

An Empirical Test of Thompson's Model of Strategic Choice

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ABSTRACT

Prescriptions found in Thompson's strategic choice propositions call for decision makers to select a decision approach according to demands posed by the decision task. Defining decision tasks in terms of means and ends clarity, the paper provides a way to conduct an empirical test of the value of the propositions. The test was made with several hundred organizational decisions, comparing the success realized when decision makers followed, and failed to follow, the guidelines found in the propositions. The findings suggest that success increases when the guidelines are followed and declined when they are not followed, offering considerable empirical support for Thompson's prescriptions. The implications of the findings for managers and management are discussed.

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I. INTRODUCTION

Research finds that decision-making involves intelligence gathering, direction setting, option identification, strategic choice, and implementation (e.g., Mintzberg et al., 1976; Nutt, 1984; Hickson et al., 1986; Harrison and Phillips, 1991; Eisenhardt and Zbaracki, 1992). This research effort considers the “*strategic choice*” step in which decision makers evaluate their options to select a course of action.

The selection of an evaluation approach has been controversial. Some call for judgment, others bargaining, and still others analysis (e.g., Cyert and March, 1963; Soleberg, 1967; Bower, 1970; Witte, 1972; Dean and Sharfman, 1996, Papadakis and Barwise, 1998). Those advocating analysis require facts to be gathered that order options according to their acceptance, originality, benefits, etc. (e.g., March and Simon, 1958; Churchman, 1971). Hoos (1972), Mintzberg et al. (1976), and Langley et al. (1995) question the usefulness of analysis to do this ordering. Instead, they advocate judgment in which decision makers draw on their skill and experience to make a choice or bargaining, should interest groups have reservations. Still others (e.g., Pfeffer, 1992) call for bargaining, no matter what the situation. They argue that a decision maker faced with a strategic choice is confronted with a number of value-laden considerations, such as emotional attachments, stakes, and animosities, which influence the choice. Factoring in subjective considerations resists judgment and analysis and requires bargaining to find a consensus (Snyder and Page, 1958; Allison, 1971; McKie, 1973; Cohen et al, 1972; Hickson et al, 1986; Langley, 1989; Eisenhardt, 1998). It should be noted that these studies seldom consider outcomes. Instead, a limited number of exemplars or logic is marshaled to support their claims (Fredrickson, 1985).

Formulating Thompson’s strategic choice ideas as prescriptions, identifying *when* to use analysis, judgment, and bargaining, provides a way to reconcile these contradictory views (Thompson and Tuden, 1959; Thompson, 1967). This seems reasonable because Lindblom (1965), Perrow (1967), Vroom and Yetton (1973), Daft and Weick (1984), Nutt (1989), Pfeffer (1992), Daft, (1995), Butler (1998), and still others derive their decision making frameworks from prescriptive interpretations of Thompson’s core ideas. A testament of the enduring value of these ideas can be found in a recent reissue of Thompson’s seminal work (Thompson, 2003). This prompted a new round of reviews by notable scholars (e.g., Weick, 2003), with all praising the insights offered. Despite the widespread recognition, adaptation, and emulation of Thompson’s ideas no empirical field-based research has been done to test the value of the prescriptions. This is unfortunate because, as Davis (2003) notes, Thompson’s ideas offer an intriguing set of hypotheses for empirical study. This research offers such a test by determining the extent to which success is realized when decision makers follow, and fail to follow, the strategic choice prescriptions. In the test, organizational decisions are used, which allows success to be determined by the decision’s effectiveness (measured by decision adoption and value) and efficiency (measured by implementation time). This avoids proxies for success indicators and uses real outcomes created by the decisions to test the merits of action taken.

II. DECISION APPROACHES

Scholars have interpreted Thompson’s ideas as prescriptions and descriptions, applying

their interpretations to a variety of topics that range from organizational design to decision making. In this research, some the prescriptions implied by the propositions are made explicit and applied to decision making. Thompson's (1967; 2003) framework, found on page 134, suggests a way to select among decision approaches using situational indicators. Using such measures in a contingency framework to select among actions has considerable support. Research conducted by Eisenhardt and Zbaracki (1992), Harrison and Phillips (1991), Bell et al (1998), and Ragagopalan et al (1998) finds that the situation being confronted by a decision maker contains clues that help in the selection of an effective decision making approach. Even March (1994) concedes that strategic choice theories have become theories of situation recognition. Guides for decision approach selection, based on situation recognition, can be traced to the work of Dewey (1910). His ideas has adapted, to one degree or another, by Lindblom (1965), Perrow (1967), Nutt (1989), Pfeffer (1992), Daft (1995), and Harrison (1999).

To test the prescriptive value of Thompson's work requires a number of interpretations and elaborations to specify the terms used and the approaches offered for the contingency framework. Situational indicators are assumed to stem from the decision task. A decision task is defined, and then operationalized, as outcomes (ends) and cause and effect relationships (means) that can be clear or ambiguous. Thompson's framework suggests that a decision approach selected according to the means/ends clarity of the decision task is more apt to be successful (see Table 1). In the discussion that follows, *my* terminology will be linked with Thompson's propositions, offering clarifications and extensions that allow an empirical determination of their value. As Weick (2003) observes, such clarification is required to validate the guidelines.

Thompson (1967; 2003) suggests that expected outcomes and beliefs about cause and effect relationships point to a preferred choice strategy. This is interpreted as whether there is *clarity* in the desired ends (e.g., an objective can be specified) and the means requires to produce such an outcome. Thus, ends and the means required to create them can be known or unknown. Four distinctly different decision tasks are defined by whether ends and means are known or unknown, as shown in Table 1.

Thompson calls for a "computational strategy" when expected outcomes and beliefs about cause and effect are believed to be clear. Such decision tasks have both means and ends specified. Decision makers can infer an objective, which serves as a norm indicating expected results. Options can be enumerated and evaluated by the extent to which the norm is reached. The needed computations call for *analysis* to manipulate data from archives, pilots, or simulations creating summative information, as an evaluation (Nutt, 1998a). Often such an evaluation prioritizes options, beginning with the option that has the best performance (Churchman, et al, 1957). For example, an evaluation of options for airline routes through a hub system that is configured in various ways looks for the shortest travel time and best utilization of airline's fleet of planes. To find those with the best performance, various routings and fleet mixes can be explored systematically. This permits a comparison of many complex alternatives. Used in this way analysis is both intricate and costly; but has the advantage of uncovering obscure conclusions about what works and why. Validity depends on the precision of the data collected and the power of a data manipulation approach. Data and the manipulation approach that was used are often cited to support the choice.

