at least partly from their memory of actual historical events, rather than their personal inclinations. Participants who did not recognize the crisis appeared to react more from their personal predispositions.

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Prior Knowledge, Priming Cues, and Pattern Recognition

The Falklands/Malvinas experiment (Beer et al., 1987), as we have discussed, provided participants with a scenario modeled on the Falklands/Malvinas crisis and one of two vignettes recalling either the tragic slaughter of World War I or the sobering lessons of Allied appeasement before World War II. A control group received no priming vignette. The participants were then asked to choose from an inventory of possible cooperative-conflictual foreign policy acts in five sequential rounds. Both war vignettes produced more subsequent conflictual choices for participants with dominant (i.e., aggressive) personality attributes and more cooperative choices for participants with submissive personality attributes.

This experiment was replicated a year later in South Korea. One hundred South Korean college women were given both English and Korean language versions of the original materials (Park, 1988). The replication established cross-cultural and cross-gender stability of the earlier U.S. results. In both cases, the textual narrative or story in which the attack was embedded suggested that images helped determine pattern recognition and action for the participants.

Differential Interpretation of Identical Text

At the same time, the two studies suggest that text alone does not fully determine meaning. For example, textual understandings of experimenters and participants may be incongruous. Participants may see the same materials as being different.

At the beginning of each experiment described above, all participants read the same initial scenario, which the authors had modeled on the Falklands/Malvinas crisis. As noted earlier, the results were different for participants who did and did not recognize the connection between our scenario and the Falklands/Malvinas crisis. The vignettes only tended to activate underlying personality dispositions for those who did not recognize the historical situation. Priming of personality did not occur for those who clearly saw a representation of the Falklands/Malvinas crisis. For the group that did recognize the real-world referent of the experiment and its associated images, there was little difference between high- and low-dominance groups in the cooperative-conflictual mix of actions that they finally chose.

In the South Korean replication, 32 of the 100 participants also recognized the historical situation. As in the first case, such recognition suppressed personality effects that appeared in other participants; cognition replaced personality for participants who recognized the action scenario. The South Korean experimenters reported, however, that participants who recognized the situation recalled a different case than Americans. Instead of the Falklands/Malvinas, they believed that the

experiment represented the situation of Tokdo, a small set of islands between Japan and Korea. South Korean recognition produced effects on other experimental variables similar to those of the original American experiment, but the associated images were completely different. The same text, the scenario, stimulated the same response, recognition. But, in different contexts, the same response had very different meanings--the Falklands/Malvinas or Tokdo. These meanings were revealed only through subsequent items, asking whether participants recognized the scenario and what they recognized.

Common Interpretations of Different Texts

Participants may also understand different materials as being the same. The experimenters had developed the two original vignettes of World War I and World War II to prime participants about the costs of war and the costs of not going to war. Each vignette was supposed to convey a dramatically different message. The Korean adaptation added two new vignettes--the costs of the Korean War and the mistake of the Acheson line, which did not include South Korea in the zone of important American interest--to duplicate this distinction in a more familiar Korean context. In neither experiment did participants seem to discriminate between the two types of messages. In both experiments, students reacted to all of the priming vignettes in virtually identical ways. The main priming cue, the principal message that they seemed to receive, was war. Participants were not significantly affected by the flavor, directionality, and difference of the war message--the costs of action and inaction. The message that the experimenters had intended to send was not received as the experimenters had intended to send it. Different texts stimulated similar responses; the two vignettes apparently primed equivalent psychological images. From this perspective, the alternative versions might be considered to be non-discriminant and collapsed theoretically to one vignette.

From these results, it is evident that intended face meanings of a written scenario do not translate directly into cognitive images. Separate groups perceive texts in different ways. Authors and readers, American and South Koreans understood the introductory scenarios and the priming vignettes quite differently. The deeper causes of these differential perceptions are not clear. For example, it is easy to believe that cultural factors determined whether or not individuals recognized the initial scenario as the Falklands/Malvinas or Tokdo. Nevertheless, two South Koreans undertook the adaptation of the original experiment for the South Korean context, and they did not make this connection. Further, it is not immediately evident how the two apparently different war vignettes could stimulate similar responses, or what other kinds of vignettes might prime different images and give different results. The full dynamics of textuality, images, and our understanding of peace and war remain to be explored.

The Norming Experiment

As a supplement to the substantive experiments above, which sought to simulate international environments and events, we also conducted a norming Experiment (Beer et al., 1992) This experiment began with earlier work on the Conflict and Peace Data Base (COPDAB) (Azar, 1980), which had been created mainly for the coding of international events as reported in the media. We sought to adapt and expand the scaling of international conflict and cooperation for use in psychological laboratory experiments like our own.

