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THE CONTINGENCY MODEL FOR THE SELECTION OF DECISION STRATEGIES: AN EMPIRICAL TEST

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Technical Report 73-17
October 1978
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A contingency model for the selection of decision strategies was described and tested. This model suggests that when (1) decisions are more significant, (2) the decision cannot be reversed, and (3) the decision maker is responsible for his actions, then the decision strategy will be more analytic and result in a greater investment of time and effort than when the opposite conditions are true. Three studies tested and supported these assumptions. The results are discussed in terms of their implications for the further development of this particular model and for the field of decision making in general.
The Contingency Model for the Selection of Decision Strategies: An Empirical Test

A change has recently occurred in the field of decision research. Instead of looking for a single, usually rather simple description of decision behavior, it is recognized that decision makers do different things in different ways when faced with different decision problems. This recognition derives from at least three sources: First, observations of practicing decision makers (e.g., managers) reveal a complex and highly variable array of decision problems and solutions (e.g., Mintzberg, 1971). Second, research has shown that decision makers do not always (or often) use normatively optimal strategies in the course of decision making (Slovic, Fischhoff & Lichtenstein, 1977). And third, contingency models that have been applied in areas such as leadership, organizational design, and participative management have served as stimuli for the development of more complex models of human behavior.

As a consequence of these trends, a number of researchers have begun to apply contingency ideas to decision making (e.g., Payne, 1975; Nutt, 1976; Vroom & Yetton, 1973). The general notion is that decision makers diagnose decision problems in systematic ways and then select decision strategies based upon those diagnoses. The most thoroughly developed application, called the "Contingency Model for the Selection of Decision Strategies," has been developed by Beach and Mitchell (1978) and serves as the focus of this paper.

The model presented by Beach and Mitchell (1978) recognizes that a variety of decision strategies are available to the decision maker. These range from highly analytic strategies requiring a great deal of analysis and extensive use of decision aids (e.g., formulas, computers) to nonanalytic strategies which utilize little analysis and often are nothing more than the application of simple rules or heuristics. Two basic assumptions of the model are (1) that the perceived cost (time, effort, and/or money) of using strategies increases as the degree of analytic complexity increases and (2) that the perceived probability of strategies leading to a correct decision also increases as analytic complexity increases.

Even given the costs and potentials associated with the decision maker's repertoire of strategies, selection of a specific strategy must take additional factors into account. The model proposes three categories of such factors: (1) characteristics of the decision problem; its unfamiliarity,
ambiguity, complexity, and instability (the degree to which the criteria, goals, and constraints fluctuate over time), (2) characteristics of the decision environment; the irreversibility of the decision, its significance in terms of its ramifications, the degree to which the decision maker is personally accountable for the results of his decision, and the time and monetary constraints associated with the problem (i.e., deadlines, limited funds for analysis, etc.), (3) characteristics of the decision maker; his or her knowledge of strategies, ability to use them, and motivation to resist spending time, energy, and/or money on solutions.

The fundamental mechanism of the model is a cost-benefit analysis in which pressures to use analytic strategies (to reduce the unfamiliarity, ambiguity, complexity, and instability of the problem and to contend with the irreversibility, significance, and imposed accountability of the environment) are balanced against the costs. Within the limits imposed by the decision maker's knowledge of and ability to use various strategies, one or a set of several very similar strategies can be identified as promising the greatest net benefit and that one, or one of the small set, is the one that the model predicts the decision maker will use.

In the only empirical work on the model thus far, Christersen-Szalanski (in press) found support for the cost-benefit mechanism. This involved having people make decisions under various payoff and cost conditions. There was no attempt to examine any of the decision problem or decision environment characteristics. However, the decision maker characteristic of ability was examined and found to have a very strong effect on selection-related behavior. People who had more skill with analytic strategies selected them more frequently than people without this skill. The purpose of the present study is to focus on the effects of decision environment characteristics—irreversibility, significance, and accountability—on strategy selection.