Table 1
Decision approaches matched to decision tasks

		Means of Producing Results	
		Knowable	Unknown
Ends or Objectives	Knowable	Analysis ¹	Judgment ²
	Unknown	Bargaining ³	Inspiration ⁴

Decision Approach	Task Features
1. Analysis	Decision tasks amenable to analysis: Both objectives and means of producing results are knowable. Decision-makers can commission a pilot test or a simulation to create the data to evaluate options.
2. Judgment	Decision tasks amenable to judgment: Objectives are known but means to produce results are not. Decision-makers make a judgment to identify the option that best meets performance norms.
3. Bargaining	Decision tasks amenable to bargaining: Means of producing results are known but the objective is not. Decision-makers form a team made up of key stakeholders and ask them to find an acceptable option.
4. Inspiration	Decision tasks calling for inspiration: Objectives and the means of producing results are unknown. Decision-makers network with stakeholders to find preferences and views of what will work, adapting to the requirements and insights offered by key stakeholders.

Thompson calls for a “judgmental strategy” under conditions in which expected outcomes can be specified but knowledge about cause and effect relationships is lacking. Such a decision task arises when an objective (ends) can be specified but the means of producing the desired result are ambiguous or unknown. This can be illustrated by cutting-edge ideas or new technologies that prompt unfamiliar problems and issues. As a result, the steps required to create the desired outcome are missing. This calls on decision makers to use their experience to suggest courses of action that can meet performance norms (Mintzberg et al, 1976). To illustrate, in the early 90s Mercedes Benz faced stiff competition from Japanese car manufacturers. Honda, Toyota, and Nissan came up with luxury brands that offered cars with more standard features at lower prices. In Japanese plants, manufacturing costs were 30% below Mercedes-Benz. For the first time in history, cost reductions became mandatory for Mercedes-Benz. To select a means (e.g., TQM, re-engineering) that can meet cost reduction expectations (the objective) required a judgment. When faced with such a choice, decision-makers may consult with recognized experts to select a means (cost reduction approach in the example). Alternatively, the decision maker may render a judgment if he/she believes their expertise is sufficient. One is often done to certify the other: Experts are hired by decision makers to defend their judgments (March 1994).

Thompson calls for a “compromise strategy” when cause and effect relationships

seem clear but outcome expectations are not. Such a decision task has clear means and foggy ends or objectives. When oversight bodies, customers, or suppliers have unknown or shifting expectations, this can result. To uncover an acceptable course action calls for a negotiations similar to those used by a jury to resolve a legal dispute. Thus, bargaining requires a compromise strategy (Pfeffer, 1992; Hackman, 1990). In his discussion of dominate coalitions, Thompson seems to be calling for a group to manage the bargaining (Hackman, 1990). The group arises from a dominant coalition composed of stakeholders. The stakeholders negotiate to find a consensus by debating the merits of options. Consider key interests in a for-profit organization, made up of the power figures that run marketing, R&D, production, finance, and engineering, who may disagree about objectives and have sufficient influence to block a strategic choice. Thompson would have the decision maker gather the key players in the inner circle into a group and help the group reconcile differing views of expected results before uncovering courses of action. This recognizes that the pluralism in such a situation must be carefully managed before success can be realized. When large numbers of people must be involved that have differing views, this can be challenging (Hickson et al., 1986).

Thompson concludes by suggesting an “inspirational strategy” for conditions in which neither cause and effect relationships nor outcome expectations are known. Such a decision task lacks both an objective *and* knowledge about means. To illustrate, stakeholders in mental health are made up of treatment professionals, clients and their families, the legal system making voluntary and non-voluntary commitments, oversight bodies, client-rights organizations, legislators who set the terms and conditions of permissible action, and still others. Before a strategic choice is made, decision-makers reconcile the demands of and obligations to diverse stakeholders by uncovering a course of action that is both mutually understood and agreeable. There nothing in Thompson to indicate how this is done. This void must be filled to test the contingency approach (Weick, 2003) so an approach was designed that seems to fit the demands posed by means and ends uncertainty. It calls for the decision-maker to network with stakeholders (Nutt, 1986; Nutt and Backoff, 1997). The “one-on-one” meeting allows a decision-maker to ask for ideas as well as describe viable ideas identified in previous meetings. New discoveries can be integrated with current understandings and insights after each meeting. The integration of seemingly useful ideas is offered up at the next meeting to test it. Interpreting the implication of this; a decision maker who can mobilize support for such an action, as a consensus emerges, is more apt to be successful (Shamir et. al, 1993; Wheatley, 1997). This distinguishes inspiration from bargaining. Bargaining is carried out in a group, such as a top management team. Inspiration is applied when the decision-maker meets with stakeholders, individually, to evolve a compromise solution. The opportunity for learning in a group is limited by the extent, duration, and quality of discussion (Hackman, 1990). In the inspiration approach, learning is evolutionary. This allows for a broad-scaled search via networking that continues until a viable idea emerges. When decision makers are able to weave their way through a thicket of what people want, and will reject, to find an acceptable solution an inspirational outcome is realized.

The prescriptions have decision-makers determine means and ends clarity to identify the kind of decision task being confronted. The decision approach that matches the demands of the decision task (the extent to which means and ends are clear) is recommended. Such a match is postulated to increase the chance of success. Given this

interpretation, the following hypotheses are suggested to test the prescriptions:

- H1: Decision approaches matched to the demands of the decision task increase the prospect of success; mismatches reduce the prospect of success.
- H1a: When means and ends are clear, the most successful approach is analysis.
- H1b: When means are unclear and ends are clear, the most successful approach is judgment.
- H1c: When ends are unclear and means are clear, the most successful approach is bargaining.
- H1d: When neither means nor ends are clear, the most successful approach is inspiration.

H1 predicts that decision makes will be more successful when the prescriptions are followed and less successful if not followed. The sub-hypotheses make predictions for each of the computational strategies (decision approaches). They predict that a match will produce more success than a mismatch. If this can be verified, considerable support for Thompson's propositions would result.

III. METHODS

A database made up of 376 organizational decisions is used to test the hypotheses. Each decision is examined to identify the decision approach used and the one called for by the prescriptions, documenting success indicators. To test the hypotheses, a comparison of the success of decision approaches that match the decision task will be compared to the success of decisions in which there is a mismatch of approach to task.