Differentiating Actions and Messages

The Norming Experiment sought to establish rankings of both action and message items for international conflict and cooperation. For example, students were asked to discriminate between:

Nation A <u>uses</u> short-range nuclear weapons against the military units and installations of Nation B.

Nation A <u>states that it will use</u> short-range nuclear weapons against the military units and installations of Nation B.

The result was the creation of two fully independent, articulated scales ranking actions and messages of international cooperation and conflict. A major finding involves the comparability of the rankings of action and message scales. The two scales tap different dimensions. Yet participants generally ranked items from each scale in the same order. As Figure11 shows, the message that an action would be undertaken was generally ranked comparably to its actual implementation.

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International Conflict and Cooperation

In the norming experiment, as Figure 11 shows, participants had difficulty in differentiating cooperative items, but were much more successful with the conflictual ones. Experimenters' assumptions regarding cooperative items were again not transparent to participants. It appears that cooperation is much less understood than conflict; it is more complex, multidimensional, context dependent. Cooperative items contain nuances and ambiguities that convey crosscutting images. The conditions under which nations unite, collaborate, or bargain provide critical cues to the meanings of such acts, particularly when more than two nations are involved. The context of cooperation modifies meaning to a much greater extent than the context of conflict. International cooperation is not a continuous dimension with international conflict. It is instead heterogeneous, multidimensional.

International conflictual acts are much narrower -- more self-contained, self-defined -- than cooperative ones. Conflictual items are less ambiguous in meaning and more easily and consistently interpreted. International conflict scales relatively easily. It seems to be defined by a relatively well understood, clearly perceived linear dimension. Conflictual items, particularly at the upper end of the scale, tend to come from a single military dimension that is much easier for participants to discriminate and compare. It is defined by the graduated application of force in scope and intensity.

Nuclear Weapons

A last major finding from the norming experiment is that there is no psychological nuclear firebreak. Individuals perceive strong conventional military actions as more conflictual than low-level nuclear strikes. The experiment asked participants to rank the conflict level of hostile acts using three different nuclear criteria: battlefield nuclear weapons, middle range nuclear weapons, strategic nuclear weapons. These were compared with other conflictual items, including items incorporating "very hostile war (non-nuclear)," "occupation of territory," "many deaths and dislocations," and the capture of enemy soldiers. Specific items at this level included invasion, firebombing, and well poisoning which we interpreted as all-out conventional war. Participant rankings, presented in Figure 11, show a relatively continuous linear pattern as ascending from conventional to nuclear violence. At the same time, there is an inversion of the expected ranking of conventional and nuclear acts. Item 15, conveying the undertaking of all-out conventional war, was judged numerically more conflictual than item 16, involving the limited use of battlefield nuclear weapons.

These findings suggest that there are weak psychological barriers to nuclear war in the minds of college-age citizens. Our participants did not distinguish qualitative, threshold differences between high level conventional war and low level nuclear war. This reasoning reflects the traditional mindset toward nuclear weapons that has existed since the atomic bombing of Hiroshima and Nagasaki (Kull, 1988). In this perspective, nuclear weapons are basically a continuation of conventional weapons. President Truman, for example, was a World War I artilleryman who saw the atomic bomb in the context of his experience. "I regarded the bomb as a military weapon, "he said, "and never had any doubt that it should be used" (Bundy, 1988, pp. 60-61). The first President Bush, a World War II pilot, followed a similar logic when he vowed that the United States would not fight with one hand tied behind its back during the Persian Gulf crisis. Congruently, some American elites and a substantial portion of public opinion have favored violating the post-World War II nuclear taboo and using nuclear weapons if it will save American lives. Indeed the dividing line between nuclear and conventional weapons is not always clear, as in the use of depleted uranium shells for anti-tank or bunker-busting purposes. Our findings suggest an underlying public psychological foundation for blurring the nuclear threshold and active nuclear targeting of enemy assets.

Dynamic Decisions

Our experiments suggest that responses by citizens to international attacks are not necessarily based only on rational calculation of benefits and costs. We do not deny that such calculations are involved and may have an important influence. At the same time, rational choice models reflect only one dimension, one cognitive image, of the decision process. Other cognitive images are also available for activation to interpret international attacks. The controlled conditions of our psychological experiments on university students are obviously far removed from real time governmental foreign policy making and of mass opinion formation. Yet university students are young adults, coming of age to take their place in a modern participatory democracy. Our participants are all of voting age and generally vote in larger proportions than non-college citizens of the same age. Their reactions give us an early reading on likely responses of a coming generation of citizens and elite political decision-makers. To the extent that their responses reflect underlying dimensions of human psychology, moreover, they may illuminate more general decision processes.

