A Cognitive Analysis of Japan's 1941 Decision for War

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Previous studies have found that the cognitive performance of government decision-makers declines in crises that result in war. This decline has been attributed to crisis-produced stress which leads to simplification of information processing. The present study tested the disruptive stress hypothesis in the context of Japan's decision for war in 1941. Two content analysis techniques, integrative complexity coding (Schroder et al.,) and cognitive mapping (Axelrod, 1976) were used to analyze the translated records of statements by key Japanese policy-makers. Comparisons between statements made in the early and late periods of the 1941 crisis yielded only weak evidence of cognitive simplification. Interestingly, however, the social context in which statements were made significantly affected the complexity of cognitive performance: Statements made in Liaison conferences (in which policies were formulated) were significantly less complex than statements made in Imperial conferences (in which policies were presented to the Emperor for approval). Theoretical and methodological implications of the results were discussed.

Numerous writers have argued that psychological concepts and variables can make important contributions to our understanding of foreign policy decision-making (e.g., de Rivera, 1968; Etheredge, 1978; Holsti, 1976; Jervis, 1976; Kelman, 1965a, 1965b). In contrast to organizational and social systems approaches to foreign policy, psychological analyses work primarily at an individual level of analysis in

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which the focus is on the processes by which the personalities, goals, and cognitive processes of key decision-makers influence policy.

Holsti (1976) has suggested that the choice of level of analysis should not be simply a matter of taste or theoretical preference; there are certain problems and conditions under which one or another level is most appropriate. According to Holsti (1976), psychological analyses are most likely to be fruitful: when the situation is nonroutine and requires more than the application of standard operating procedures; when the decision is made by high-level government leaders who are relatively free from organizational and other constraints; when the situation is highly ambiguous; when information overload necessitates simplifying strategies; when unanticipated events occur; and when stress impairs the ability of decision-makers to perform complex cognitive tasks. Under these conditions psychological processes are likely to have their most pronounced influence on decision-making.

One important psychological perspective on foreign policy decision-making is that afforded by models of cognitive processes (e.g., Simon, 1976). Such models attempt to account for decisions by tracing the information-processing performance of the individuals making the decisions. Unlike the traditional rational actor model of foreign policy, which views decision-making as a utility-or value-maximizing process (e.g., Morgenthau, 1973; Schelling, 1960), cognitive models do not assume the existence of totally rational decision-makers. Rather, cognitive models deal with variables such as information load, uncertainty, and stress—variables which can strongly influence cognitive processes that underlie decision-making.

Cognitive process models appear to provide a more accurate picture of decision-making than does the rational actor model. The last twenty years of research on individual and organizational information processing indicates that decision-making frequently falls short of ideal rational actor standards (Janis and Mann, 1977; Simon, 1976; Slovic et al., 1977). Of special interest in the present context is the common finding that under conditions of high stress and high task complexity, decision-makers often make low-quality decisions. Evidence for this proposition is not limited to laboratory research, where the well-known inverted-U relationship between cognitive performance and stress has repeatedly been documented (Cofer and Appley, 1964; Lazarus, 1966; Schroder et al., 1967). There is also considerable evidence that the
cognitive performance of foreign policy-makers suffers in highly stressful crises. For instance, researchers have noted that decision-makers in crises tend to consider less information in evaluating policy options (Hermann, 1969; Holsti, 1972), to concern themselves only with the short-term consequences of policy options (Holsti, 1972; Paige, 1968), to rely heavily on stereotyped images of opponents and on historical analogies (Janis, 1972; Jervis, 1976; Milburn, 1972), and to see possible crisis outcomes in terms of absolute victory or defeat (Milburn, 1972). These findings on crisis decision-making have often been interpreted as support for what Hermann and Brady (1972) termed the "disruptive stress" hypothesis: namely, the view that crisis-produced stress leads to defective cognitive coping by individual policy-makers.