The database offers an ideal vehicle to carry out such a test because it contains many diverse decisions. Twenty-two percent were drawn from public organizations, 33% came from private organizations, and 44% from third sector (non-profit) organizations. A single decision was taken from each of these organizations. The organizations are medium to large in size. None was a new start-up. The eight types of decisions found in the literature (e.g., Hickson, et. al., 1986) were included, as follows: technology (18%), controls (14%), products or services (30%), personnel policy (5%), support services (18%), reorganizations (9%), and markets (4%). Sixty percent of the decisions were adopted, indicating that the database contains both good and less desirable decisions. Interviews were carried out to identify how each decision was made, including the evaluation and choice step. Values for success indicators came from questionnaires. Data was collected from *three* informants. The primary informant was the decision-maker. Nearly two-thirds of the decision makers were top executives (CEOs, COOs, or CFOs). Two secondary informants for each case were selected by the decision maker as having important knowledge about the decision. The secondary informants were line managers subordinate to the primary informant, in 57% of the cases, a staff person in 35% of the cases, and a task force member in 8% of the cases.

A. Collecting the Decision Data

People holding important positions in organizations were contacted to offer a decision for study. Each was told that the study was being carried out to uncover how strategic decisions are made. This would require a long-term effort to accumulate a sufficient number of

strategic decisions to uncover and appreciate decision making practices. A decision is defined for the informant as an episode, beginning when a decision maker became aware of a motivating concern and ending with an implementation attempt.

1. Selecting decisions and the other informants

The contact person was asked to select a recent strategic decision for study. (All decisions were made within six months of the interviews.) This ensured interest and firsthand knowledge in the primary informant. A strategic decision was one having considerable importance to the organization because it requires considerable resources and has long-term consequences (Mintzberg, et. al., 1976; Hickson et. al., 1986). The contact person identified three people involved in the decision for interviews, including the person who had primary responsibility for the decision. In most instances, the contact person suggested a strategic decision for which he/she was responsible and became the primary informant. Cases were collected in this way over a period of years.

2. Informant interviews

Each case has *three* informants. The primary informant (the decision maker) provided information about the steps taken to make a decision. The secondary informants provided information about outcomes. The secondary informant identified by the decision-maker as the most knowledgeable provided an additional listing of steps as a check on the information offered by the primary informant.

To recall events requires the collection of retrospective data. Data on events, such as decision-making steps can be biased by inaccurate recall due logical inconsistencies, memory lapses, and self-justifications (Bartlett, 1954). Golden (1992), for example, found that he could not validate 60% of his retrospective data on competitive strategy. Golden cautioned against extrapolating this conclusion, but others have some use this finding to discredit the collection of retrospective data. A way around such criticisms of retrospective data was provided by Miller et al. (1997). They suggest practices to improve validity using multiple informants and data sources, looking for factual events in interviews, and providing convergence in interpretations. In addition to this, my work developed the notion of second chance reviews to jog memory. Papadakis and Barwise (1998) endorse such steps, adding some procedural recommendations. Recent decisions to reduce memory failure, informants with firsthand knowledge, using archival records and documents, and crosschecking the sources used (interviews and documents) are recommended. The emphasis is to validate reported events.

Two informants were interviewed to uncover the steps taken in separate interviews. An interview procedure to deal with the dual problems of what people remember and choose to tell in an interview was devised. Employing qualitative research principles (e.g., Denzin, 1989), the informants are asked to recall what first captured their attention. Questioning proceeded from this point by asking, "what happened next." After an informant described what captured his/her attention, he/she was asked why this seemed important and merited action. Questioning proceeded in this way, noting the content of the last answer to formulate the next question. Information from the second informant validated the primary informant's recall (Yin, 1994).

3. Triangulating responses

A narrative of about 20 pages was prepared by the author to identify the steps taken, as recalled by each informant. To validate, the informants reviewed their narrative separately and made changes they believed were warranted. Next, existing documents, notes, proposals, and files were reviewed. The steps suggested by the documents and those noted by the informants were compared to find discrepancies and missing pieces to the "story" for each decision. Discrepancies and missing pieces were presented in a second chance interview with the primary informant (the decision-maker). In this interview, attempts were made to reconcile the discrepancies and find missing pieces (Huber and Power, 1985). As a result, method and two types of informant triangulation were applied to validate the decision descriptions. A clear picture of the decision, agreeable to the informants, was required to include a decision in the database. Twenty decisions failed to meet either clarity and/or agreement test and were discarded. Summaries were prepared by the author for the remaining 376 decisions that identified the steps followed to make each decision, how the steps were carried out, and the order of events (Nutt, 1993a; 1999).

Uncovering the explanatory variables in this study requires two classifications. The first classification was undertaken to identify the decision approach used, the second to find the one recommended.

B. Decision Approach Used

The author examined the narratives prepared for each decision, looking for how the alternatives being considered were evaluated. Classification and reliability procedures are discussed next.

1. Classification

The author reviewed the narratives, with the outcome of the decision hidden. A decision was classified as using analysis when summative information, such as cost-benefit and rate of return estimates, was collected to identify the recommended course of action. The decision approach was called judgmental when the strategic choice was based on comparing estimated benefits to expectations. The decision approach was termed bargaining when stakeholders meet and debated the merits of alternatives, working together to reach agreement about the strategic choice. The decision approach was called inspirational when the decision-maker sought out stakeholders, one at a time, to find what they would accept or agree to, reconciling these demands with those of others as they are uncovered. The author reviewed each narrative attempted to assign each decision to one of the four categories. When a review proved to be inconclusive, other documents, such as reports and meeting minutes, were consulted. If classification was still in doubt, the decision was placed in a fifth category termed "undetermined."

2. Reliability

To improve intra-rater reliability, the author reclassified the decisions until agreement was reached. The decisions were sorted into one of the five categories (analysis, judgment,

bargaining, inspiration, or undetermined) and then compared with the previous classification. Agreement was realized after the third sort – all classifications in this sort corresponded with the previous one. These reclassifications were separated in time by a month or more. Inter-rater reliability was addressed by having a colleague review the decisions and classify them according to the decision approach used. My colleague was not told the purpose of the task until he had finished, making him blind to the hypotheses. The definitions offered in the previous paragraph were provided, asking him to match cases to these four categories, or to an “unclassified” category. Decisions with a disputed classification were identified. Inter-rater reliability was given as the percentage agreement and was found to be 99%. The four disputed cases were discarded, creating 100% classification agreement in the decisions used to test the hypotheses.

C. Recommended Approach

The recommended decision approach was identified for each decision, using the criteria in Table 1. The narratives were reviewed one-at-a-time to see if ends and means were clear or ambiguous, using available documents as backups.