Method Overview:

There were three experiments, all with similar designs. Participants were asked to read descriptions of decision problems (cases) and choose strategies appropriate to them. The strategies were more or less analytic and the problems represented eight experimental conditions. The problems were either significant or insignificant, the answers were either reversible or irreversible and the decision maker was either personally accountable or not accountable. All three experiments employed this 2 x 2 x 2 design.
The experiments were designed to differ in the degree of realism of the task. In Experiment 1, the participants read the cases and played the role of the central decision maker in the case. The manipulations were built into the case material (e.g., the central character was responsible or not responsible for the decision, etc.). Participants were required to select a decision strategy for each of eight cases, but they did not have to actually do any analysis or make any decisions. In Experiment 2, the same cases were used and the manipulations were handled in the same way. The participants again played the role of the central figure and made strategy selections. However, in this experiment they actually were required to use the strategy and make a decision. In the final experiment, the decision problems were presented as cases for them to actually solve and the variables were manipulated directly in the situation experienced by the participants in contrast to the first two experiments in which the manipulations were part of the cases. For example, in Experiment 3, participants were required to either defend their answers in a group discussion (accountable) or not to defend them (not accountable). Because of the slightly different methodologies used in the three experiments and the degrees of realism, we will present the experiments in the sequence described above.

Experiment 1

Subjects
Twenty-one full-time managers working in the Seattle area were participants. These people (3 females, 18 males) were enrolled in an evening MBA program and the research was conducted during class time.

Cases
Eight decision cases were used with each case describing a different organization and different type of problem (e.g., whether or not to market a new product, whether or not to diversify financial resources). The cases came from actual problems reported by other classes of managers and a more detailed description of them is available elsewhere (McAllister, 1978). Each case consisted of a two-page description, a one-page overview (in which the manipulations were presented), one page of relevant data, and one page containing the four possible decision strategies.

Manipulations
The manipulations were presented as part of the case. The decision was portrayed as being significant or not significant, usually in terms of the
impact of the decision on the financial status of the company. For example, a decision might be described as affecting either 30% or 10% of available funds. Accountability was manipulated either by making the central character personally responsible for the decision (e.g., he alone must make the choice) or by diluting this responsibility (e.g., the decision is essentially a recommendation to be reviewed by others). Reversibility was manipulated by allowing the central character to change his mind at some later point (e.g., the decision is temporary and can be reversed later) or by making it permanent (the company must live with the choice). McAllister (1978) presents a fuller description of these manipulations.

Procedures

The participants were asked to read each of the eight cases, play the role of the central character, and choose a decision strategy. There were four strategies available for each case. These strategies varied in terms of the amount of computation and analysis necessary for generating an answer. For example, one case dealt with a bank officer deciding which of three firms should get a loan. The most analytic strategy required the use of a weighted formula based on accounting data and credit ratings. The least analytic strategy simply required a rank order based on the credit ratings.

One difficulty was that since the participants were not being asked to actually solve the case (i.e., no costs) they might reasonably say they would use the most analytic strategy for each decision. In order to avoid this problem, they each were given 400 "decision resource units" (DRU's). These DRU's were described as composites of the time, effort, and analysis that could be expended on the decision problems. Each decision strategy was given a DRU value of 80 (most analytic), 60, 40, or 20 (least analytic). The 400 DRU's were to be allocated among the eight cases, thus preventing participants from using the most analytic strategy for all the cases. It was felt that since most managers in fact are faced with limited resources of time and money, that this restriction was not unrealistic.

Two other procedures are worthy of note. First, there were eight possible combinations of the manipulations and eight decision problems (cases). These factors were completely counterbalanced (resulting in 64 distinct cases) so that across the group each case appeared with all possible combinations of manipulations. Second, the order of the cases themselves was scrambled so
that across the group no one case consistently appeared in a particular position in the sequence of eight cases.

**Measures**

There were two types of measures gathered. First, there was the dependent variable, decision strategy selection. After all eight cases were read the participants indicated which strategy they would use for each case on a separate answer sheet. Next to each selection they wrote the DRU's associated with that strategy, and they were required to sum their DRU's to make sure the total did not exceed 400. For data analyses, the most analytic strategies received a score of one and the least analytic a score of four.

