Decision-Making in the Face of Uncertainty: Attributions of Norwegian and American Officials* 

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Recent research suggests that when decision-makers are confronted with uncertainty they are more likely to engage in simple-minded thinking, such as the judgment heuristics that have been studied by attribution theorists. In this article we examine how foreign policy decision-makers in Norway and the United States struggled with the uncertainties that surrounded a series of incidents in northern Norway involving Soviet ships. The analysis of cognitive maps based on open-ended interviews with the decision-makers reveals that their central beliefs influenced the way they processed information and made decisions. As predicted by attribution theory, Norwegians attributed their own actions to situational constraints, but they were more inclined to explain Soviet behavior as a function of dispositional factors. The American officials, on the other hand, interpreted Norwegian behavior dispositionally, and Soviet behavior situationally. The policy implications of the attribution behavior of the decision-makers suggest a number of policy recommendations for both countries.

1. Introduction
From the period 18 June to 13 August 1978, more than a dozen Soviet ships were observed to be anchored or lying still in Norwegian territorial waters. In Oslo there was much concern about the incidents and what, if anything, they indicated about the Soviet Union. Although the Soviets contended that the incidents were 'chance mishaps', the sightings puzzled Norwegian officials.

Incidents of this type are not unknown in Norway. However, the large number of such incidents occurring within a short time period caused policy-makers to think of them as an entirely new problem. The boat incidents were quite unexpected and there was great uncertainty about how to interpret them. There were standard operating pro-

* This research was supported by the Norwegian Research Council (Grant No. 14.40.40.03), the Department of Policy Planning and Research of the Ministry of Foreign Affairs, Oslo, the National Science Foundation (Grant No. SOC 76-23763) and a travel grant from the Norwegian Ministry of Foreign Affairs and the Norwegian Information Service. We are most grateful for the research assistance provided by Anders Klepe, Ove Norreval, Aas-Jonna Norheim, James DeLear, James Lee, E. Nicholas Mil- lerm, Jerell Ronalt, and Proutmous Yanna.

cedures for how to inspect Soviet ships, but there were no SOPs for dealing with the situation at the political-military level.

The boat incidents are illustrative examples of what constitutes a major policy problem for Scandinavian countries vis-à-vis the Soviet Union. Incidents of one type or another — whether in the air, at sea, or on land — are now part of a continuing pattern of Soviet-Scandinavian relations. The submarine incursions are the most important case in point. Since 1977 the submarine incidents in Sweden have presented a major policy problem in the Swedish government's relations with the Soviet Union (Agrill 1986). The same applies to Norway as well — but not nearly to the same extent. The incidents share a common characteristic: They leave decision-makers more or less completely in the dark as to the motives and intentions behind Soviet actions.

In this article we examine how foreign policy officials in Norway and the United States struggled with the uncertainties that surrounded the boat incidents in 1978. To aid our investigation we will draw on social-psychological theory, particularly attribution theory, and use cognitive mapping in...
Fig. 1. Map showing locations of sightings.
conjunction with computer simulation as our analytical tool. The analysis of the empirical case, however, is not our sole objective. We will analyze Norwegian and American reactions to the boat incidents, not only to see how policy decision-makers cope with uncertainty, but also to study the policy implications of how a small country and its superpower ally handle ambiguous information about their adversary.

1.1 The boat incidents

The sightings of Soviet vessels in Norwegian territorial waters gave rise to much uncertainty on the part of the Norwegians and their superpower ally. Little information was available about the incidents beyond the actual sightings. There were, however, many conflicting interpretations offered by the police, journalists, political leaders, government officials, as well as "experts" on military security. Some argued that the Soviets were engaging in espionage; for example, they were dropping sensors for monitoring NATO submarine traffic. A few of the ships were boarded by Norwegian authorities and espionage equipment was found. Others argued that the Soviets were applying pressure on Norway, because of its strong support for NATO and increased Norwegian activity in the North. As the incidents were occurring, Norwegian and American officials were discussing a proposal to pre-position stockpiles of equipment in northern Norway for use by American troops in a military crisis. Some observers, on the other hand, accepted Soviet explanations for the incidents. According to this viewpoint, there was no pattern to the incidents—the ships stopped for a variety of reasons: engine trouble, sick crew members, bad weather, and shopping expeditions to Norwegian ports. Another explanation introduced the notion of 'heightened vigilance'. Previously, Soviet vessels lay anchored without being noticed by the local population, or, in any case, they did not report it. Was the local population influenced by the generally heightened awareness in Norway of events in the North? Soviet boat traffic had not changed; rather, Norwegian perceptions of it were different.

Although the number of sightings was substantially higher than 'normal', all of the ships were civilian vessels, such as the tug boats, lumber carriers, freighters, river boats and research ships. Unlike the submarine episode in Sognefjord in 1972 (Holst 1974), and other submarine 'hunts' in Norway and Sweden, the sightings in the summer of 1978 were based on tangible observations. There is no doubt that Soviet ships were there — they were photographed and shown on Norwegian television.