Reactions to international attacks are dynamic and complex. Post-attack decision is a continuous process, and choices are influenced by a number of important factors. The psychological energy driving conflictual response decays without reinforcement by further attacks. If, on the other hand, such follow-on attacks occur, then responses incorporate escalation and restraint, amplification and inhibition, with virtual ceilings, reciprocity, and forgiveness. The sequential behavior of each partner unfolds in a rhythm that blends and integrates moves in a complex pattern like the underlying structural sequences of DNA.

Interpretations and meanings of international attacks are related not only to objective attacker behavior. They are also intertwined psychologically with the individual background characteristics and personal histories of the players. Gender is an important independent mediator of experience. The fact that men and women react differently to international conflict in the presence or absence of a peace agreement is one visible tip of the gender iceberg. Decisions also depend, to some extent, on personality. The effect of personality may be related to gender in some circumstances, but it is independent of it. As the Middle East experiment showed, men may, in some circumstances, tend to be more dominant, women more submissive. But dominance and submission are larger than this tendency; their effects cut across gender lines. War cues stimulate, activate dominant or submissive traits. Images associated with gender and personality help to produce variable decisions about and responses to external conflicts.

Prior knowledge and memory also supply images that inform cognition and decision. General prior knowledge is positively related to an experimenting personality, though neither the knowledge nor this personality characteristic were directly connected to other variables in our experiments. Specific prior knowledge, when actively connected to external events, informs pattern recognition and has a significant effect on cognition and decision. United States participants who recognized the historical situation in the Falklands/Malvinas experiment as the Falklands/Malvinas crisis, or South Korean participants who perceived it as the Tokdo incident, did not respond in terms of personality dominance-submissiveness. In these cases prior knowledge and memory played an important part in cognitive dynamics.

Framing particular attacks by references to specific prior war and peace experience seems to have differential effects. War primes activate the dominant-submissive personality dimension, but only in the absence of prior information about specific cases. Peace primes seem to activate gender-specific tendencies: a male focus on retribution toward friends who defect, a female emphasis on maintaining relationships with existing partners.

The democratic peace hypothesis does not flow smoothly through to our experimental results. There is no simple, general response tendency of all young democratic citizens to international attacks sponsored by democratic or non-democratic states. Yet, there are general gender interactions with attack-sponsor regime type that are analogous to the variations produced by differential peace treaty priming. There are also personality response differences that vary with the location of the attack at home or abroad.

Words are important mediators in reflecting and constructing meaning (cf. Beer, 2001; Cohen, 2001). Our experiments suggest that their influence on the cognitive interpretation of external events is less simple and straightforward than a naive view might suggest. The same black letter text produces different responses in different audiences. Different texts do not automatically produce different responses. Conflict actions and messages have a tighter, clearer focus than cooperative actions and messages. One disturbing practical aspect of this finding is the unfortunate fact that the transition from conventional to nuclear conflict may be smoother than many might believe or hope.

Our research has obvious implications for the current war on terrorism. Popular enthusiasm for the war depends on further terrorist attacks. Without them, public support will decline. If further attacks do occur, the public is likely to support reciprocal retaliation only up to the conflict level of the attacks. The objective profile of terrorist attacks -- reports, location, target type, sponsoring regime – will make a difference. At the same time, subjective predispositions -- and their associated images – of political leaders and followers will also matter. Leaders may vary substantially from the general public in gender, personality, prior knowledge, and current information. Broad political coalitions of ordinary citizens may interpret ongoing events differently from those who represent them.

Rational choice theory emerges from and reinforces an economic interpretation of decision. Such a perspective is important, both as a theoretical program for further empirical testing and as a normative guide to decision. Our experiments suggest that the rationalist project may profitably be complemented with a research agenda based in cognitive psychology and motivated by image theory. We have found that individual responses change over time. Some potentially critical variables will not affect behavior initially. But as new events occur, these variables begin to manifest themselves. Individual differences and associated images influence behavior. A cognitive perspective helps us to understand a bit better the dynamics and topology of democratic public response to international attacks and also the dynamics and complexity of the political decision process.

Some of our results may be interpreted in the language of rational choice, hopefully supplementing and enriching its understanding. For example, sequence effects may be seen as the result of probability updating from new information; gender and personality effects may fold into preferences. Such translation and convergence is welcome. At the same time, the experimental psychological tradition has an independent identity and validity. It can help to isolate and untangle dimensions of decision that may have been previously neglected or unconfirmed. It replicates previous work and updates longstanding concerns, linking a large body of important, prior empirical research with current findings. It also provides a lynchpin joining related experimental work in economics, politics, and other social sciences. Its exploration of the interpretive process, the evocation of meaning, creates an important link with the humanities. The methods of experimental psychology provide new answers to old questions and stimulate the formulation of new questions. It points in new directions for a dynamic science that will illuminate in a sophisticated way how actors make meanings and choices in the multiple levels, sectors, and issues of complex contemporary societies.