1. Classification

If an objective had been identified at some point, but then ignored, or if such identification was possible from the information collected, the clear category for ends was used. The ambiguous/disputed category was selected for ends if setting an objective was not considered or if objectives were in dispute; and if an expected result could not be derived using the data collected. Means were called ambiguous if the decision lacked clarity about how things worked, as in new technology or novel practices. Means were termed clear when knowledge about procedure was available, even if this knowledge was overlooked. Using this information the author identified a recommended decision approach for each decision. To avoid contamination, this was done some months after the other classification had been completed.

2. Reliability

To provide intra-rater reliability, the classification of means and ends clarity was repeated, following the reclassification and convergence procedures described previously. Some time after the first classification, the same colleague classified the decisions, asking whether the decisions had clear or unclear means and ends. This had a 98% agreement with my sort. The eight disputed cases were dropped so there was 100% classification agreement in the decisions used to test the hypotheses.

3. Decisions used in the study

In all, fifty decisions in the database lacked the information needed to classify them according to approach used and/or recommended. Twelve others had disputed classifications. A total of 62 or 16% of the decisions (50 that lacked documentation and 12

with disputed classifications) were dropped, leaving 314 for study. These 314 cases had 100% classification agreement, making tests of classification agreement unnecessary.

D. Classification Validity

Selecting a decision approach can create doubt in the mind of the decision-maker. After the fact, some doubt is swept away, possibly making the most appropriate decision approach clearer than it was at the time the decision was made. Fishhoff (1975) calls this the "hindsight bias." It is easier to recognize the more telling cues after the fact (Nisbett and Ross, 1989). In the same way, classification errors are easier to spot after a decision outcome is known. An after the fact classification of what *should* be done, by the author or by others, would be an easier task than the one that faced a decision maker. This kind of bias has little effect in this study because the outcome of the decisions was hidden before any classification was attempted. In addition, there were far too many decisions for the author to recall which were and were not adopted, how long each took, and how they were rated. In addition, the colleague that verified the classifications had no knowledge of decision outcomes. These two sets of classifications converged. This suggests that my classifications of decisions were not influenced by an unconscious recall of outcomes.

E. Examples Drawn from the Database

To illustrate the results, a decision from the database that fits each of the categories is described along with one in which there was a mismatch. (Examples of decisions that fit each of the sixteen categories are available from the author.) Illustrations of decision with a match and a mismatch follow. Information drawn from the data collected is used to determine whether ends and means could have been specified.

1. Analysis

When both ends and the means of producing results understood and accepted by key players the decision task is amenable to analysis. For example, the Anthony Thomas (AT) Candy Company investigated putting a private label, with their logo, on a candy product patterned after one the company made for a client company. AT had considerable knowledge about how to manufacture and package this candy product (clear means). Summative information from forecasts of sales and profits (clear ends) for this niche was used to determine whether to introduce the proposed AT product. Because the key features governing success were known and could be estimated to provide the basis for the strategic choice, analysis was the appropriate approach. When ends or means are assumed unknown, when both are clear, an inappropriate approach is applied. To illustrate, judgment is substituted for analysis when a decision-maker fails to draw on knowledge of *how* results are produced. For example, the Mead Paper Co. used consultant reputation to select the Delta P program cost reduction program. Company leaders behaved as if they had no idea of how such a program worked or how to compare it to others (ambiguous means). The consultant had produced good results in past work so hiring them again seemed advisable (the judgment). However, the expected results (cost reduction) for the "Delta P" program and other programs could have been requested from consultants via RFPs. The proposals

could be compared to see which offers a plan (e.g., senior people, proposed approach, time lines. etc.) most able to produce favorable results. This would bring in means as well as ends into the evaluation of the cost reduction schemes and serve as the basis to make this strategic choice.

2. Judgment

A decision tasks calls for judgment when ends are understood and accepted by key players, but the means of producing results are vague. To illustrate, an insurance company evaluated a proposed bonus system for its high performing independent agents by asking the agents to assess the plan. Ends were clear (bonus amount) but means were not (the valence of incentives to staff). The strengths and weaknesses of the plan were identified according to the types of rewards valued by the best agents, how the rewards would influence behavior, and obstacles to reach a performances level that would activate a reward. The high performing agents are the experts here - the only parties to the decision that understand whether a bonus approach would work. This makes judgment the correct approach. A less appropriate approach is substituted for judgment when ends are assumed unknown or when the means is believed to be clear. For example, bargaining would be substituted for judgment when performance data for a relevant objective are not collected, or set aside, and when one focuses attention on an illusory means. To illustrate, officials in the U.S. Navy selected new a procurement procedure by pulling together procedural elements that the officials thought were useful. Here ends were clear (e.g., processing speed) but means were not (procurement procedures). When the recommended procedural elements were amalgamated and then put to use, there was no attempt to determine whether important criteria, such as speed of processing improved or if cost and making good contractor selection decisions moved in desirable directions. Instead, untested beliefs of the officials about ways to approach procurement were used to determine how it would be carried out.

3. Bargaining

Decision tasks in which the means of producing results are understood and accepted by key players but where ends unclear or disputed call for bargaining. To illustrate, the regional manager for Marshall Fields created a cross-functional team to devise a speedier way to move goods in a retail store from the receiving docks to sales areas. The team dismissed the speed criterion (ends were not clear) and used their knowledge about how goods move in a store (means clear) to make a recommendation. They demonstrated how an emphasis on speed would lead to errors in destinations and paper work. This could create chaotic conditions that would increase both costs and lost sales. The team discussed the issue and identified a mutually accepted way to move goods from the dock to the sales area. In the Marshall Fields case, bargaining was used as called for by the prescriptions. A less appropriate approach is substituted for bargaining when ends are disputed or unknown or when knowable means is believed to be unknown. In such a situation, disputed or bogus objectives are applied and known means of producing results are ignored. For example, at Nationwide Insurance the Chief Information Officer responded to out-of-control workloads for company computers by suggesting new criteria that established priorities for projects. The CIO defended the new priorities with what seemed to be self-serving arguments, which

lead to the decision being overturned. Key users were not consulted to determine their priorities. Furthermore, no one attempted to find the cause of the increased demand for computing services. The CIO could have mobilized the department's clients and uncovered needs that were behind their demands. A priority listing of these needs, submitted to higher-ups for funding, would diffuse the situation and may resolve the capacity issue.