The objective of our study was to test the validity of the disruptive stress hypothesis by focusing on the Japanese decision to go to war with the United States in 1941. Because Japan was so clearly overmatched in resources for undertaking a war with the United States, many analysts have emphasized the influence of psychological factors, especially stress, on the Japanese decision for war (e.g., Hosoya, 1967; Miwa, 1975). In terms of Janis and Mann's (1977) conflict model of decision-making, the situation confronting the Japanese leaders was likely to lead to a "defensive avoidance" pattern of decision-making. The Japanese leaders perceived: (1) serious risks associated with the major policy alternatives open to them (continuing negotiations with the United States, attacking both the United States and Southeast Asia, or attacking only Southeast Asia); (2) a need to avoid postponing decisions (because of the United States's trade embargo which cut Japan off from critical raw materials such as oil and scrap iron); (3) personal responsibility for making the crucial decisions as lying with themselves (cf., Pelz, 1974; Russett, 1967). Under such conditions, the Janis and Mann model expects "defective" or "nonvigilant" decision-making, characterized by psychological bolstering of the chosen alternative and biased searching for supportive information.

Our study employed two objective content analysis procedures to assess the effects of stress on the decision-making of key Japanese leaders through the latter half of 1941: integrative complexity coding (Schroder et al., 1967) and cognitive mapping (Axelrod, 1976). The integrative complexity coding system defines complexity as a joint
function of both differentiation and integration. Differentiation refers to the number of characteristics or dimensions of a problem that are taken into account in decision-making. For instance, a decision-maker may analyze policy options in an undifferentiated manner by placing them into only one of two categories: the "good, patriotic" policies and the "bad, defeatist" policies. A more differentiated approach would recognize that policy options can have multiple, often contradictory effects that cannot be classified on a single evaluative dimension—for example, effects on different political constituencies, various sectors of the economy, military strength, and the strategies of one's opponents. Integration refers to the development of complex connections among differentiated characteristics. (Differentiation is thus a prerequisite for integration.) The complexity of integration depends on whether the differentiated characteristics are perceived as operating in isolation (low integration), in hierarchical interaction (medium integration), or according to multiple, complex, and perhaps flexible patterns (high integration).

The second coding system, cognitive mapping, is useful for describing the interrelationships among the beliefs that decision-makers hold about policy issues. Cognitive maps are composed of two basic elements: concepts, which are represented by points, and causal beliefs linking the concepts, represented by arrows between points. It is possible to derive a number of structural indexes from cognitive maps (see Content Analysis Procedures section for details) that on theoretical grounds should be related to integrative complexity. By deriving such structural indexes from cognitive maps, it is possible: (1) to assess the effects of crisis-produced stress on a wide range of measures of cognitive structure; (2) to assess the convergent validity of the integrative complexity construct.

If the disruptive stress explanation is correct, Japanese decision-makers' statements should have decreased in integrative complexity as war approached. Previous studies using the integrative complexity system have found trends toward simplification in other crises that resulted in war. For instance, Suedfeld et al., (1977) found that the complexity of Arab and Israeli speeches to the United Nations regularly fell prior to major wars in the Middle East. There is also evidence that diplomatic communications exchanged in crises that culminated in war
were less complex than those exchanged in crises that were resolved peacefully (Suedfeld and Tetlock, 1977). Unfortunately, the conclusions of these earlier studies were based solely on analyses of public or official government policy statements—statements which may reflect propaganda goals more than decision-making processes. It is unclear to what extent such findings generalize to the private deliberations of policymakers. The present study provides some evidence on this point.