Norwegian reactions to the incidents changed dramatically over time. In early July the statements of officials described the events as provocative and deliberate. By the end of the month, however, most officials had become cautious, attributing the incidents to coincidence and normal boat traffic (Heradstveit & Bonham 1981, pp. 22–33). This shift in the way officials understood and diagnosed the problem may be a consequence of reports issued by Norwegian military intelligence, which ruled out much of the speculation on technical grounds and analyzed time series data on Soviet boat activities in the North. On 2 August 1978, Thorvald Stoltenberg, Under-Secretary of State at the Ministry of Foreign Affairs, told Arbeiderbladet that Norwegian authorities attached importance to the assurances by the Soviet Ambassador that his country would tighten up regulations applying to Soviet shipping in Norwegian territorial waters. Stoltenberg also said that Norway regarded the matter as settled and did not expect similar episodes to occur in the future. No official Norwegian protests were delivered after this assurance was given by the Soviet Union. Two of the incidents were accepted as force majeure by the Norwegian authorities, i.e., there were compelling reasons for being in Norwegian territorial waters. The Soviets apologized for the third incident, and, in the fourth, the ship's captain was served with a fine that was accepted.
1.2 Uncertainty

In their classic study of organizations, March & Simon (1958) define uncertainty in terms of the completeness and accuracy of the decision-maker's knowledge. In a situation of uncertainty, the decision-makers cannot assign definite probabilities to the occurrence of particular consequences (p. 37). The probability distribution for future consequences is uncertain, since it is difficult to anticipate future actions taken by other actors. More recent discussion of uncertainty suggests that the phrase 'decision-making under uncertainty' is too imprecise because the specific type of uncertainty is not identified (Milburn & Billings 1976). March (1981) made a distinction between two kinds of ambiguities associated with organizational decision-making: Ambiguities of history are a consequence of the problem of interpreting the past. History is difficult to interpret, especially when the sample of observations is small and there are no experimental controls (p. 226). Ambiguities of preferences result from imprecise, inconsistent, and unstable goals within an organization (p. 227). For our purposes it is more useful to distinguish environmental uncertainty from outcome uncertainty. Environmental uncertainty seems from ambiguity that is inherent in the event (March & Olsen 1976, p. 18). Environmental actions are frequently ambiguous because of difficulties of observation and conflicting interpretations (Daft & Macintosh 1981, p. 219). Outcome uncertainty, on the other hand, refers to disagreement about the existence and nature of cause-effect relationships. It is 'the state arising from predicting outcomes from the actions taken to achieve them' (Leblebici & Salancik 1981, p. 580). When individuals disagree about the consequences of an alternative action, there is high outcome uncertainty.

Uncertainty, whatever its source, can be a severe constraint on decision-making. In the best of circumstances, where information is not ambiguous and outcomes are predictable, decision-making in an organizational context may not meet the assumptions of rational choice. In the face of uncertainty, rational choice is often the exception rather than the rule (Mouz 1981, p. 704). When confronted with uncertainty, decision-makers are more inclined to engage in simple-minded thinking, such as the judgmental heuristics that have been studied by attribution theorists (Keller 1973; Tversky & Kahneman 1974, Nirbett & Ross 1980). Preconceived notions have a greater impact on thinking. 'Just as actors tend to perceive what they expect, so - in conditions of great uncertainty - they will tend to predict that events they want to happen actually will happen, i.e., overrate the probability of a desirable events' (Shlain 1976, p. 359). Furthermore, under conditions of uncertainty, a decision-maker's thoughts tend increasingly toward violent-like modes of coping (Jans & Mann 1977, p. 61).

The boat incidents can be characterized as a situation of environmental uncertainty rather than outcome uncertainty. Throughout the period of the sightings, Norwegian officials attempted to explain the incidents to themselves and the public. There was little or no speculation about the consequences of possible Norwegian actions, such as increased surveillance, diplomatic protests, or consultations with NATO allies. Norwegian action was dependent on the interpretation of the events in the North. If the incidents were coincidental or contrary to Soviet regulations, then the Soviet government could not be held directly responsible. In that case Norway might insist that the Soviets should tighten up their regulations and enforce them more effectively. If the incidents were intentional, on the other hand, the problem from the Norwegian viewpoint was much more serious. A definite provocation might suggest a different response. Preventing the North from developing into an area of East-West conflict is vital for Norwegian interests. Norway wishes to prevent unnecessary friction in its relationship with
the Soviet Union, and, most of all, wishes to avoid international crisis situations that could arise from pending questions with the Soviet Union.

2. Research approach

In this section we will describe how we conducted our research on the behavior of Norwegian and American decision makers as they coped with the uncertainties of the boat incidents. Our theoretical approach and analytical tools come from social psychology. Specifically, our tradition views the mind as an information-processing system, where "individuals orient themselves to their surroundings by acquiring, storing, appraising, and utilizing information about the physical and social environment" (George 1980, p. 56). In our analysis we will rely heavily on attribution theory, which focuses on man as a "naive" scientist who attempts to understand the attributes and motives of other actors in order to anticipate their behavior. We will examine the attributions of Norwegian and American policy-makers, as well as the structure of their underlying beliefs about the Soviet Union in the context of the boat incidents. To accomplish these research objectives, we will construct cognitive maps from interviews with policy officials, and use a cognitive process model of decision-making to analyze the cognitive maps and draw inferences about the information processing of the officials. We will begin by describing our sampling procedure and our data collection techniques. This will be followed by a discussion of the processing of the cognitive map data by the cognitive process model and a presentation of the results of the analysis.