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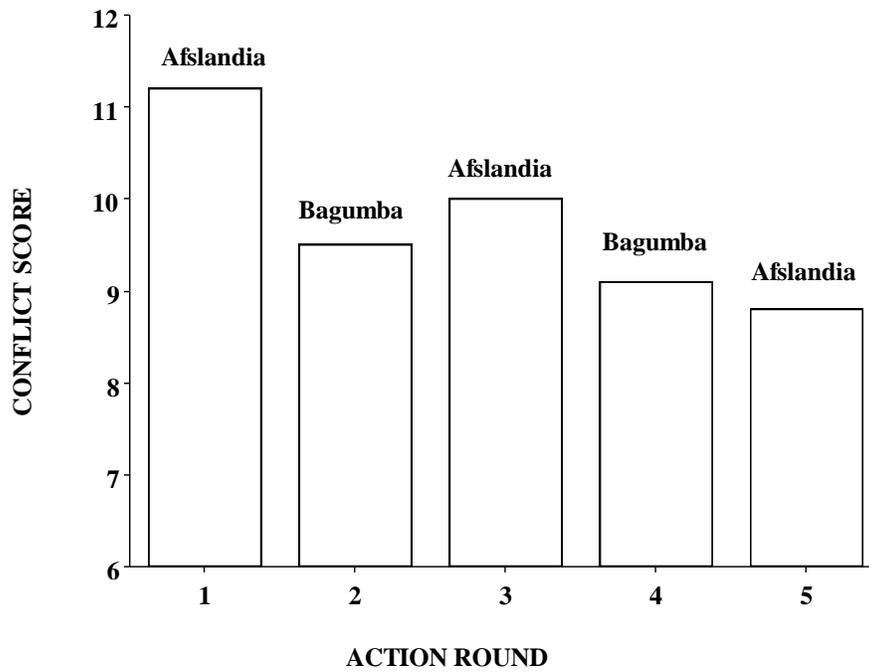
FIGURES

FIGURE 1
FALKLANDS/MALVINAS EXPERIMENT:
MEAN CONFLICT SCORES
RESPONDING TO MILITARY ATTACKS
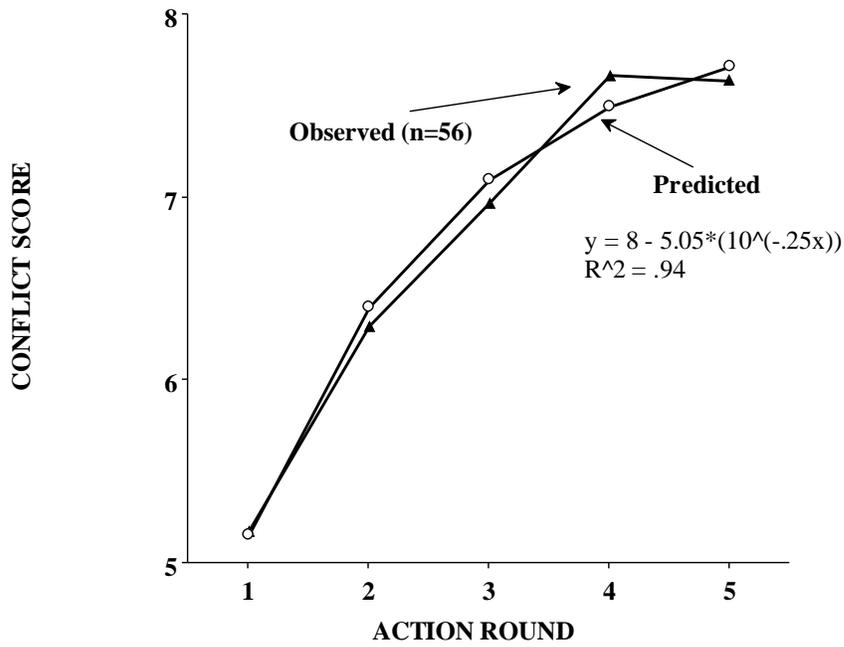**OVER FIVE ACTION ROUNDS**
(data from Beer et al., 1987)