METHOD

CONTENT ANALYSIS PROCEDURES

We employed the integrative complexity coding system and the cognitive mapping system to analyze translated records of both private and public statements of Japanese policy-makers. The records of the private deliberations consisted of transcripts of the Liaison and Imperial conferences in which Japanese policy-makers confidentially discussed among themselves whether to go to war against the United States (Ike, 1967). Most of the actual decision-making took place during the Liaison conferences, which included both civilian and military leaders; at the Imperial conferences, these same leaders presented their policy to the Emperor and his advisers for approval. From the transcripts of the Liaison and Imperial conferences, we used all available paragraph-sized statements (n = 187) from Prime Ministers Konoye and Tojo, Foreign Ministers Toyoda and Togo, Navy Chief-of-Staff Nagano, and Army Chief-of-Staff Sugiyama. We also obtained records of formal diplomatic communications from Japan to the U.S. government. We sampled a number of paragraph-sized statements (n = 34).

We divided the 1941 crisis into early and late periods. The early period ran from June 15 to October 23, 1941 (the time of the fall of the moderate Konoye government). The late period ran from October 23 to December 7, 1941 (the date of the Pearl Harbor attack).
Complexity Coding. All material was coded for integrative complexity on a 7-point scale (see Schroder et al., 1967, for detailed discussion of coding rules). Each scorable paragraph was assigned a score from 1 to 7, with higher scores representing greater complexity. Scores of 1 reflect both low differentiation and low integration. Scores of 3 reflect moderate or high differentiation and moderate integration, and scores of 7 require both high differentiation and high integration. Scores of 2, 4, and 6 indicate that some of the qualities of the next higher score are present in the paragraph, but that their presence is not explicit enough for assigning that level.1

Cognitive Mapping. Separate cognitive maps were constructed for each paragraph-sized statement from the Liaison and Imperial conferences. Arguments were represented as chains of assertions, with concepts, represented by letters, being connected by arrows. A concept variable was coded as exerting a causal influence on another to the degree that a change in the former variable was stated to result in a change (positive or negative) in the latter variable. Concept variables that were stated or implied to directly affect the utility of a nation or political group were coded as value assertions in which the connecting arrow leads from a concept variable to a variable designated “utility.” For example, the statement, “Our delaying the start of war would reduce Japan’s chances of victory” contains an explicit causal assertion, linking “Our delaying the start of war” with “Japan’s chances of victory,” and an implicit value assertion, linking “Japan’s chances of victory” with Japanese utility.

Axelrod’s coding rules, as set forth in detail by Wrightson (1976), were followed, except when statements referred to interactive causation (i.e., two or more variables in combination were stated to lead to a particular effect). In such cases the appropriate unit of analysis is no longer the isolated causal variable or linkage; rather, it is a network of causal variables considered simultaneously. Such integrative arguments

1. Integrative complexity coding was done by the second author and an individual associated with Peter Suedfeld at University of British Columbia. The latter coder was unaware of the research hypothesis and of the specific context in which the leaders’ statements were made. The correlations of .80 between coder complexity ratings indicated a satisfactory level of intercoder agreement.
occur with some frequency in the Japanese deliberations. For example, Army Chief-of-Staff Sugiyama argued during the September 6 Imperial conference that a policy of "remaining idle" (or delaying going to war) would lead to further attrition in Japanese strength (due to Japan's dwindling stock of raw materials) and continued increases in the defensive preparedness of the Western powers. Sugiyama argued that both factors increased the difficulty of Japan's successfully waging war against the Western powers. Therefore, Sugiyama concluded, it was important to begin hostilities soon. Thus it was the existence of a network of causal linkages, and not one particular causal variable, that led Sugiyama to his conclusion. Since the original Axelrod coding rules do not address this issue of interactive causation (Axelrod, 1976: 260-262), we developed the special coding convention of a "causal package," or "chunk." A chunk, represented by a circle drawn around the relevant interacting variables or linkages, is illustrated in Figure 1, which presents two maps of Sugiyama's argument, one using Axelrod's coding rules, the other incorporating the chunking convention.

From the cognitive maps we derived four indexes of cognitive structure. These were:

1. Differentiation of map = number of concept variables in paragraph/logarithm of number of words in paragraph. This index represents a measure of the number of variables or aspects of the situation the decision-maker considered, controlling for the length of the statement (the logarithm was employed in the denominator to reduce the influence of variations in length of statement.