4. Inspiration

Decision tasks in which neither the means nor ends are clear call for inspiration. To illustrate, in a large university an athletic department found a way to comply with the Title IX, which calls for gender equity, by working with stakeholders (e.g., women's groups, federal officials, and affected coaches), one stakeholder group at a time. Neither the ends (gender equity) nor were the means (ways to create equity) clear. Networking found a solution to demonstrate gender equity to oversight bodies by called for equity in the travel funds made available to non revenue-producing sports. A less appropriate approach would be substituted for inspiration when either objectives or means, or both, are treated as if they were known. For example, judgment displaces inspiration when a decision-maker fails to recognize the folly of using a bogus performance indicator. For example, a large metropolitan hospital dealt with a threatened nurse strike by dusting off a disaster plan and applied it to find identify places that can be contacted to relocate patients (a judgment). The desired outcome of the disaster plan was assumed to apply, even though a disaster plan seeks to match an unknown but potentially huge demand with varied needs to all available sources of case. Should a nurse strike occur, needs and numbers of patients to be relocated, while smaller, would also be unknown (demands unclear). The hospital CEO could not assume that disaster plan arrangements would be available to them (means assumed to be clear, but were not). There were no prior agreements that could be used to forge a relationship between hospitals. Hospital officials could have networked with sister institutions, hospital associations, and medical centers to find ways to relocate patients, should a strike materialize.

F. Measure of Success

A successful decision is both effective and timely. Effective decisions are put to use and have merit, suggesting adoption and value as success indicators (Pelz, 1978). To determine use, decisions were followed for two years noting changes that occurred. Some decisions were found to have a limited scale of use, suggesting a partial adoption. Other decisions experienced delays before full adoption. Still other decisions were withdrawn after performance monitoring, becoming ultimate rejections, and some of the initially rejected decisions were put to use. Using the information two measures of use were created called sustained and complete adoptions. "Sustained adoption" accounts for the number of delayed adoptions and withdrawn decisions in the adoption rate, making it a downstream measure of use. The "complete adoption" measure treats all *partial* adoptions as failures, such as a MIS that is not used by all departments in an organization, making it an indicator of the degree of use. These two measures have a 70% correlation. They will be used to document two different kinds of adoption outcomes that can be experienced by an organization.

Objective data describing a decision's economic return, money saved, or benefits realized provide the ideal way to measure value. Such indicators are difficult to collect. Organizations are reluctant to provide information about money lost or gained (Bell et al., 1998). Alexander (1986) and Bryson and Cullen (1984) find that a manager's subjective determinations of decision value correlates with objective measures, providing a way around these difficulties. In this study, an estimate of decision value was obtained from ratings made by the *secondary informants* who marked along an anchored rating scale with five anchors to signify each decision's value. The scale anchors defined a rating of five as outstanding, which was assigned to decisions that made a decisive contribution by providing exceptional perceived quality. A rating of one, termed poor, was assigned when a decision had no impact. The remaining scale points for the decision value measure were termed good for ratings of four, adequate for ratings of three, and disappointing for ratings of two. At this point, a researcher can measure differences or take steps to enhance precision. Steps to improve precision seem the preferred approach. Estimate-discuss-estimate (EDE) employs a procedure that shifts a subjective estimate toward a true value (e.g., Gustafson et al, 1973). This is done by improving recall. First, ratings were made independently by the two secondary informants and the average of the ratings computed. Then, informants discussed the result. If the individual ratings are far from the average, there is pressure to explain. Informants are then asked to offer reasons for rating a decision as they did. In the exchange, the more compelling arguments carry the most weight. When informants consider such arguments and make a second rating. The average of the second set of ratings was found to moves toward a true value. In this study, the average value of the informants' second ratings was used in the analysis.

Timely decisions are universally preferred by managers (Harrison, 1999). A key efficiency measure is decision duration, made up of two time-periods. The first is the time devoted to plan development, from need recognition to the completion of a plan. The second identifies the elapsed time from the end of plan's development to the termination of implementation attempts by an organization. This second period, called "implementation time," was used in this study because it follows the approach used to make a strategic choice and, thus, could be influenced by it. The ERE procedure was used to improve the precision of each estimate.

G. Analysis

Two analyses were carried out to test the hypotheses. The first tests the general hypothesis, H1. Here the explanatory variable is made up of match and mismatch categories. A match occurs when a decision was made with the recommended approach, a mismatch when the recommendations were not followed. ANOVAs were carried out that pooled the matches and mismatches as the independent variable with sustained adoption, complete adoption, decision value, and implementation time as the dependent variables. Correlation's among the value and adoption dependent variables ranged from $R = .57$ to $.76$, and all were statically significant. To account for these relationships, a MANOVA was also carried out that combined the sustained adoption, complete adoption, and value indicators for each hypothesis to be tested, weighting each equally. Implementation time was excluded because its correlations with the effectiveness measures were not significant. If the difference in

mean values of the dependent variables reach statistical significance and matches prove to be more effective and efficient than mismatches, the hypotheses would be supported.

The second analysis examines matches and mismatches for each of decision approach to determine if the results of the first analysis generalize. This provides a test of H1a, H1b, H1c, and H1d. Four explanatory variables were created, one for each sub-hypothesis. As a result, each explanatory variable has four categories. The categories include one of the decision approaches used as recommended and three others that indicate what happens when each of the other three approaches were substituted for the recommended approach. Each of the four sub-hypotheses was examined by looking for significant differences. To do so, ANOVAs and MANOVAs were carried out with one of the four decision approaches as the explanatory variable identified the match (e.g., analysis recommended and used) and the three possible mismatches (e.g., judgment, bargaining, or inspiration) using sustained adoption, complete adoption, decision value, and implementation time as the dependent variables, as above. When inspiration was substituted for either analysis, bargaining, or judgment there were too few observations to permit an inference so analysis was carried out with the remaining categories.

The sub-hypotheses can be supported if a decision approach, used as recommended, has significantly more success (measured by the adoption, value and duration indicators), compared to using the three another approaches. Significant differences are determined by a Student Newman-Kuels (SNK) test. This test compares the mean values of the four categories that make up each explanatory variable two at a time, with the equivalent of a t-test ($p \leq .05$). Categories with significant differences were denoted with a letter code in Table 2 using the letter A to signify the best outcome, B the second best, etc.