2.1 The interviews

To make our research as authoritative as possible, we made a list of the political officials, both in Norway and the United States, who were either directly involved with or knowledgeable about the boat incidents. From this list, which was constructed from press reports and the suggestions of "insiders", we contacted officials and made appointments for interviews. Although we were unable to contact all key officials in Oslo and Washington, D. C., we did complete interviews with Kåre Willoch, who later became Prime Minister of Norway, the Minister of Defense, the State Secretary at the Ministry of Foreign Affairs, as well as Assistant and Deputy Assistant Secretaries and senior NSC staff members in the United States. The Norwegian interviews were conducted in October and November 1978. Three months later, in March 1979, interviews with the American officials were completed.

For these interviews we developed an explicit framework to elicit responses. The interview questions were designed to stimulate thinking not only about the boat incidents, but also current and future relations between Norway and the Soviet Union. We also worded the questions so as to provoke enough discussion about causes and effects of Norwegian and Soviet behavior to provide a data base for the cognitive mapping. Each interview began with a background question about the boat incidents, which was followed by a question that challenged the officials to justify their view of the situation. The next group of questions was designed to elicit their perceptions of the antecedent causes and possible consequences of the incidents. From there we went onto a series of questions about Norwegian-Soviet relations in general. This line of questioning gave the officials the opportunity to reveal their beliefs about the factors that influence Norwegian and Soviet behavior in the North and the circumstances under which Norwegian-Soviet relations might change. Finally, we asked them to assess various policy alternatives (e.g., 'If Norway were to pursue a harder line toward the Soviet Union, what do you think would happen?') and describe the policy line they thought Norway ought to pursue.

All but two of the interviews were electronically recorded. Verbatim transcripts prepared from the tape recordings were co-
ded by the authors to construct a cognitive map for each official (see below). Not all of the Norwegian cognitive maps were used in the analysis, however. From the twenty-two interviews conducted in Norway, we selected the eight highest-ranking officials in the Ministry of Foreign Affairs (n=4) and Ministry of Defense (n=4). This sample was almost a perfect match with the American sample of ten officials from the Department of State (n=4), the National Security Council Staff (n=2) and the Department of Defense (n=4).

2.2. Cognitive mapping

Although cognitive mapping is only one of several content-analytic techniques that can be used to analyze information processing by policy decision-makers, it offers some advantages for our research problem. Because we want to examine the relationship between the interpretative structures of policy officials and the way they deal with uncertainty, traditional techniques, like content analysis, are inappropriate. As Axelrod (1976) points out, ‘even the most fully developed form of content analysis is still essentially a counting procedure with limited usefulness for analyzing the structure of the relationship between the concepts’ (p. 7).

For our purposes, the operational code approach is a somewhat more useful analytical tool (George 1969). This approach focuses on the central philosophical and instrumental beliefs that ‘precede and accompany the decision-maker’s choice of action’ (George 1979, p. 10). Unfortunately, the operational code approach, with its emphasis on general beliefs, is difficult to apply to a specific problem such as the Soviet boot incidents.

Cognitive mapping, on the other hand, is a procedure for ‘giving a systematic representation of the causal assertions that a decision-maker uses in connection with a specific problem’ (Herbstveit & Narvesen 1978, p. 77). Both the content of a decision-maker’s beliefs about a policy problem and the location of these beliefs in his or her cognitive structure can be portrayed in a cognitive map, a definite advantage for the analysis of attributions. To judge whether an attribution is ‘irrational’ or ‘dispositional’, for example, requires knowledge of its content and form (Van der Pligth 1981, p. 99).

The cognitive process model, which we will use to analyze the cognitive maps of the Norwegian and American officials, offers additional advantages. The model describes the cognitive maps to locate beliefs about the prior and immediate causes of an action. These beliefs, which are displayed by the model as ‘explanatory paths’, provide the analyst with the context of the action from the decision-maker’s point of view. Depending on the context, e.g. what events were immediately prior, the source of an action might be attributed to either internal (dispositional) or external (situational) factors. Because the cognitive process model also uses cognitive maps to simulate decision-making processes, our analysis can go beyond the representation of the knowledge of ‘naïve scientists’ to include the study of knowledge as utilized by decision-makers.

3. The attributions of decision-makers

The study of attribution as a separate area within social psychology can be traced back to Heider (1958), who examined the process of causal attribution in the perception of others. Since the publication of Heider’s early work, attribution theorists have studied the efforts of people to explain and draw inferences from behavior — their own behavior and the behavior of others. The individual, according to this viewpoint, is a ‘constructive thinker’ or ‘naïve scientist’ who searches for the causes of events and draws conclusions about people and their circumstances as a basis for action. In the field of international relations, Jervis (1976) has applied attribution theory to foreign policy decision-making, Herbstveit (1979) has studied how Arabs and Israelis perceived the causes of the Middle East conflict, and Larson (1985) has used applied attribution theory to explain the containment policies of the cold war.
The 'naive-scientist' framework is not the only way of thinking about attribution. Attributions serve other functions, in addition to cognitive mastery. The range of motives hypothesized to affect attributions includes the need to protect or enhance one's self-esteem (e.g., Miller 1976; Zuckerman 1979), to create a favorable impression to others (e.g., Bradley 1978; Orvis et al. 1976), and to believe in a just world (e.g., Lemer & Miller 1978) (Tetlock & Levi 1982, p. 69). This research suggests the operation of self-esteem motives or 'self-serving biases' in attribution (Bradley 1978).