2. Value-ladenness of map = number of value assertions in paragraph/number of causal assertions in paragraph. This index is a positive function of the degree to which concept variables are stated or implied to affect utility without affecting other concept variables. Paragraphs in which policies are stated, without any supporting analysis, to be "good" or "bad" would be high in value-ladenness.

3. Causal integration of map = number of causal assertions in paragraph/number of concept variables in paragraph. This index is a measure of the density of the network of linkages between concept variables.

4. Hierarchical integration of map = number of chunks in paragraph/number of causal assertions in paragraph. This index is a positive function of the number of times concept variables are stated as operating interactively.2

2. Cognitive mapping was done independently by the two authors, who derived structural indexes from the maps of a large number of paragraphs of each leader. Satisfactory correlations existed between the two coders' frequency counts of the structural indexes (ranging from .79 to .97).
Relation between integrative complexity and the cognitive map indexes. The cognitive map indexes and integrative complexity scores correlated largely as expected (see Table 1). Differentiation, causal integration, and hierarchical integration were all positively correlated with integrative complexity, while value-ladenness was negatively correlated with integrative complexity, all p's < .005. To clarify the relationships between these variables further, we performed a principal components analysis incorporating a varimax rotation. Two components accounted for almost 70% of the variance. Highest loading variables on the first component—which accounted for 42% of the variance—were value-ladenness (−.89) and causal integration (.88). Highest loading variables on the second component—which accounted for 28% of the variance—were integrative complexity (.85), differentiation (.66), and hierarchical integration (.65). Table 2 presents the loadings of the five variables on the two components.

The first component is somewhat difficult to interpret and appears largely to reflect the high negative correlation between the map indexes of value-ladenness and causal integration, a correlation that partly derives from the close relationship between the operational definitions of these two variables. This component can perhaps best be interpreted as reflecting the "elaborateness" of the cognitive map, or the degree to which the decision-maker takes into account a number of causal variables that are perceived to affect each other (but not interactively).
TABLE 1
Correlations Between Integrative Complexity
and Cognitive Mapping Indexes

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Value-ladeness</td>
<td>-</td>
<td>.09</td>
<td>-.69**</td>
<td>-.27**</td>
<td>-.19*</td>
</tr>
<tr>
<td>2 Hierarchical integration</td>
<td>-</td>
<td>-.01</td>
<td>.08</td>
<td>.32**</td>
<td></td>
</tr>
<tr>
<td>3 Causal integration</td>
<td>-</td>
<td>.35**</td>
<td>.19*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Differentiation</td>
<td>-</td>
<td></td>
<td></td>
<td>.57**</td>
<td></td>
</tr>
<tr>
<td>5 Integrative complexity</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .005.

**p < .001.

The second component can be interpreted as a measure of the integrative complexity construct, since the highest loading variables are integrative complexity and the two map indexes, differentiation and hierarchical integration, most closely related to the information-processing dimensions that complexity comprises. These map indexes appear to have successfully captured the major structural variables of the integrative complexity coding system.³

ANALYSES

For each paragraph unit, scores for each of the two components were calculated. These scores then became the dependent variables for subsequent analyses designed to test the disruptive stress explanation. Univariate t-tests were used to compare the component scores of paragraphs drawn from Japanese deliberations from the early and late phases of the 1941 crisis. Six t-tests were performed, one on each of the two components for each of three key decision-makers—War Minister/Prime Minister Tojo, Army Chief-of-Staff Sugiyama, and Navy Chief-of-Staff Nagano. (Early-late comparisons were not possible for Foreign