After the strategies were selected, two ratings were asked for as checks on the manipulations. Each decision case was rated in terms of how important it was for the decision to be correct relative to the other cases. This rating was made on a seven-point, bipolar scale: important-unimportant. It served as an overall check on the manipulations. The second rating was for the participants to indicate the personal pressure placed on the decision maker in each case. These ratings also were made on seven-point, bipolar scales: high pressure-low pressure. It was felt that accountability would have the major impact on this variable and that significance and reversibility would be less important.

In summary, each participant read eight decision cases representing two levels of accountability, two levels of significance, and two levels of reversibility. They chose a decision strategy for each case and the $2 \times 2 \times 2$ design permitted the manipulations checks and strategy selection to be used as dependent variables in analyses of variance.

**Results**

The manipulations checks suggested a successful presentation of the treatments. All three factors contributed significantly to the overall importance of the problem. The more significant the problem the greater its importance ($F = 33.439, p < .001$), the less reversible the decision, the greater its importance ($F = 18.598, p < .001$) and the more personally accountable the decision maker the greater the importance ($F = .078, p < .005$). There were no significant interactions.

The perceived responsibility ratings produced a main effect for accountability ($F = 9.133, p < .005$). The effect for significance was not significant,
and the effect for reversibility was marginally significant ($F = 2.862$, $p < .093$). There were no significant interactions. As expected, when the decision maker felt accountable and the decision was irreversible, there was greater perceived responsibility than when there was low accountability and the decision could be changed.

The analysis for strategy selection resulted in main effects for all three independent variables. Significant decision cases resulted in more analytic strategies being chosen than did insignificant cases ($F = 13.612$, $p < .01$). Cases for which the decision maker was accountable resulted in more analytic strategies than those for which he was not accountable ($F = 19.320$, $p < .001$). And finally, decisions that were irreversible produced more analytic strategies than did reversible ones ($F = 33.663$, $p < .001$). There were no significant interactions.

Table 1 presents the means for the eight treatments. It can be seen that four distinct groups emerge. There are the two extremes in which everything is high or low and there are two less extreme conditions in which either one or two of the factors is high or low. As predicted, more analytic strategies are used when there is greater significance, accountability or reversibility. When all three factors are absent, simple strategies are used. When all three are present, highly analytic strategies are selected.

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Insert Table 1 about here

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Experiment 2

Participants

Nineteen practicing managers enrolled in an evening MBA course participated (5 females, 14 males).

Cases

The eight cases used in Experiment 1 were used in Experiment 2.

Manipulations

The manipulations were carried out in the same way in Experiment 2 as in Experiment 1; they were part of the case material.

Procedures

The procedure followed in Experiment 2 was very similar to that of Experiment 1. However, to increase the realism of Experiment 2, the participants were required to use data generated by their selected decision
### Table 1

Treatment Level Means for Experiment 1

<table>
<thead>
<tr>
<th>n</th>
<th>Treatment Level</th>
<th>Variable Level&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Strategy Mean&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>1</td>
<td>HHH</td>
<td>1.667</td>
</tr>
<tr>
<td>21</td>
<td>2</td>
<td>LHH</td>
<td>1.395</td>
</tr>
<tr>
<td>21</td>
<td>3</td>
<td>HLH</td>
<td>2.095</td>
</tr>
<tr>
<td>21</td>
<td>4</td>
<td>HHL</td>
<td>2.286</td>
</tr>
<tr>
<td>21</td>
<td>5</td>
<td>LLH</td>
<td>2.762</td>
</tr>
<tr>
<td>21</td>
<td>6</td>
<td>LHL</td>
<td>2.952</td>
</tr>
<tr>
<td>21</td>
<td>7</td>
<td>HLL</td>
<td>2.952</td>
</tr>
<tr>
<td>21</td>
<td>8</td>
<td>LLL</td>
<td>3.381</td>
</tr>
</tbody>
</table>

<sup>a</sup>Levels of the independent variables associated with each treatment:
The order is significance, accountability, irreversibility. H = high, L = low.