3.1 The fundamental attribution error
Jones & Nisbett (1971) have observed the tendency of attributors to emphasize dispositions (abilities, traits, or motives) when explaining the behavior of others, while using situational factors (external pressures and constraints) to explain their own behavior. Ross (1977) and other writers have referred to this phenomenon as 'the fundamental attribution error', a pervasive tendency in social attribution.

Although the 'fundamental attribution error' has been confirmed in laboratory research, it is, nevertheless, the subject of controversy. One can argue that the term 'error' is a misnomer. Is an involved actor in a better position to identify the cause of his or her own behavior than that of an unin- volved observer? Monson & Snyder (1977) have stated the case for the actor. First, they argue that actors have knowledge of their own inner states, attitudes, and dispositions. Such information is normally not available to observers. Second, actors are usually more knowledgeable about their own behavior in other situations and at other times than observers. Third, actors focus their visual attention on their environment rather than their own behavior. This analysis suggests that the actor's attributions of cause would be more often 'correct' than those of the observer' (Monson & Snyder 1977, p. 94).

Other research emphasizes the importance of the evaluative aspect — the social desirability of behavior — in the attribution process. Taylor & Koivumaki (1976) found that the actor does not generally view his or her behavior more situationally than the behavior of others. Instead, the actor explains his or her behavior in terms of dispositions (e.g., I won because I'm strong), but dismisses negative behavior as being caused by the situation (e.g., I was outnumbered). Likewise, Heradstveit (1979) found little evidence for the 'fundamental attribution error' until the evaluative aspect of behavior was taken into account. Arab and Israeli respondents, however, were overwhelmingly dispositional when observing their own good behavior (and their opponent's bad behavior) and situational when attributing their own bad behavior (and their opponent's good behavior).

These findings seem to be consistent with motivational or functional approaches to the study of attribution. Self-esteem theory, for example, predicts that people will make internal attributions for success and external attributions for failure (Tetlock & Levi 1982; Bradley 1978). This tendency may be especially strong when people feel emotional about an issue. The presence of an audience, moreover, may affect the attributions people communicate to others. According to the self-presentation position, people often communicate attributions designed, consciously or unconsciously, to gain public approval and to avoid embarrass- ment' (Tetlock & Levi 1982, p. 78).

3.2 Summary of attributional tendencies
Table I summarizes attributional tendencies of actors compared to observers. The table, which is based largely on the discussion of Monson & Snyder (1977), predicts whether or not attributions will tend to be more dispositional or more situational, depending on the circumstances. According to the table, attributions of actors ought to be more dispositional than those of observers if the situational context is chosen or constructed by the actor; situational cues are
neutral to or inhibit behavior; an act is associated with such subjective choice; the outcome is inticded; behavior and outcome are consistent with prior experiences; behavior has prior dispositional causes known only to the actor; and behavior is socially desirable. The attributions of observers, on the other hand, will be more situational than those of actors in the same circumstances.

3.3 Effects of stereotypes on attributions
The research of Bodenhausen & Wyer (1985) has examined effects of stereotypes on attributions. They found that transgressions (or socially undesirable behavior) that are consistent with a cultural stereotype are attributed by observers to dispositional factors. In such cases the observers are also more punitive in their interpretations. For example, American observe that the PLO have hijacked an aircraft or ship. Because this behavior is consistent with the American stereotype of the PLO, the act will be attributed to dispositional factors and retaliation will be advocated. Transgressions that are contrary to a cultural stereotype, on the other hand, will be attributed to transitory or situational factors, and observers will be more lenient. An Israeli attack on PLO headquarters, for example, which is contrary to the American stereotype of Israel as a peace-loving country, might be attributed to situational factors (e.g., 'it was necessary for the Israelis to retaliate').

3.4 Theoretical and methodological problems
The study of attribution is hampered by the absence of a falsifiable cognitive theory—a theory that specifies when people will use particular rules of causal inference or the extent to which prior beliefs will influence the interpretation of incoming evidence’ (Tetlock & Levi 1962, p. 74). There is no comprehensive theoretical structure to explain the ‘fundamental attribution error’ or any other cognitive heuristics. Although plausible explanations are offered by researchers, ‘plausibility’ is largely a function of some formal or informal rule of judgment. For example, the ‘fundamental attribution error’ has been attributed to the representativeness heuristic: ‘Actors (and their dispositional factors) may be a more representative cause of behavior than are situations, because it is, after all, the actor who does the acting’ (Nisbett & Ross 1980, p. 122). The same researchers have also explained the phenomenon by the availability heuristic: ‘The actor is an easily available explanation of this action because of his perceptual proximity to his action’ (p. 122). Others have suggested that self-serving biases explain the social attribution process: Individuals tend to accept responsibility for positive behavioral outcomes and to deny responsibility for negative behavioral outcomes’ (Bradley 1976, p. 68).