FIGURE 2
MIDDLE EAST EXPERIMENT:
MEAN CONFLICT SCORES
RESPONDING TO MILITARY ATTACKS
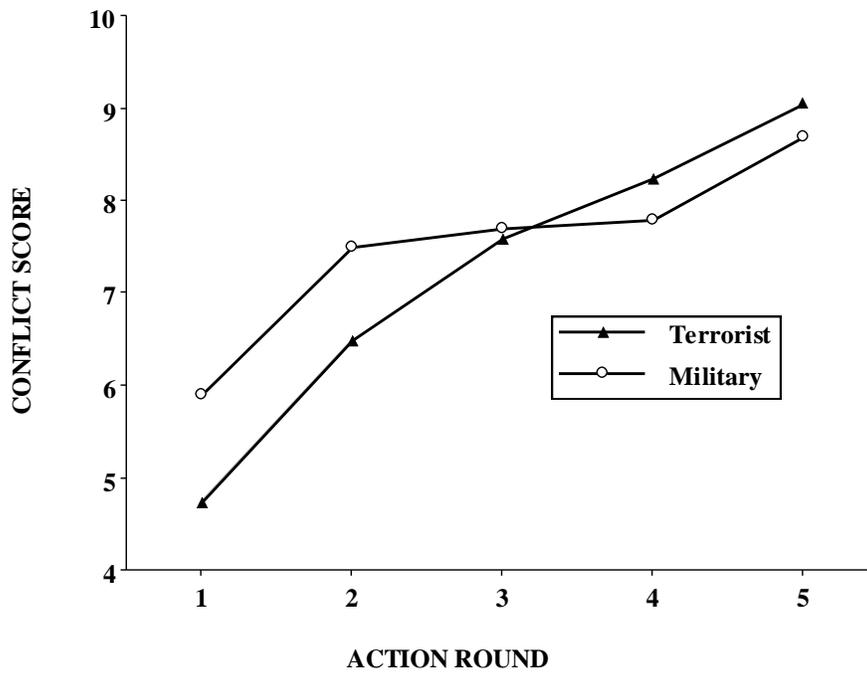**OVER FIVE ACTION ROUNDS**
(data from Beer et al., 1995)