<sup>b</sup>Low scores represent analytic strategies.
Table 2
Treatment Level Means for Experiment 2

<table>
<thead>
<tr>
<th>n</th>
<th>Treatment Level</th>
<th>Variable Level</th>
<th>Strategy Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>1</td>
<td>HHH</td>
<td>1.316</td>
</tr>
<tr>
<td>19</td>
<td>2</td>
<td>LHH</td>
<td>2.316</td>
</tr>
<tr>
<td>19</td>
<td>3</td>
<td>HLH</td>
<td>2.263</td>
</tr>
<tr>
<td>19</td>
<td>4</td>
<td>HHL</td>
<td>2.211</td>
</tr>
<tr>
<td>19</td>
<td>5</td>
<td>LLH</td>
<td>2.664</td>
</tr>
<tr>
<td>19</td>
<td>6</td>
<td>LHL</td>
<td>2.342</td>
</tr>
<tr>
<td>19</td>
<td>7</td>
<td>HLL</td>
<td>2.342</td>
</tr>
<tr>
<td>19</td>
<td>8</td>
<td>LLL</td>
<td>3.421</td>
</tr>
</tbody>
</table>

- Levels of the independent variables associated with each treatment:
The order is significance, accountability, irreversibility. H = high, L = low.

- Low scores represent analytic strategies.
strategy in each case and, based on this generated data, actually make the decision for each case. The generated data represented most of the analysis that was required, but in each case the subjects were asked to complete the final step in the analysis and then make their decisions.

Because of the additional work required for Experiment 2, the participants were given a preliminary set of material five days before the experimental session and were asked to review this material which consisted of the two-page descriptions of the decision cases.

As in Experiment 1, the order of the cases and the matching of cases with manipulations was controlled. The participants read the eight cases, made strategy selections, allocated their DRU's, analyzed some data and made a decision. The major difference from Experiment 1 was that the participants had to work with the data and make a decision.

Measures
The measure of decision strategy selection and the checks on the manipulation were the same as in Experiment 1.

Results
The manipulations checks were all statistically significant. The decision cases were seen as more important when they were significant (F = 44.161, p < .001), when the decision maker was accountable (F = 13.999, p < .001) and when the decision could not be reversed (F = 41.242, p < .001). There were no interactions. Perceived responsibility was seen as greater when the problem was significant (F = 30.990, p < .001) when the decision maker was accountable (F = 70.162, p < .001), and when the decision could not be reversed (F = 3.792, p < .005). Again, the major effect of the perceived responsibility variable was produced by the accountability manipulation as expected, and there were no interactions.

The results for decision strategy selection were similar to those of Experiment 1. More analytic strategies were selected when the problem was significant (F = 29.623, p < .001), when the decision maker was accountable (F = 19.006, p < .001), and when the decision could not be reversed (F = 22.306, p < .001). There were no interactions. The means of the eight conditions are in Table 2.
Again, one can see the distinct groupings of the eight conditions. The greater the significance, accountability, and irreversibility, the more analytic the chosen strategy.

Experiment 3

Overview

Experiment 3 differed from Experiments 1 and 2. The participants, task, manipulations, and measures were all different. The only similarity was that two levels of significance, accountability, and reversibility were again used as the independent variables in a $2 \times 2 \times 2$ design with strategy selection as the dependent variable. However, in Experiment 3 each participant worked on only one decision activity representing one of the eight conditions rather than having eight decision problems, one for each cell. In other words, Experiment 3 was an across-subjects design, while Experiments 1 and 2 were within-subjects designs.

The general approach to this experiment requires further comment. As in the earlier experiments, it was necessary to prevent the participant's perception of unlimited resources and the subsequent selection of the most accurate and expensive decision strategy regardless of the characteristics of the situation. In order to do this, we used two decision tasks that had to be completed within a specific, limited time. The high and low levels of the three independent variables were then associated with either the first or the second task. The actual experimental results focused on the participants' behavior on the first task, with the second task used simply to establish a budgeting requirement.

Participants

One hundred and fifteen undergraduate students enrolled in an organization theory course participated (49 females, 66 males). The experiment was conducted during class.

Experimental Materials

The first task was similar to one used by Drake and Mitchell (1977). Participants were asked to decide on the potential marketability of six sporting goods. Figure 1 presents the work sheet for one of the products. Each product was to be given a rating on six criteria as well as receiving an overall rating.