Methodological problems have also hampered research on social attribution. Findings are based, for the most part, on laboratory experiments in which captive populations, such as college undergraduates, are asked to explain their actions or the behavior of others in hypothetical or fairly trivial situations. Forced-choice, closed-ended scales are almost always used to record attri-
butions; therefore, 'the type of attributions that can be made (and even whether or not to make attributions at all) is generally de-
termined by the experimenter' (Lau & Rus-
sell 1980, p. 29). The external validity or gen-
eralizability to 'real world' settings of many of these experiments is open to ques-
tion. One exception is the research of Lau & Russell (1980), who coded newspaper ac-
counts of baseball and football games to study the attributions of coaches and play-
ers.

Research based on the use of free-choice and open-ended scales, on the other hand, encounters coding problems. Coding is of-
ten done on the basis of the form of the re-
sponse, rather than the content (Van der Plight 1981). For example, the statement 'John doesn't want to go to the soccer match because of hooliganism' might be coded as a situational attribution. However, the re-
sponse 'John will not go because he is afraid of getting mixed up in a fight' might be co-

This coding problem is frequently encoun-
tered because the situational-dispositional
distinction is not really a dichotomy. Most
situational explanations imply assumptions
about relevant dispositions. 'He did it for the
money' can be restated as the disposi-
tional attribution. 'He did it because he is
money hungry'. Hence, the situational-dis-
positional distinction may reflect differences
in language rather than thought (Monson &
Snyder 1977, p. 20).

Ross (1977 p. 5) has attempted to solve
the problem by formulating the following
definitions of situational and dispositional
attributions:

**Situational attribution.** Those expla-
nations that state or imply no dispositions
on the part of the actor beyond those ty-
peicall of all or most actors.

**Dispositional attributions.** Those expla-
nations that state or imply something
unique or distinguishing about the actor.

Although the proposal by Ross may not
have solved the problem (Lau & Russell
1980), it does offer some guidance. The
situational-dispositional distinction may
not represent a dichotomous classifica-
tion, but we can make judgments and
code the perceiver's weighting of the
relative importance of each (Monson &
Snyder 1977).

### 3.5 Results

In our Norwegian interviews, policy offi-
cials were given the opportunity to explain their
actions as well as the behavior of the Soviet
Union. When the Norwegians contemplated
the meaning of their own actions (self-attri-
bution), the perspective was that of the ac-
tor. Alternatively, their comments about Soviet behavior were constructed from the
vantage point of an outside observer.

Jones & Nisbett have proposed that 'there
is a pervasive tendency for actors to attrib-
ute their actions to situational require-
ments' (1977, p. 80). Table I also elaborates
this proposition by describing specific condi-
tions under which an actor's attributions,
as compared to those of an observer, tend
to differ. When applied to the 1978 boat in-
cidents, most of the specific circumstances
fit neatly under the right-hand column, sug-
gestig that the Norwegians will tend to at-
tribute their own actions to situational fac-
tors. For example, the context of the boat
incidents was not chosen by Norway, the
Norwegians perceived little choice in the
matter, and the outcome of the boat in-
cidents was not intended by them. Although
the Norwegians had experienced incidents
with unidentified submarines, never before
had they become aware of so many civilian
vessels in their territorial waters in so short a
time span. Finally, most of the Norwegians
perceived that although their responses to
the incidents, the public acceptance of So-
viets assurances, was undesirable (e.g., 'ap-
pologies'), it was rooted in situational cir-
cumstances (e.g., the strategic situation in
the North).

Table II shows the percentages of attribu-
tions in the aggregate Norwegian cognitive
Table II. Dispositional and Situational Attributes of Norwegian and Soviet Behavior as a Percentage of Total Attribution (%)

<table>
<thead>
<tr>
<th>Dispositional/Situational</th>
<th>Norwegian Attributes</th>
<th>Soviet Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norwegian Behavior</td>
<td>N = 28</td>
<td>n = 38</td>
</tr>
<tr>
<td>Norwegian Attributes</td>
<td>31</td>
<td>68</td>
</tr>
<tr>
<td>American Attributes</td>
<td>65</td>
<td>35</td>
</tr>
<tr>
<td>Norwegian Behavior</td>
<td>n = 17</td>
<td>n = 36</td>
</tr>
<tr>
<td>American Attributes</td>
<td>11</td>
<td>89</td>
</tr>
</tbody>
</table>

map which were either dispositional or situational. As predicted, Norwegian attributions of their own behavior were mostly situational (96%) rather than dispositional (4%). A separate analysis of the antecedent and consequent paths which emerged from the simulation results (not shown here) shows the same pattern of attributions.

When Norwegians offer explanations of Soviet behavior, they are observers, not actors. Therefore, Norwegian attributions of Soviet behavior are more likely to emphasize dispositional factors than the explanations of their own actions. Norwegian stereotypes of the Soviet Union may reinforce this tendency. Soviet behavior is undesirable, and it is consistent with the cultural stereotype of the Soviet Union as an aggressive power. Given this perception of the Soviet Union, Norwegians, as observers, will attribute Soviet behavior to dispositional factors (see the discussion of effects of stereotypes on attributions in Section 3.3).

The results shown in Table II confirm the prediction: 72% of Norwegian attributions of Soviet behavior were dispositional (compared to 4% for their own actions), while 68% were situational (compared to 96% for their own actions). It should be noted, however, that this is only a tendency to attribute the opponent’s behavior to dispositional factors — more than two-thirds of Norwegian attributions of Soviet behavior were situational.