³ The multiple correlation between integrative complexity and the four map indexes was .64. This correlation was produced almost totally by the relationship between differentiation and hierarchical integration and integrative complexity (R = .63, p< .0001). Causal integration and value-ladenness appeared to have no independent predictive power.
TABLE 2
Loadings of Five Dependent Variables on the Two Major Principal Components (Varimax Rotation)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Component I</th>
<th>Component II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.89</td>
<td>.02</td>
</tr>
<tr>
<td>1 Value-ladeness</td>
<td>- .25</td>
<td>.65</td>
</tr>
<tr>
<td>2 Hierarchical integration</td>
<td>.88</td>
<td>.08</td>
</tr>
<tr>
<td>3 Causal integration</td>
<td>.45</td>
<td>.66</td>
</tr>
<tr>
<td>4 Differentiation</td>
<td>.15</td>
<td>.85</td>
</tr>
<tr>
<td>5 Integrative complexity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ministers Toyoda and Togo, or for Prime Minister Konoye, since these leaders were affected by the change in government on October 23, 1941.

We conducted two additional t-tests to examine differences between the component scores of statements made in the Liaison conferences and those made in the Imperial conferences. A significant difference would indicate that cognitive structure varies as a function of whether decision-makers are in a primarily decision-making (Liaison conference) versus decision-justifying (Imperial conference) setting. One possibility is that decisions are justified simply by invoking commonly shared values. In this case, discussions at Liaison conferences should be more complex than those at Imperial conferences. Another possibility is that decisions are justified by adducing as many reasons as can be generated in support of the decision (cf., Jervis, 1976). In this case, discussions at Imperial conferences should be more complex than those at Liaison conferences.4

In addition to analyses of internal deliberations, we also examined Japanese diplomatic communications to the United States (Foreign Relations, 1956) for evidence of simplification from the early to the late periods of the crisis.

4. For several of the leaders, there was a great disparity between the number of Liaison statements made in the early as compared to the late phase. To avoid confounding early-late differences with Liaison-Imperial differences, we used only Imperial conference statements (of which there were a fairly equal number in early and late phases) to test for early-late differences.
RESULTS

Table 3 presents the mean component scores of the leaders in the early and late phases of the crisis. Overall, the results offered only weak support for the disruptive stress hypothesis. The Imperial conference statements of Prime Minister Tojo and Army Chief-of-Staff Sugiyama showed no tendency to simplify between the early and late phases of the crisis. In fact, there was a nonsignificant tendency for Prime Minister Tojo to score higher on the integrative complexity component (Component II) in the late period, $t (19) = 2.03, p < .10$. In contrast to Tojo and Sugiyama, however, Navy Chief-of-Staff Nagano exhibited a strong tendency toward simplification on the integrative complexity component between the early and late phases, $t (19) = 2.69, p < .01$.

Early-late comparisons involving scores on Component I were inconclusive. Tojo and Sugiyama showed slight increases on this component from early to late phase, while Nagano showed a slight decrease. These differences, however, were not significant.

The Japanese diplomatic communications to the United States showed no sign of simplifying with the approach of war, $t (32) < 1$, n.s. This finding contradicts the results of previous studies, which have found the integrative complexity of public policy statements to be a precursor of the outbreak of war.

Consistent differences were found between the component scores of statements made in the Liaison conferences and those made in the Imperial conferences. Table 4 presents the mean component scores of all six leaders in both types of conference. On both Components I and II, all leaders had higher scores in the Imperial than in the Liaison conferences. This trend, which reached significance for Component II, $t (120) = 4.5, p < .001$, suggests greater complexity of information processing in Imperial compared to Liaison conferences. This finding indicates that the Japanese decision-makers attempted to justify their decisions to the Emperor and his advisers by marshaling complex arguments rather than by simply invoking shared values.