Table 2
Statistical results

	USE		EFFECTIVENESS				EFFICIENCY			
	Frequency		Sustained Adoption	Complete Adoption	Decision Value		Implementation Time			
EXPLANATORY VARIABLES	N	Freq.	Rate	SNK ¹	Rate	SNK	Rating ²	SNK	Months ³	SNK
Match	130	41%	79%		76%		4.0		8.6	
Mismatch	184	59%	47%		44%		3.3		9.1	
ANOVA Results										
F value/p value			23.09/.0001		23.35/.0001		16.8/.0001		.89/ns	
R ²			7.1%		7.2%		5.3%		-	
MANOVA Results										
F value ⁴ /p value			9.21/.0001							
Analysis										
Recommended	59	19%	78%	A	78%	A	3.9	A	8.7	
Analysis for Judgment	17	5%	24%	C	23%	C	2.9	B	9.3	

Table 2 (Continued)

	USE		EFFECTIVENESS				EFFICIENCY			
	Frequency		Sustained Adoption	Complete Adoption	Decision Value		Implementation Time			
EXPLANATORY VARIABLES	N	Freq.	Rate	SNK ¹	Rate	SNK	Rating ²	SNK	Months ³	SNK
Analysis for Bargaining	17	5%	41%	B	41%	B	3.2	B	2.7	A
Analysis for Inspiration	0	-	-		-		-		-	
ANOVA/F & p value			6.88/.002		6.67/.002		5.09/.008		3.2/.05	
R ²			13.7%		13%		10.4%		5.8%	
MANOVA/ F & p value			2.75/.01							
Judgment										
Recommended	41	13%	85%	A	83%	A	4.2	A	10.0	
Judgment for Analysis	56	18%	50%	B	48%	B	3.4	B	8.0	
Judgment for Bargaining	19	6%	21%	C	15%	C	3.0	B/C	9.9	
Judgment for Inspiration	2	<1%	-		-		-		-	
ANOVA/ F & p value			6.42/.0005		7.57/.0001		5.36/.001		.46/ns	
R ²			14.9%		17%		12.7%		-	
MANOVA/ F & p value			3.51/.0004							
Bargaining										
Recommended	26	8%	69%		69%		3.8		5.4	A
Bargaining for Analysis	17	5%	65%		53%		3.5		12.6	B
Bargaining for Judgment	10	3%	70%		60%		3.8		13.7	B
Bargaining for Inspiration	1	<1%	-		-		-		-	
ANOVA/ F & p value			1.18/ns		.97/ns		.67/ns		4.24/.02	
R ²			14.9%		17%		12.7%		19%	
MANOVA/ F & p value			.49/ns							
Inspiration										
Recommended	4	1%	100%	A	75%	A	4.3	A	8.7	A
Inspiration for Analysis	14	5%	71%	B	57%	B	4.0	A	7.8	A
Inspiration for Judgment	24	8%	46%	C	46%	C	3.2	B	9.0	A
Inspiration for Bargaining	7	2%	43%	C	43%	C	4.0	A	19.3	B
ANOVA/ F & p value			3.0/.04		2.7/.05		3.0/.04		2.6/.05	
R ²			10.6%		7.0%		10.3%		7%	
MANOVA/ F & p value			2.15/.05							

1. Student Newman Kuels: The letter codes indicate where significant differences in the mean values were found with the equivalent of a t-test, $p < .05$, beginning with A to signify the best outcome, B the second best, etc.

2. Scale: 5 = outstanding, 4 = good, 3 = adequate, 2 = disappointing, 1 = poor

3. Time measured in months from end of development to use or abandonment.

4. Hotelling-Lawley Trace Test.

The best result is shown in bold type.

IV. RESULTS

A test the general hypothesis can be made by determining how the decision approaches fared, overall, when there was a match and a mismatch. A test of the sub-hypotheses is made by comparing the success of a given decision approach with a match (e.g., analysis used and recommended) with the possible mismatches (e.g., analysis recommended and judgment used). H1 and its four sub-hypotheses would be supported if decisions in which there was a match have more success than the mismatches.

The ANOVA and MANOVA results are shown in Table 2. The table is organized to correspond to the general hypothesis and the four sub-hypotheses. The test for general hypothesis is shown in the match-mismatch comparison of outcomes at the top of the table. If matches have more adoptions and value and require less time, this hypothesis would be supported. The sub-hypotheses are tested by the four blocks of data that follow. In each block, compare the match with the three possible mismatches. A sub-hypothesis is supported if the outcomes for a match prove to be significantly better than the outcomes produced by each of the three mismatches.

For the general hypothesis, the ANOVA and MANOVA results show the effectiveness measures to be statistically significant, and in the hypothesized direction. Implementation time also moved in the hypothesized direction, but failed to reach statistical significance. This suggests that inferred prescriptions improve decision effectiveness, without a loss in timeliness. The magnitude of the differences in mean values of the effectiveness measures provides additional support. Large drops in both adoption rates and decision value were noted with a mismatch, compared to decisions that followed the inferred prescriptions, the matches (Table 2). Failing to use a prescribed approach results in a decline in sustained adoptions from 79% to 47% and complete adoptions from 76% to 44%. Using the anchors found in the value measure to describe the result, the value rating declined from “good” to “just above adequate” for the mismatches.

The second analysis compares the match and mismatch results for each decision approach to test H1a, b, c, and d. The bottom portion of Table 2 summarizes these results. An SNK test is used to identify statistically significant differences. As shown in Table 2, most of the differences for the effectiveness measures reached significance, supporting the sub-hypotheses. This is true for some but not all of the implementation time comparisons. Each sub-hypothesis will be considered next.

When analysis was used as recommended effectiveness increased. This supports H1a. Seventy-eight percent of these decisions were sustained and 75% completely adopted for decisions viewed as “good” (Table 2). The data that follows in Table 2 demonstrate what happens when analysis was used but another approach was recommended. When this occurred, adoptions fell from 78% to between 23% and 41% and decision value declined from good to adequate, all in the hypothesized directions. Such results confirm that analysis matched to the decision situation lead to effective outcomes. The results for implementation time were harder to interpret. Significant time differences were identified when analysis displaced bargaining. This suggests that, when used in place of bargaining, analysis can be timely, but ineffective. (None of the decisions displaced inspiration with analysis, so no assessment of this of this factor is possible.) Overall, the findings provide some insights into the failures of analysis reported in the literature (e.g. Hoos, 1972; Mintzberg et. al., 1976; Langley et. al., 1995). It appears that using analysis when conditions call for

judgment or bargaining, may be a cause of the analysis failures. Finding decisions amenable to analysis proved to be difficult for the decision-makers in this study. Only 40% (59 of 156) of these decisions were correctly identified. Furthermore, analysis was used by the participants in the study when another approach was called for in one-third of the decisions (34 of 93). These findings appear to explain much of the analysis failures reported in the literature.