The American officials were outside observers of both Norway and the Soviet Union. Their attributions should coincide with the general principle that observers tend to attribute good behavior to dispositional factors, while explaining bad behavior in terms of situational factors (Taylor & Koiyuma 1976). In the boat incidents, Norway, a close American ally, was the victim of aggressive Soviet tactics designed to protect their strategic assets in the North. Once again, the results support the predictions of attribution theory. American officials were more inclined to explain Norwegian behavior by referring to dispositional (65%) rather than situational (35%) factors. On the other hand, the Americans were more likely to attribute Soviet behavior in the boat incidents to situational (89%) as compared to dispositional (11%) factors. A separate analysis of the simulation results also shows the strong tendency of Americans to view Soviet behavior situationally. The Americans seem to have empathy for the Soviet Union and say “We would do the same thing, under the circumstances.” It may be that superpowers regard their own actions as standard and normal, while they consider the behavior of small powers as odd and deviant.

4. Policy preferences
In the last phase of our cognitive process simulation, the model searches for the balanced explanation of the problem to find all policy options (or P-concepts) which have a direct linkage and calculates the impact, as portrayed in the explanation, of the policy options on policy values (or V-concepts). From the resulting impact matrix, the policy options are assigned a rank order which takes into account the value preferences of the decision-makers. Value preferences can be obtained directly from policy officials by asking them to rank V-concepts in terms of their importance, or they can be supplied by the researcher who wants to represent vari-
Table III. Norwegian Policy Preferences with 'Hawkish' and 'Dovish' Value Rankings

<table>
<thead>
<tr>
<th></th>
<th>Hawkish Value Rankings</th>
<th>Dovish Value Rankings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Determinism</td>
<td>Norway's Freedom of Action</td>
</tr>
<tr>
<td>1. Consistent Norwegian Reaction</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>2. More Cautious Norwegian Reaction</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>3. More Severe Pattern of Action; Cooperation with our Allies</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>4. Compromise Policy; Following the Principles of International Law</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>5. Retrenchment on the Part of Norway</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6. Centralizing the Right of Expression</td>
<td>-</td>
<td>-</td>
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</table>

out policy orientations. For the simulations of the boat incidents, we supplied the model with two different value preferences, one 'hawkish' and one 'dovish'. The hawkish Norwegian simulation run, for example, was based on the following value rankings: 1. Determinism; 2. Norway's freedom of action; 3. Stability in the area; 4. Norwegian-Soviet relations.

Table III shows the policy preferences, as well as the policy impact matrix, that emerged from the simulation which used these value rankings. Note that three out of the four most preferred options refer to the tone of the Norwegian reaction to the boat incidents. A 'consistent Norwegian response' is clearly favored, since the option is perceived to have a positive effect on Norwegian values. The second ranking option, a 'more cautious Norwegian action', is perceived to have a positive impact on all but one policy value, stability in the area. A 'more severe Norwegian pattern of action', which is tied for third place with 'cooperation with our allies', is believed to have a negative effect on an additional policy value, Norwegian-Soviet relations. Hence, the hawkish simulation results in a low ranking
<table>
<thead>
<tr>
<th></th>
<th>H Awish Value Rankings</th>
<th>Norwegian Strength</th>
<th>Strengthening Norwegian Interest</th>
<th>Norwegian-Soviet Interest</th>
<th>Norwegian-Soviet Stalemate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Norwegian Association with NATO Initiatives; Pre-positioning</td>
<td>+ - + + -</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Norway Takes a Harder Line</td>
<td>+ - + - -</td>
<td></td>
<td></td>
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for the conciliatory option 'reticence on the part of Norway', as well as 'centralizing the right to expression', the least preferred option.

Table III also displays the policy impact matrix for the 'dovish' value rankings. These rankings were produced by putting the hawkish value priorities in reverse order (see above). While 'consistent Norwegian reaction' stays in first place, the dovish values result in dramatic changes in the preference offer for the other options. 'Compromise policy' and 'following the principles of international law' move up from fourth place in the hawkish simulation to second place in the dovish version. 'Reticence on the part of Norway' moves up from fifth place to third place, while a 'more severe pattern of reaction' and 'cooperation with our allies' drop from third place to last place in the dovish version. Clearly, the policy preferences generated by the simulation are very sensitive to the value positions of the decision-makers.
Table IV shows the policy preferences of the American officials with respect to hawkish and dovish rankings of policy values. For the hawkish simulation, we assumed that the Americans would favor the following value priorities for Norway: 1. Deterrence; 2. Norwegian strength; 3. Strengthening Norwegian resolve; 4. Norwegian interests (local); 5. Norwegian-Soviet relations.

Supplied with this set of value rankings, the simulation produced a strong preference for two policy options: 'Norwegian association with NATO initiatives' and 'pre-positioning of NATO equipment', which were perceived to have a positive effect on all policy values, except for Norwegian-Soviet relations. 'Norway takes a harder line' ended up on second place, because of one additional negative impact, harm to Norwegian interests. Two other options, 'Norwegian ascension of sovereignty' and 'unilateral moves by Norway', ranked third and fourth in preference, largely because of the beliefs that these policies would fail to deter the Soviets. Two dovish options were tied for last place: 'Norway backs down' and 'Norway follows a softer line'.