5. Due to the scarcity of data, this comparison for Tojo involved only the November 5 and December 1 Imperial conferences.
6. In testing for these differences, we compared equal numbers of statements drawn from Imperial and Liaison conferences that occurred in the early versus late phases of the 1941 crisis.
TABLE 3
Mean Component Scores of Japanese Leaders in the Early
and Late Periods of the 1941 Crisis

<table>
<thead>
<tr>
<th>Leader</th>
<th>Component I (Elaborateness)</th>
<th>Component II (Complexity)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Early</td>
<td>Late</td>
</tr>
<tr>
<td>Tojo</td>
<td>-.36</td>
<td>.19</td>
</tr>
<tr>
<td>Sugiyma</td>
<td>-.08</td>
<td>.51</td>
</tr>
<tr>
<td>Nagano</td>
<td>.23</td>
<td>.34</td>
</tr>
<tr>
<td>Konoye</td>
<td>-.16</td>
<td>-</td>
</tr>
<tr>
<td>Toyoda</td>
<td>-.32</td>
<td>-</td>
</tr>
<tr>
<td>Togo</td>
<td>-</td>
<td>-.09</td>
</tr>
</tbody>
</table>

Another result is worthy of note, namely the relative absence of the following elements in the cognitive maps of the decision-makers: (1) cycles, in which three or more concept variables are stated to affect each other in a feedback loop; (2) mutually supporting causal arguments, in which one concept variable is stated to affect another concept variable through two or more independent paths; and (3) concept variables stated to have contradictory effects on utility (e.g., + and -). Cycles and mutually supporting causal arguments suggest a recognition of feedback loops and multiple causal effects of one variable on another. Concept variables with contradictory effects on utility imply a recognition of value tradeoffs. The presence of these three elements in a cognitive map, then, can be interpreted as indicating a fairly complex level of information processing. In the maps of the Japanese leaders (n = 187) there were no cycles, twelve mutually supporting causal arguments, and five variables with contradictory effects on utility. The scarcity of these elements accords with previous studies employing the cognitive mapping technique (Axelrod, 1976, 1977), and suggests a strong tendency for the Japanese decision-makers to maintain a relatively simple and consistent view of the environment (cf., Steinbruner, 1974).
DISCUSSION

The results cast doubt on the generality of the disruptive stress hypothesis for explaining how crises affect the quality of decision-making. Neither the private deliberations of the Japanese leaders nor the official communications from the Japanese to the United States government showed a trend toward simplification from the early to the late period of the crisis. These results suggest the need to explore possible personality and role differences as mediators of response to stress (Holsti and George, 1975) as well as cultural differences in decision-making processes (e.g., Kerlinger, 1951). For example, Navy Chief-of-Staff Nagano may have shown the simplification effect because of personality factors that rendered him more susceptible to stress effects (cf., Schroder, 1971) or because, as Naval Chief, he perceived that war with the United States would impose especially severe burdens on himself and his branch of the armed forces.

The present findings can be reconciled with the disruptive stress hypothesis. The simplification effect may occur only in situations characterized by the three elements proposed by Hermann (1969, 1972) to define a crisis: threat to central national values, time pressure, and surprise. The situation facing the Japanese leaders in the latter half of 1941 was characterized by the first and second of these elements but not the third. In fact, it can be argued that the Japanese decision for war took place in a context in which events appeared to Japanese leaders to be inevitable or predictable rather than surprising (Butow, 1961; Hosoya, 1967; Pelz, 1974). This apparent predictability of events may have led the Japanese leaders to perceive a measure of control over their environment. As numerous laboratory and field studies suggest, perceived control appears to be a crucial factor in mitigating the deleterious effects of stress (e.g., Glass and Singer, 1972). The impact of crisis-produced stress on cognitive performance may be most severe when unanticipated events lead decision-makers to perceive a loss of control.7

7. The fact that the Japanese leaders had a relatively long time in which to make critical decisions may also have decreased the effects of stress. The Japanese leaders had months to decide on policies; national leaders in crises where stress effects have been observed typically had only a few days or weeks (e.g., World War I, the Korean War).
TABLE 4
Mean Component Scores of Japanese Leaders in Liaison and Imperial Conferences