FIGURE 3
TERRORIST EXPERIMENT 1:
MEAN CONFLICT SCORES
RESPONDING TO MILITARY OR TERRORIST ATTACKS
OVER FIVE ACTION ROUNDS
(data from Healy et al., 2002)
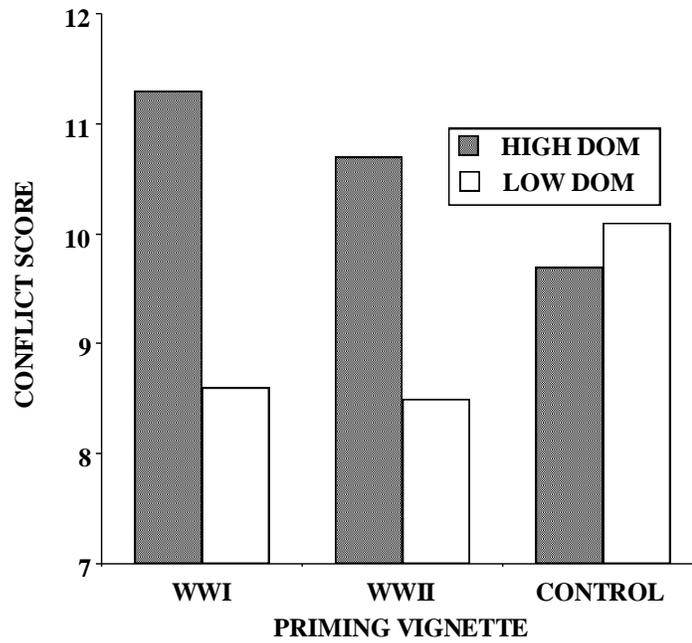
FIGURE 4
FALKLANDS/MALVINAS EXPERIMENT:
MEAN CONFLICT SCORES
AS A FUNCTION OF DOMINANCE GROUP AND PRIMING CONDITION
(data from Beer et al., 1987)
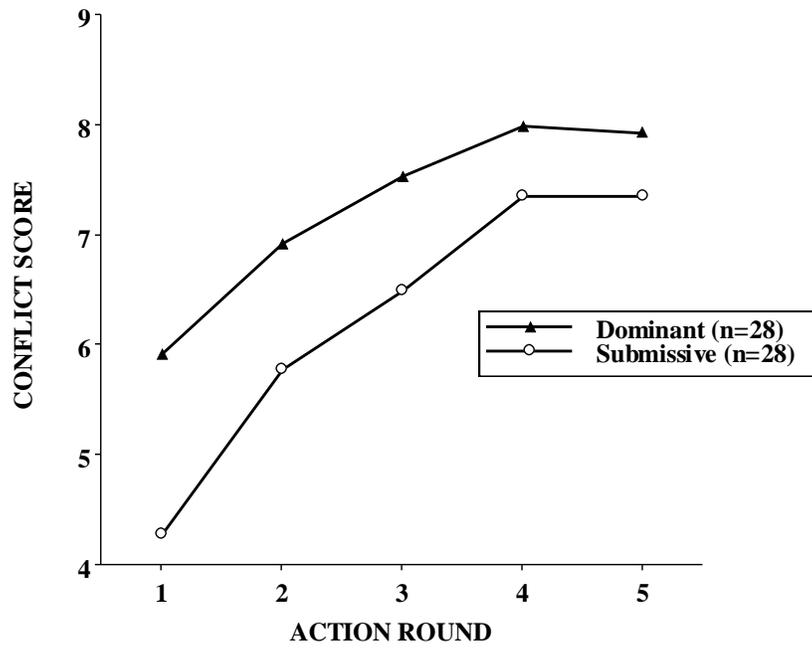
FIGURE 5
MIDDLE EAST EXPERIMENT:
MEAN CONFLICT SCORES FOR
DOMINANT AND SUBMISSIVE PERSONALITY TYPES
OVER FIVE ACTION ROUNDS
(data from Beer et al., 1995)
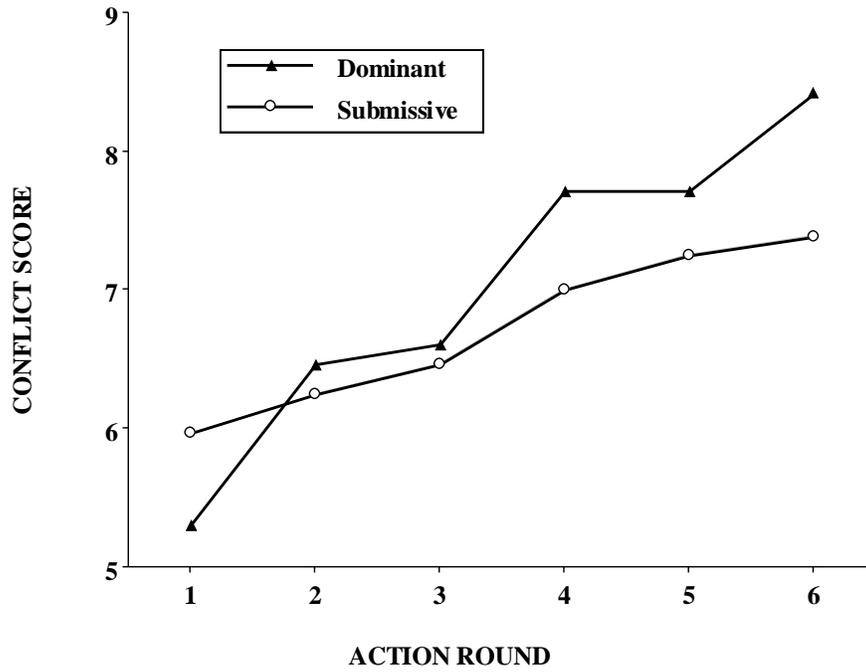
FIGURE 6
TERRORIST EXPERIMENT 3:
MEAN CONFLICT SCORES FOR
DOMINANT AND SUBMISSIVE PERSONALITY TYPES
OVER SIX ACTION ROUNDS
(data from Healy et al., 2002)
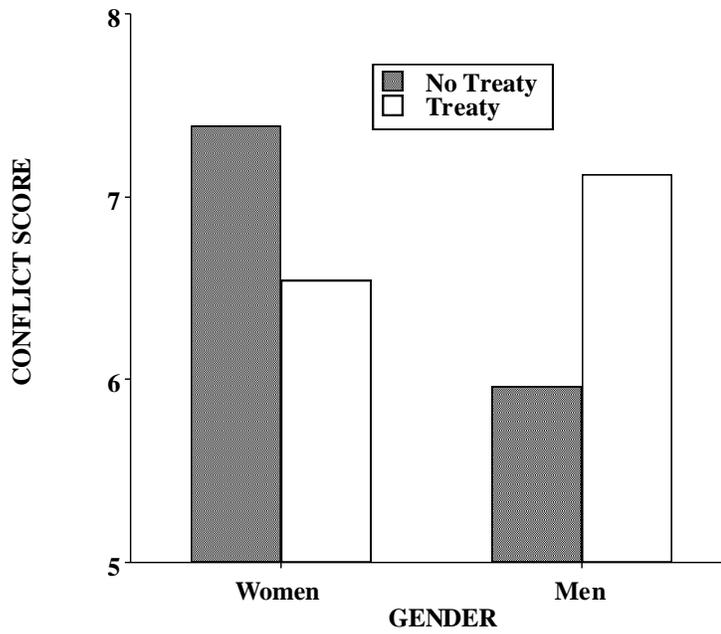
FIGURE 7
MIDDLE EAST EXPERIMENT:
MEAN LEVEL OF CONFLICT FOR WOMEN AND MEN IN THE
PRESENCE OR ABSENCE OF A PRIOR PEACE TREATY
(data from Beer et al., 1995)
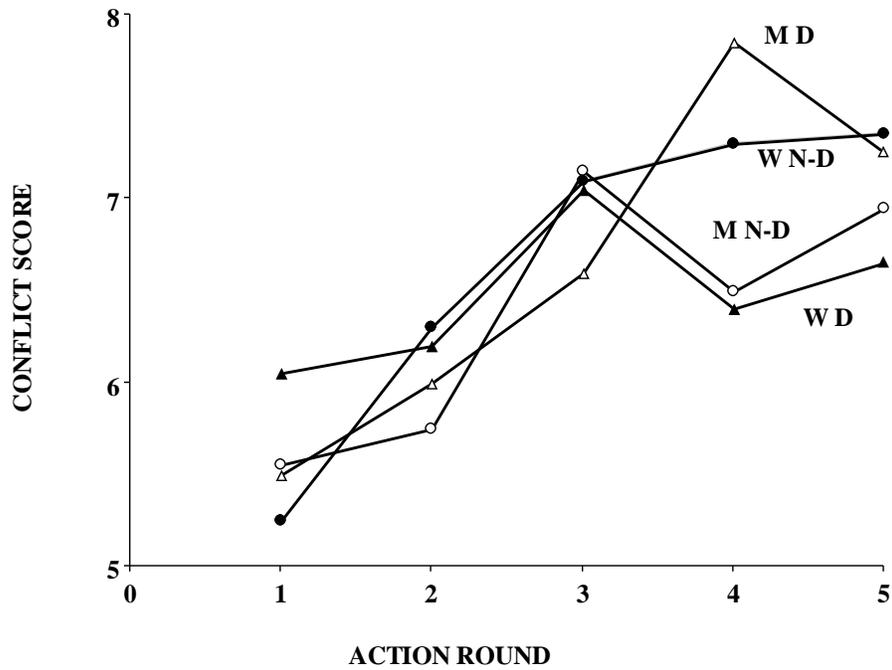
FIGURE 8
TERRORIST EXPERIMENT 2:
MEAN CONFLICT SCORES FOR WOMEN AND MEN
RESPONDING TO TERRORIST ATTACKS
SPONSORED BY DEMOCRATIC AND NON-DEMOCRATIC STATES
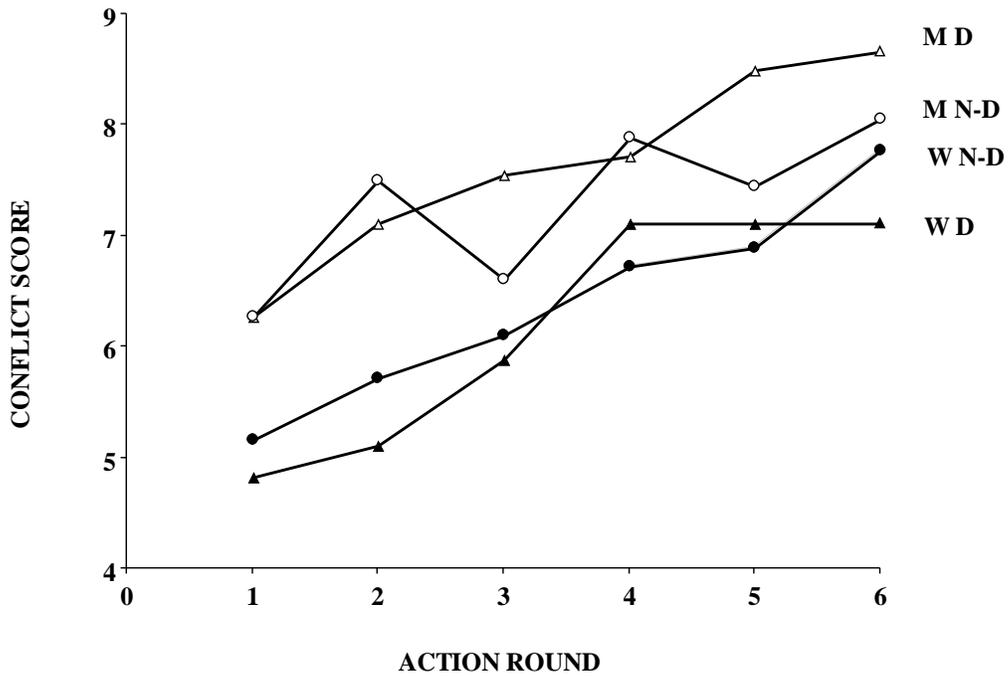**OVER SIX ACTION ROUNDS**
(data from Healy et al., 2002)