---

Insert Figure 1 about here
<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>INITIAL INFORMATION</th>
<th>HIGH</th>
<th>MARGINAL</th>
<th>LOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. RELATION TO PRESENT DISTRIBUTION CHANNELS</td>
<td>Will have to distribute entirely through new channels in order to reach major markets.</td>
<td>10</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>2. BREADTH OF MARKET</td>
<td>Regional markets and a restricted variety of consumers.</td>
<td>10</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>3. PLACE IN MARKET</td>
<td>A new type of product that will fill a need presently not being filled.</td>
<td>10</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>4. QUALITY/PRICE RELATIONSHIP</td>
<td>Priced below most competing products of similar quality.</td>
<td>10</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>5. RESISTANCE TO SEASONAL FLUCTUATIONS</td>
<td>Heavy seasonal fluctuations that will cause considerable inventory and personnel problems.</td>
<td>10</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>6. EXCLUSIVENESS OF DESIGN</td>
<td>Cannot be patented, and can be copied by large, more knowledgeable companies.</td>
<td>10</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>7. ADJUSTMENT POINTS</td>
<td>OVERALL EXTENT TO WHICH THE ABOVE INFORMATION INDICATES A FAVORABLE MARKET POTENTIAL FOR THE PRODUCT</td>
<td>20</td>
<td>18</td>
<td>16</td>
</tr>
</tbody>
</table>

Figure 1. Worksheet for Experiment 3.
The participants were instructed to review the first two products (which had already been rated for them) and then proceed with the ratings for the other four products. The six products were divided into two sets of three each and the participant had to decide which product in each set had the highest market potential.

Four decision strategies were introduced to help them make this comparison. The strategies varied from one another on the amount of information they used, the difficulty of computations involved in their use, and their past record for accuracy. The simplest strategy asked the participants to add together the score for the third criterion (Place in Market—supposedly most important) and the overall rating. The product with the highest sum in each set of three was judged to have the best marketing potential. The most analytic strategy assigned importance weights to each of the six criteria and the overall rating. The subject had to multiply the ratings by their weight and sum over the seven scales. Again, the product with the highest score was to be chosen. The participants had to choose one of these four strategies to assist them in reaching their decisions.

The second task was composed of three of the decision cases used in Experiments 1 and 2. The participants were asked to respond to these cases and indicate which decision strategy they would use. As was mentioned earlier the results for this second activity are of little actual interest. The activity was used only to provide a realistic means for motivating the subjects to budget the time available for the research, with the expectation that if one of the two tasks was perceived as more significant or more irreversible or more personally demanding in terms of responsibility, then the subjects would allocate their time accordingly, and spend more time with that task.

Procedures

After all participants had arrived, each was given two packets of material, one packet for each task. The experimental manipulations were found in the instructions and introductory material for the first task. All participants were told that they would be participating in two tasks regarding research in decision making. The first task would involve making comparisons among sporting goods and deciding which product had the highest marketing potential. The second task would involve three organizational decisions drawn from the experience of practicing managers. For both tasks, they would
be asked to select one of four decision strategies to help them make their final decisions. Both tasks had to be completed during the 30 minute class period.

Participants were then introduced to the four strategies available for task one and the use of each strategy was reviewed. After all participants had understood the general nature of both tasks and had become familiar with the four available strategies, a short amount of time was allowed for questions and clarification.

The participants were then asked to read the introductory material found in the packet for task one. This introductory material gave additional background information for the two tasks, and specified the levels of the three experimental variables for each participant. They were informed in this material that task one (or task two) was the result of a long period of experimental work and was more likely to lead to important results while the other task was an introductory pilot study supported by a small group of local consultants and was expected to have little meaningful impact. This was the significance manipulation.

The participants also were informed that after they had made their decisions, they would be asked to defend their responses in front of a small group of their peers. However, because of the limited amount of time available, only their responses to task one (or task two) would be reviewed. This was the accountability manipulation.