The policy preferences resulting from the dovish simulation, also shown in Table IV, suggest a desire for Norwegian ascension of sovereignty. As might be expected, the dovish options 'Norway backs down' and 'Norway follows a softer line' moved up in this version from fifth place to second place. The two policies which refer to NATO, 'Norwegian association with NATO initiatives' and 'pre-positioning of NATO equipment'), drop down to third place because of the belief that they would harm Norwegian-Soviet relations.

The least preferred options in the dovish version are 'unilateral moves by Norway', which remains in fourth place, and 'Norway takes a harder line', which drops from second to fifth place. Thus, in the American simulations, the hawkish and dovish value positions do not differentiate as well between policy options as in the Norwegian simulations. Were it not for one value, Norwegian-Soviet relations, the American policy preferences would not show any sensitivity to alternative value positions.

5. Implications and conclusions

We began our research by identifying the boat incidents as a situation of high uncertainty. This resulted in a comparative analysis, using cognitive mapping and a computer simulation model, of how officials handled uncertainty. Our tools helped us to describe the content as well as the structure of Norwegian and American thinking about the incidents. In this section we will go beyond our analysis to discuss some of the policy implications that occurred to us in the course of our research.

Our analysis of Norwegian and American interpretations of the boat incidents has employed cognitive psychology to help gain an understanding of information processing and decision-making in the face of uncertainty. The crux of our argument is that is that officials process information often has policy implications. George (1980) has described the consequences of this proposition as follows:

Distorted information processing ... can contribute to an unjustified and dangerous lowering of one's guard — as, for example, when warning indicators of a military attack are rejected as inconsistent with a pre-existing belief. Or, equally, it can lead to an unjustified and costly raising of one's guard — in, for example, when an opponent's failure to cooperate is misread as further evidence in support of a pre-existing belief regarding this hostility (p. 65).

The boat incidents produced both kinds of responses. According to the statements of Norwegian officials reported in the mass media, the initial Norwegian reaction was heightened vigilance: and the explanations that were offered to the public emphasized the seriousness of the situation. Our American interviews revealed that in Washington officials also 'raised their guard' and devoted much effort to the problem, although they did not make their views public. After the boat incidents both the Norwegian and
American officials lowered their guard. The Norwegians played down the incidents and stated that the problem was not a serious one, after all. The Americans, although they were confused by the new Norwegian interpretation, accepted it, at least officially, and relaxed.

5.1 Reliance on primitive beliefs

The proposition that some beliefs are more central than others in a person's cognitive system is well established in social psychology. The most central beliefs, primitive beliefs, are those that are accepted as givens and from which other beliefs are derived — beliefs about the credibility of one's senses, beliefs about the credibility of some external authority, and values or preferred ends (Bem 1970, p. 5 and p. 16).

Human beings, when faced with uncertainty or lacking substantive evidence, will tend to rely on their primitive beliefs to develop an explanation of the situation and guide their behavior. The greater the uncertainty, the more likely primitive beliefs, including values, will influence the inferences that are made as well as the choice of actions. Unfortunately, the reliance on primitive beliefs in a situation of uncertainty often introduces so much bias into information processing that inappropriate decisions are made, resulting in the failure to meet objectives.

In our analysis of Norwegian and American behavior during the boat incidents, we found evidence that the primitive beliefs of officials influenced the way they processed information and made decisions. Throughout the boat incidents 'crisis,' Norwegian officials, including spokesmen for the Government, relied heavily on their basic beliefs about the Soviet Union to interpret the 'facts' that were being fed to them by the police and the mass media. All too early the incidents were characterized by some as 'provocations' and 'gun boat diplomacy,' while others considered them to be coincidences for which the Soviet Union should not be blamed. This suggests that there was a definite problem in the subjective treatment of information. Only after 26 July, when new reports from military intelligence attempted to put the boat incidents into the context of previous Soviet behavior, did officials acknowledge that there were competing conceptions of the incidents.

Our simulation analysis also provides support for the hypothesis that officials were relying too much on their primitive beliefs to interpret ambiguous information and make decisions. This analysis showed, for example, that the policy preferences of the Norwegian officials are very sensitive to values, which suggests that primitive beliefs were playing a major role at the choice among alternative stages of the decision-making process. While American policy preferences were not as sensitive to values, the simulation reveals that the thinking of US policymakers continued to be based on their primitive beliefs about the Soviets even after the United States had officially accepted the Norwegian view that the boat incidents were coincidental.

Policy Recommendations: Norway

1. Increase the scope of objective assessments of Soviet intentions. This might be achieved by encouraging speculation about Soviet motives and allowing it to continue for a longer period of time.

2. Provide a context for the 'facts' about Soviet behavior. This might be done by intelligence analysts who are aware that just to state facts is not sufficient — the facts should be put in a broader analytical framework. During the boat incidents this was done by military intelligence, but other analysts should make this a practice as well.

Policy Recommendations: United States

3. Increase receptivity to explanations of Soviet behavior which challenge existing beliefs and policy preferences. This might be achieved by a more
careful examination of the explanations and evidence offered by others, particularly those who are in a position to observe the Soviet Union from a different perspective.