FIGURE 9
TERRORIST EXPERIMENT 3:
MEAN CONFLICT SCORES FOR WOMEN AND MEN
RESPONDING TO TERRORIST ATTACKS
SPONSORED BY DEMOCRATIC AND NON-DEMOCRATIC STATES
OVER SIX ACTION ROUNDS
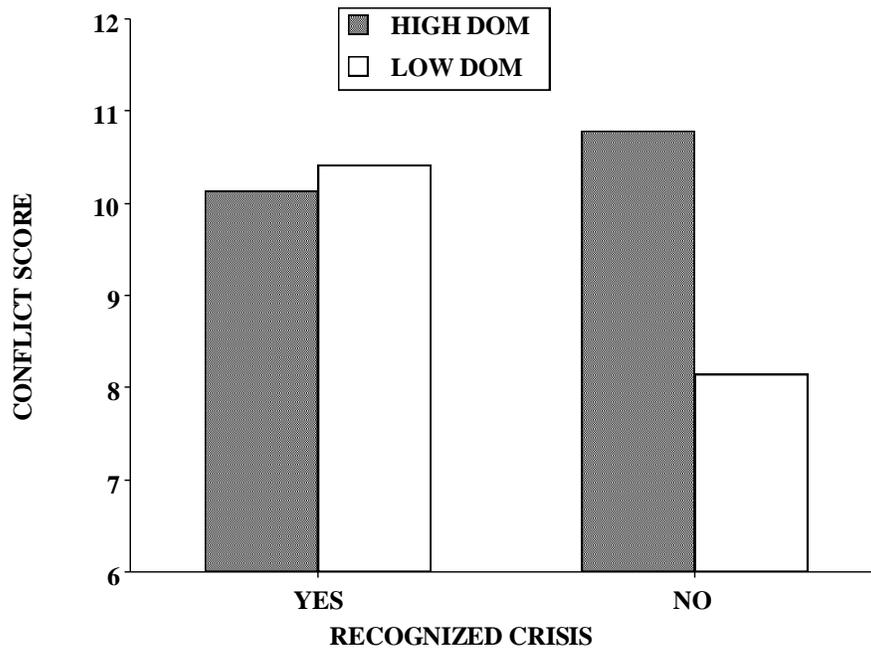(data from Healy et al., 2002)