<table>
<thead>
<tr>
<th>Leader</th>
<th>Component I (Elaborateness)</th>
<th>Component II (Complexity)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Liaison</td>
<td>Imperial</td>
</tr>
<tr>
<td>Tojo</td>
<td>.02</td>
<td>.19</td>
</tr>
<tr>
<td>Sugiyama</td>
<td>-.17</td>
<td>.36</td>
</tr>
<tr>
<td>Nagano</td>
<td>-.18</td>
<td>.42</td>
</tr>
<tr>
<td>Konoye</td>
<td>-.20</td>
<td>-.14</td>
</tr>
<tr>
<td>Toyoda</td>
<td>-.33</td>
<td>-.30</td>
</tr>
<tr>
<td>Togo</td>
<td>-.13</td>
<td>-.05</td>
</tr>
</tbody>
</table>

The simplification effect may partly be a function of the type of conflict situation in which decision-makers must act. Previous studies (Suedfeld and Tetlock, 1977; Suedfeld et al., 1977) suggest that cognitive simplification tends to occur in crises characterized by escalation of mutual hostility (e.g., 1914, some of the Middle Eastern conflicts). In this type of crisis, the actions of one state are perceived by another state as a threat requiring counteraction. This counteraction is in turn perceived by the first state as signifying aggressive intent. Perception leads to action which reinforces perception, resulting in a spiral of increasing antagonism.

In contrast, the 1941 conflict was the result not of a spiral of mutual hostility, but of a situation that had gradually deteriorated for more than a year. Over a long period of negotiations, the Japanese leaders became increasingly aware of the low probability of reaching what they deemed an acceptable agreement with the United States. Plans for the initiation of hostilities were put into action several weeks before the negotiations were broken off (Butow, 1961; Morton, 1960; Pelz, 1974; Ward, 1951). Thus the 1941 crisis was characterized by unilateral planning on the part of an expansionist power not satisfied with the status quo. Unilateral planning, even when perceived as necessitated by the situation, may lead to perceptions of control that mitigate the effects of stress. Thus even though the Japanese leaders believed that "they were being pushed into a corner by the United States and her allies" so
that "no course but war seemed possible" (Ike, 1967: xxiv), they still maintained control over the initiation of hostilities. They could decide when, where, and how to begin the war. While clearly tentative, this interpretation of the psychological effects of the 1941 crisis on the Japanese leaders suggests that further research be conducted testing the disruptive stress hypothesis in crises characterized by unilateral, aggressive planning on the part of an expansionist power (e.g., Napoleon's attacks on Spain and Russia, Hitler's attack on Poland in 1939).

In addition to raising substantive issues regarding the disruptive stress hypothesis, the results have important methodological implications. The striking difference in complexity of Liaison and Imperial conference statements suggests that researchers should take into account the social context in which statements are made in interpreting content analysis measures of cognitive structure (or, for that matter, of other psychological variables; cf., Mueller, 1969). As Holsti (1976: 43) has noted, political statements typically serve more than an informational function; they are generally designed to "persuade, justify, threaten, cajole, manipulate, evoke sympathy and support, or otherwise influence the intended audience . . . to serve and advance practical goals of the moment." The Liaison-Imperial difference suggests that the goal of explaining and justifying a decision to a respected and skeptical audience will tend to increase the complexity of decision-makers' statements.

The present study provides support for the convergent validity of the integrative complexity construct. The structural indexes derived from cognitive maps were significantly correlated with integrative complexity. In addition to providing evidence of convergent validity, the integrative complexity and cognitive mapping systems can provide complementary types of information. For example, while the integrative complexity scoring system indicates the overall complexity of an argument, cognitive mapping indexes yield a more detailed picture of the argument's structure. For instance, a policy argument may be complex due to high levels of causal or hierarchical integration, or because feedback loops and value tradeoffs are recognized. Further research on political decision-making should explore the relationships among content analytic measures of cognitive structure.
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