5.2 Consistency striving
One way to cope with uncertainty is to rule out discrepant information and strive for consistency. George (1980) contends that 'it is not inappropriate... to regard man as, among other things, a 'consistency seeker' and goes on to argue that 'this penchant for consistency seeking may hamper him in his role as a problem solver. This is true not only for individual decision-makers but also for small decision-making groups and organisations' (p. 61).

In both the Norwegian and American explanations of the boat incidents we found a high degree of cognitive consistency, even when compared to other studies of foreign policy decision-making. Furthermore, we observed that as the explanations patterns changed over time, a growing consensus emerged among decision-makers in both countries as to what was the 'right' explanation of the problem. While the absence of conflicting points of view makes decision-making more efficient, it does not necessarily enhance the quality of the decision. In fact, there is considerable evidence that the absence of conflicting views often results in decisions that are later regretted (Jansis 1982).

Policy Recommendations: Norway and the United States

4. Increase vigilance in information processing to reduce the natural tendency to seek consistency. This might be accomplished by an awareness of seven indicators that George (1980, p. 63) proposes to alert policy makers to excessive consistency striving:
   (a) when the beliefs preserved thereby are not well-grounded to begin with; or
   (b) when the individual (or organi-

zation) relies upon inappropriate beliefs or irrelevant rationalizations in order to ward off incoming information; or
   (c) when the assimilation of the new information into pre-existing beliefs involves violations of generally accepted rules for treating evidence; or
   (d) when the individual fails to notice events of obvious importance that contradict his beliefs or theories; or
   (e) when he displays unwillingness to look for evidence that is readily available which would pose challenges to existing policy beliefs; or
   (f) when he refuses to address the arguments of those who disagree with his interpretation of events; or
   (g) when he repeatedly shifts rationales on behalf of his policy in response to new facts

5. 'Enrich' Norwegian and American thinking about the North. This might be achieved by exposing policy officials to alternative perspectives. We do not necessarily mean that people with different value preferences have to be included in the decision-making process, because this may produce a different ranking of policy preferences (as we observed in the 'hawish' and 'divish' simulation runs) without resulting in a better understanding of the problem. Instead, policy officials need to be exposed to a greater variety of beliefs and perspectives.

5.3 Attrubutions
Embedded in our research on the boat incidents is the assumption that the policy maker is a 'naive scientist' who is searching for causal explanations that will provide a basis for action. Because the task of making sense out of the world is formidable and the policy maker has little training in the areas
of epistemology and methodology, he or she will tend to rely on a limited number of rules of thumb, such as the 'fundamental attribution error', to help simplify the task explaining the actions of others, particularly when these actions are clouded by uncertainty.

Heradstveit (1979) has argued that the 'fundamental attribution error' is a major barrier to the resolution of conflict through negotiation. Each side believes that an opponent's good behavior was forced on him by circumstances, while his bad behavior stems from his hostile intentions. Under these circumstances it is very difficult for either side to show good faith and be given credit for doing so by the other party. Moreover, because of this attributional tendency, cognitive change is much less likely to occur. 'The actions of the opponent that confirm the negative image will be readily assimilated and those that disconfirm the image will be dismissed as strategic and temporary' (Kelman 1980, p. 212). For example, in the summer of 1978 some officials in both Norway and the United States interpreted the boat incidents as evidence for their belief that the Soviet Union was attempting to exert pressure on Norway, while they refused to give serious consideration to Soviet explanations of the incidents.

Our analysis of the causal attributions of officials who followed the boat incidents showed that there was a tendency on the part of both Norwegians and Americans to make attributions that were consistent with the predictions of the 'fundamental attribution error'. The Norwegians, as actors, viewed their own actions as being caused by situational factors, but they were more inclined to attribute Soviet behavior to dispositional. The Americans, as observers, explained Norwegian behavior in terms of dispositions, and Soviet behavior as a consequence of the situation. This implies that the Norwegians, as compared to the Soviets, have more freedom of action in the North.

Policy recommendations: Norway
6. While it is possible that Norwegian actions are more constrained by the situation than those of the Soviet Union, alternative interpretations might be considered. It is a human tendency to attribute one's own actions to the situation, while explaining an opponent's behavior in terms of dispositions.

Policy recommendations: United States
7. Although the Soviet Union, like the United States, is highly constrained by situational factors, Soviet behavior in a specific case might be an exception.
8. Norway may have more freedom of action in the North than the Norwegians realize. However, they may see themselves operating with little or no freedom of action.

Despite the fact that the official Norwegian explanation of the boat incidents plays up the possibility of coincidence, it is obvious from our research that this is still a matter of disagreement in Norway. Many decision-makers articulate the official view but have grave personal doubts. In the United States the view that the boat incidents were part of a deliberate pattern is widespread. However, in the absence of any firm evidence and out of deference to their Norwegian allies, the Americans also support the official Norwegian line. Under these circumstances, one can ask, 'How convincing is the official explanation?' If the Norwegians want to maintain this interpretation, they ought to look for additional arguments and evidence.

NOTES
2. The Norwegian interview schedule included additional questions about how information about the boat incidents was processed within the organizational setting. These questions focused on who was involved and what sources of information were available. The responses to these questions were not used to construct the cognitive maps.
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