When judgment was used as recommended by the inferred prescriptions the same results were observed, supporting H1b. Whenever judgment was used in place of analysis or bargaining, a significant decline in effectiveness was observed (Table 2). (Because there were too few decisions to permit a statistical analysis, the effects of inspiration could not be determined). Using judgment as recommended leads to 85% sustained adoption and 83% complete adoption, for decisions found to be "above good." Adoption fell to 50% or below and value declined to between adequate and good for decisions in which judgment was applied to decisions that require analysis. When judgment was applied to decisions that call for bargaining effectiveness declined even more with adoptions falling to between 15% and 21% and decision value declining to adequate.

The data suggest that decision-makers prefer judgment. Considering the decisions in this study that called for judgment, seventy-eight percent (41 of 92) were recognized. However, judgment was overused. Judgment was applied when another approach matched the decision task in two-thirds (77 of 118) of the decisions. This results in an over-use of judgment. This finding may explain why judgment has been observed so often in past research (Langley, et. al., 1995). The success claimed for judgmental approaches in prior research may stem from considering only success cases.

Matching inspiration with the decision task lead to 100% sustained adoptions and 75% complete adoptions, for outcomes rated well above good. There was a dramatic decline in adoptions whenever inspiration was used for decisions in which the propositions called for another approach. All declines in the adoption measures were in the hypothesized direction. However, there was a significant decline in value when using judgment in place of inspiration. Using inspiration as prescribed increases adoption provides some support for H1d, although this support was less conclusive than that for analysis and judgment. Except for using inspiration under conditions that called for bargaining, there was no loss in timeliness. When this occurred, the time to implement more than doubled. The difficulty of finding a mutually agreeable course of action within the stakeholders may draw out the required networking, as well as reduce the prospect of an adoption. Substituting inspiration for bargaining increased implementation time by more than 200%.

Inspiration appears to have a small, but important, role in making a choice. In this study, only 1% of the decisions called for inspiration. In addition, the findings suggest that inspiration is often misused. Inspiration was selected when the propositions called for another approach 93% of the time (45 of 49 cases). When the situation called for inspiration decision-makers in the study made better selections, correctly identifying fifty-seven percent of these decisions.

Considering bargaining, very different results were observed. Bargaining was clearly linked to good decisions, but the effectiveness indicators show that decisions with a match were as effective as decisions with a mismatch (see the SNK test results in Table 2). Using bargaining indiscriminately produced high adoptions and good decisions, even when analysis or judgment was recommended. This fails to support H1c. Some qualification is

required. Using bargaining when analysis or judgment was recommended increased the time to implement by more than 250%. Furthermore, effectiveness findings like those cited above are often found in the literature (Hackman, 1990). A strong force for adoption is created when a group is empowered to make the decision. The findings in this study add to this well-known result by showing that a price must be paid when bargaining is indiscriminately. Implementation time more than doubles when the recommended approach is displaced by bargaining. In nearly two of three of the decisions studied (43 of 69), the decision-makers did not use bargaining as recommended. In addition, bargaining was used in 52% of the decisions (28 of 54) that called for another approach. The failure to use bargaining as called for extends implementation time.

Overall, the findings offer considerable support for the hypotheses. When Thompson's prescriptions were followed, success improved. Comparing each match to every possible mismatch provides a stronger test. For all comparisons that had sufficient observations to draw an inference, adoptions, and decision value are much higher with a match than a mismatch. Because the sub-hypotheses were confirmed by most of the match-mismatch analyses, support for the prescriptions seems generalizable. A qualification arose for bargaining. Adoptions and decision value were similar whether bargaining was used as recommended or not, attributed to cooptation. However, there is a huge loss in timeliness when bargaining displaces analysis or judgment. Following the prescriptions to select analysis, judgment, and inspiration produced an increase in adoptions and value, without any efficiency penalties. Using bargaining as called for by the propositions dramatically reduced implementation time. Together these findings offer considerable support for Thompson's model of strategic choice. Because 59% of the decisions studied did not follow the inferred guidelines, using the propositions is apt to have a beneficial impact on decision-making success.

V. CONCLUSIONS

Thompson's prescriptions were found to be desirable and seem feasible; decision makers have sufficient information to apply them. Empirical results show that following the prescriptions increased success. When guidelines derived from the prescriptions were followed adoptions doubled and an increase in decision value from "just above adequate to "good" was realized, without a loss in the time to implement the decisions. All of the decision approaches produced outcomes termed "good" when matched to the decision task, including the analytical and inspirational approaches.

The feasibility of applying the prescriptions requires a different kind of analysis. Recommendations call for identifying whether performance measures (ends) and the means of producing results (means) are known or knowable. Eighty-four percent of the more than three-hundred decisions that were studied had sufficient information to make this determination, *after* the decisions were made. This shows that the required information was available as the decisions were unfolding. Information availability is just part of the challenge. Decision-makers must also be able to both recognize this information *and* put it to use. An appraisal of the feasibility of doing this can also be inferred the data collected. Sixteen percent of the decisions resisted classification, which would make it difficult to apply the inferred prescriptions. This also suggests that eighty-four percent of decisions that reach the choice stage of a decision making process have sufficient clarity in means and

ends to apply the prescriptions. Nearly sixty percent of the decisions failed to use the best approach, which lead to a fifty-percent decline in success. This suggests that Thompson's propositions can be applied to most decisions and doing so will have a favorable impact on success.

The findings in this study also extend our insights into how to apply analysis, judgment, and bargaining. Analysis (Thompson's computation) works very well, *if* used appropriately. This suggests that analysis has been given a bad rap in much of the behavioral decision-making literature. When matched to the decision task, analysis produces superior results. However, in one of three of the cases examined, analysis was used when another approach was more appropriate. This may explain the failure of analysis reported in the literature. This failure may stem from using analysis when the situation called for judgment or bargaining. Analysis was found to be a valuable tool in when means and ends can be specified and less so when one or both are unknown. To justify the use of analysis, a demonstration of the potential to increase understanding by exploiting available knowledge of means and ends seems needed. Because analysis was misused so often, training in how *and* when to use analysis seems essential.

Judgment also produced good results when used as recommended. However, the research found that decision makers were inclined to *overuse* judgment. Judgment was selected when another approach had a better fit to the decision task in two-thirds of the decisions in which decision makers used judgment. This may explain why organizational decision-making researchers, drawing on descriptive research that does not document outcomes, often call for judgment (e.g., Mintzberg et. al., 1976; Langlely, 1989). The failure to document success in these studies may have produced a misleading conclusion. The success claimed for judgment could stem from stumbling on "success cases" and failing to examine unsuccessful ones.