Finally, the introductory material advised the subjects that they would be allowed to change their decisions in either task one (or task two) at the conclusion of the research period. This was the reversibility manipulation.

We should add that it was anticipated that some participants responding to low levels of the independent variables would finish task one before other participants, and that this differential finishing rate might have an effect on the pace of those other participants. It was to prevent this social effect that task two was discussed in the preliminary introductions and the packets for task two were distributed at the beginning of the experimental session. As participants concluded task one, they were able to immediately begin the next task without disturbing the other participants.

The Measures for Experiment 3

After the oral introduction for the two activities, and after reading the additional introductory pages containing the experimental manipulations,
the participants were asked to complete a planning guide questionnaire in which they indicated the amount of time to be allocated to task one and selected a strategy to use for task one. Allocated time and strategy selection were two of the major dependent variables.

After completing the planning guide, the participants moved immediately to the work of task one requiring the evaluation and comparison of sporting goods using their selected strategy. This work involved two sets of three products each, and required the participants to determine which product was best in each set.

Following task one, the participants were asked to complete a questionnaire which included the final dependent variable and the manipulations check. The dependent variable of interest was the amount of time actually used, and this was assessed by having the participants record their finishing time. A large clock was visible at the front of the room to assist them. The manipulations checks were more specific than in Experiments 1 and 2. A question was asked directly about the perceived significance, accountability, and reversibility of task one. Again, seven-point, bipolar scales were used.

After the participants had completed this questionnaire, they proceeded immediately to task two. They continued working on task two until all participants had completed task one and the experimenter then stopped their work and everyone was debriefed.

In summary, Experiment 3 differed from Experiments 1 and 2 in some very important ways. First, each participant worked in only one experimental condition, not all eight. Task one represented only one combination of significance, accountability and reversibility for each participant. Second, the manipulations were in the situation experienced by the participant directly as the decision maker; there was no role playing. Task one was either significant or not significant and the participant was either personally accountable or not and his or her answers could be changed or they could not. Finally, in task one each participant had to choose a strategy and then actually use it. Thus, Experiment 3 was a much more realistic simulation of actual decision making than were Experiments 1 and 2.

Results

The manipulations were apparently successful. For the perceived significance check there was a main effect for significance (F = 37.261,
p < .001) and for accountability (F = 5.116, p < .05), but not for reversibility. For the accountability check there was a main effect for accountability (F = 9.449, p < .005) but not for the other two variables. For the reversibility check there was a main effect for reversibility (F = 23.363, p < .001) and accountability (F = 4.004, p < .05) but not for significance. There were no two-way or three-way interactions.

The content of the manipulations checks in Experiment 3 was more direct than in Experiments 1 and 2. As was expected, the significance manipulation had its major impact on the perceived significance measure, the accountability manipulation had its major impact on the perceived accountability measure and the reversibility manipulation had its major impact on the perceived reversibility measure. Table 3 presents the means for these checks.

Results for the three dependent variables showed some support for our hypotheses, but it was not as strong as the results for Experiments 1 and 2. For strategy selection there was a main effect for accountability (F = 5.313, p < .02) and a marginal effect for significance (F = 3.063, p < .10). There was no effect for reversibility or any two-way or three-way interactions. More analytic strategies were chosen for task one when task one was significant than when task two was significant, and more analytic strategies were chosen for task one when the decision maker was accountable than for when he was unaccountable. The allocation-of-time dependent variable also produced main effects for significance and accountability. When task one was significant, more time was planned for it than when it was not significant (F = 22.914, p < .001) and when the decision maker was accountable more time was planned than when he was unaccountable (F = 7.621, p < .001). There was no effect for reversibility and no two-way or three-way interactions.