FIGURE 10
FALKLANDS/MALVINAS EXPERIMENT:
MEAN CONFLICT SCORES FOR
DOMINANT AND SUBMISSIVE PERSONALITY TYPES AS A FUNCTION OF
CRISIS SCENARIO RECOGNITION
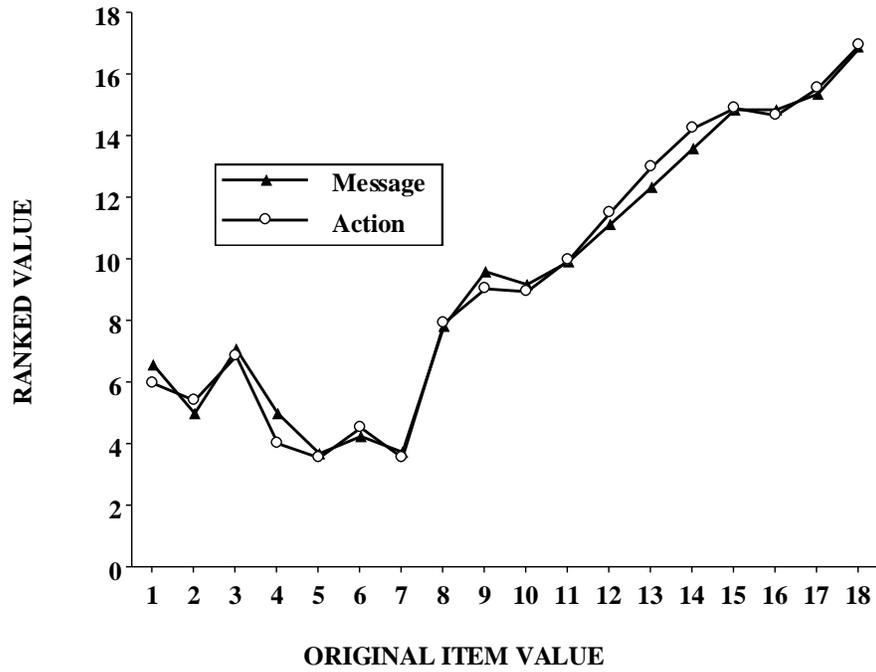(data from Beer et al., 1987)

FIGURE 11
NORMING EXPERIMENT:
ACTIONS AND MESSAGES,
MEAN UNDERGRADUATE STUDENT CONFLICT RANKINGS
FOR 18 EXPERIMENTER ITEMS
(data from Beer et al., 1992)