Bargaining as a decision approach also produced results that extend those of previous research. Studies of Vroom's "C2" approach, which requires bargaining in groups, show that bargaining is nearly always successful (e.g., Vroom and Jago, 1978). In this study, bargaining produced good results whether called for by the decision task or not, although implementation time more than doubles if bargaining is used when another approach is recommended. Neither adoption nor decision value were adversely effected when bargaining displaces the recommended approach. This can be explained by the effects of cooptation (Hackman, 1990). Cooptation promotes ownership or "buy-in" that increases the prospect an agreed upon course of action will be followed. This "participation effect," as it is often called, is widely understood. This study confirms this effect, but finds the price to be paid when bargaining is used indiscriminately. An "inner circle" empowered to reach a consensus creates a powerful force for adoption, but the required *time* increases by more than two hundred percent when another decision approach was recommended. Misusing bargaining makes adoption likely but it dramatically *increased* implementation time. This often happens. Approach was recommended in nearly 60% of the bargaining decisions. When this occurred, decision makers paid a heavy price in lost timeliness.

Inspiration can be very successful when conditions warrant. When there is little agreement about means and ends, decision-makers are called upon to dialogue with stakeholders, one at a time, to uncover what is seen as desirable or doable. Each new contact blends past insights with current discoveries to gradually fashion a workable strategic choice. Inspiration was found to have a small, but important, role in decision-

making. In situations amenable to such an approach, it was quite effective; gradually building a commitment that lead to success. Networking was much less successful when it displaced judgment, compared to analysis. It was easier to avoid doing a useful pilot than to ignore existing performance data. In addition, networking did not work well for decisions that called for bargaining with an inner circle. Dealing with stakeholders' one-at-a-time leads decision makers away from a consensus. In bargaining, stakeholders with the most relevant information sway others. Networking with its emphasis on reconciling views is apt to weight all points of view equally. This can discount the more relevant ideas and fail to convince the other key players.

Thompson devotes considerable time to discussing the role of a dominant coalition in organizational life (Thompson, 1967; 2003). Applied to decision making, the dominant coalition offers a consultative environment in which decisions (and other actions) are taken. This research offers a few insights into when consultative environments are needed. First, only 32% of the decisions in the study were made in a consultative environment. There were two types, negotiated and networked. In the negotiation types, 8% used consultation as recommend. This produced both effective and efficient results. An additional 8% applied negotiation but did so when another approach is recommended. This was effective, but efficiency was lacking. Networking also contains a number of consultative features believed to be useful in the dominant coalition ideas of Thompson. Sixteen percent of the decisions activate this type of consultation. Of these, just 1% produced both effective and efficient results. An additional 15%, in which the recommendations did not call for consultation via networking, produced results were less effective and less efficient. This suggests that a dominant coalition, which appear to call for inner circle consultation and involvement, was not required for 68% of decisions studied. There are several implications. First, decisions that consider strategic re-positioning, such as selecting new lines of business to promote sustainable competitive advantage, were not included in the study. Such decisions, while infrequent, would demand more inner circle involvement, such as top management teams. However, participation and networking is effective at all levels of an organization (Hackman, 1990; Nutt, 1998b). One can imagine an inner circle for each of these organizational levels made up of stakeholders with that crucial knowledge that can be drawn upon during decision making. Further insight into the types of organizational decisions (e.g., products, financing, etc.) that do and do not benefit from inner circle involvement may offer some useful qualifications to the findings produced by this study. Second, the decisions collected suggest that Thompson's claim that "analytical and judgmental tasks" bring in people with these skills into the inner circle is questionable. In this study, decision makers with these skills seem to have had control from the outset and made no effort to involve others. Furthermore, this produced both effective and efficient outcomes. In effect, extensive consultation was neither needed nor desirable for analytical decision tasks. Additionally, the propositions for inner circles suggest that they must be in place before an organization can function at a high level. Judging from this research this does not appear to extend to decision making. This implication of this, if validated, has interesting applications to making strategic choices.

The validity of the study findings depend upon whether valid classifications have been made. The allure of analysis or judgment for people that prefer to apply one of these approaches could have created a distorted picture of how strategic choices were made. Some decision-makers may be prone to recall "quantitative-like" steps because they have a

quantitative orientation, which leads them to overlook other kinds of assessments. A bias toward judgment may arise from decision-makers that exude confidence, want fast answers, and prefer to go with *their* views of what to do. If such biases occurred, analysis and judgment would show up more often in the study than either would in practice. However, this kind of bias would also crop up as variations in what informants said. Also, decision makers exuding confidence, misplaced or not, may sweep along others and have more success. Those showing doubt may have less success, creating another kind of bias. The triangulation used to validate the information collected in this study helps to overcome such biases. Triangulation brings out much, but perhaps not all of the information needed to ensure an accurate classification of the decision approach used and recommended in the decisions studied.

The study raises several questions that merit further research. More work is needed to understand the inspiration mismatches (inspirational recommended, but not used) that rarely occurred or never occurred in the study. Do the mismatches capture special conditions and circumstances surrounding the need for inspiration that merit further exploration? What prompts the overuse of inspiration? Can inspirational decisions be linked to decisions made to sustain a firm's competitive advantage? If so, inspirational decisions would rare but have crucial importance. The connection of inspiration to competitive advantage merits further study.

Additional work is needed to understand why decision-makers frequently make erroneous deductions about which decision approach to apply, leading them to misuse bargaining and the other approaches. Nearly six of 10 decisions were unsuccessful, seemingly because decision-makers failed to recognize the demands posed by the decision task. Diagnostic errors may stem from a predisposition to use a particular approach. Some decision-makers seem drawn to bargaining, analysis, or inspiration, whether appropriate or not. Such preferences may stem from the decision-maker's cognitive makeup. Research has linked managers with particular decision styles, measured by the Myers-Briggs Type Indicator (MBTI), to preferences that correspond with their cognitive predisposition (Nutt, 1993b). People with an NF (intuitive-feeling) style in the MBTI were drawn to using an inspirational approach, those with a SF (sensing-feeling) style to bargaining, and those with ST or NT (sensate-thinking or intuitive-thinking) styles to various forms of analysis. The desire to use judgment may be connected to the availability of power and the desire to use it. Managers who practice a heavy-handed approach toward managing people may develop a "use it or lose it" view of power and be drawn to making judgments to exercise that power. If so, this may explain the urge to overuse judgment. Investigating these speculations offers a fruitful path for further work. More work is needed to appreciate the difficulties of assessing means/ends clarity. Decision makers may need special tools to assist them in making the needed assessments.

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