The results for actual time used follow the same pattern. There was a marginal main effect for significance (F = 2.361, p < .09) and a main effect for accountability (F = 7.006, p < .01). There was no effect for reversibility or any interactions. Table 4 presents the means for these comparisons.
Table 3
Means and Main Effects for the Manipulation Checks: Experiment 3

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Level</th>
<th>N</th>
<th>Significance</th>
<th>Accountability</th>
<th>Irreversibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significance</td>
<td>High</td>
<td>59</td>
<td>3.153*</td>
<td>4.068*</td>
<td>3.729</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>58</td>
<td>4.966</td>
<td>4.431</td>
<td>3.862</td>
</tr>
<tr>
<td>Accountability</td>
<td>High</td>
<td>59</td>
<td>3.712</td>
<td>3.797**</td>
<td>3.458</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>58</td>
<td>4.397</td>
<td>4.707</td>
<td>4.138</td>
</tr>
<tr>
<td>Irreversibility</td>
<td>High</td>
<td>60</td>
<td>4.033</td>
<td>4.357*</td>
<td>4.667***</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>57</td>
<td>4.070</td>
<td>4.123</td>
<td>2.677</td>
</tr>
</tbody>
</table>

*Note that the scores are reversed—a low score means more significance, more accountability and more irreversibility. The three boxed cells are where we would expect major differences.

*Difference significant at .05
**Difference significant at .005
***Difference significant at .001
Table 4
Means for Main Effects of Experiment 3

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Level</th>
<th>Strategy Selected&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Planned Time</th>
<th>Actual Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significance</td>
<td>High</td>
<td>2.983*</td>
<td>32.998***</td>
<td>37.186*</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>2.661</td>
<td>24.393</td>
<td>32.017</td>
</tr>
<tr>
<td>Accountability</td>
<td>High</td>
<td>3.035**</td>
<td>31.298***</td>
<td>38.610***</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>2.621</td>
<td>26.259</td>
<td>30.569</td>
</tr>
<tr>
<td>Irreversibility</td>
<td>High</td>
<td>2.679</td>
<td>28.931</td>
<td>35.917</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>2.772</td>
<td>28.579</td>
<td>33.263</td>
</tr>
</tbody>
</table>

<sup>a</sup>Note that higher strategy scores represent more analytic strategies.

* <i>p < .10</i>
** <i>p < .05</i>
*** <i>p < .01</i>
Discussion and Conclusions

The primary purpose of this research was to determine how people react to the variables of irreversibility, problem significance, and personal accountability in their decision making behavior. The results are fairly clear in their support of the argument that these three independent variables have a significant effect on decision strategy selection and related behavior. Except for irreversibility in Experiment 3, the three independent variables had significant main effects on the dependent variables in all three studies. Manipulations checks indicated successful manipulation of these independent variables, providing additional confidence in the results. Apparently, when decisions are significant, when the decision is irreversible, and when the decision maker is personally accountable, more analytic strategies are selected than when the opposite conditions exist.

The implications of these results can be divided into two categories: theoretical and practical. The first of the theoretical implications involves the Beach and Mitchell (1975) model. When the contingency theory of decision strategy selection was proposed, it included a simplifying assumption that the independent variables of significance, accountability, and irreversibility would have significant and substantive main effects which could be combined in a simple linear fashion. The noticeable lack of interactions among these variables combined with the highly significant main effects in the three experiments presented here suggests that this simplifying assumption is correct.

Another theoretical implication involves the changing and differential effects of the three variables from one experiment to another. In Experiment 1, the effects of reversibility were approximately twice as strong as the effects of significance and accountability. In Experiment 2, the effects of all three variables were very close to equal. And in Experiment 3, the effects of accountability and significance were strong, while the effects of reversibility were weak. The model might be more generalizable if the differential effects were constant. However, the combined results of the three studies imply that the strength of the variable is very much influenced by other, unique characteristics of the decision situation.

From a practical point of view, the implication of the three studies is that decision makers actually use a number of different strategies as they engage in the process of making decisions. Furthermore, the selection of
these decision strategies is not random. Rather, it is influenced by
different characteristics of the decision task, including, as the research
has demonstrated, the levels of significance, personal accountability, and
decision irreversibility. Future research on this model should investigate
how those characteristics of the decision environment combine with other
factors in the model, such as the characteristics of the decision problem and
the decision maker, in an attempt to increase the accuracy of our prediction
about decision strategy selection.
Footnote

1 This research was partially supported by the Office of Naval Research Contract NR 170-731, N00014-76-C-0193 (Terence R. Mitchell and Lee Roy Beach, principal investigators).
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