

*Research Proposal*

*Cumulative Stupidity ?*

*or*

*Why organizations don't learn*

*Mgmt 8101  
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*A cold day in Bangalore, India. Some students wait in a classroom for the first session of a six month long course in computer programming to begin. There are many empty chairs and tables in the room - only about half the seats are occupied. The planned number of students has dropped from 50 to just 11.*

This describes a situation facing the division of the company I was working for last year. Many questions were raised about this program, all of which eventually boiled down to - *how and why did the organization arrive at the decision to conduct the program ,even though it meant operating way below capacity?*

### **Introduction:**

Bangalore is India's Silicon Valley. I was working in the training division of an organization in Bangalore last year. One of my tasks was to design and launch a year long training course for undergraduates. The objective of the course was to make the participants employable as programmers by any of the numerous software development companies in the city.

Training, especially undergraduate training, is perceived as a lucrative business in India. As the demand for suitably trained programmers exceeds their supply, undergraduates flock to join any kind of training program purporting to develop any kind of computer skills. This is partly because training opportunities for undergraduates are limited; adequate hands on experience is usually not provided in the formal educational system.

The undergraduate computer training market is dominated by a couple of large firms, with the rest of the firms in the industry typically being small one man operations. The industry is subject to high entry and exit rates.

Till November 1994, the thrust of my division had not been on undergraduate training programs. We had focused on corporate training programs - a different ball game altogether, which involved providing specially designed courses for software export houses, multinationals and other companies in the software industry. These programs typically involved weeks of intensive effort by faculty. However, while they generated high margins, the cash flows accruing from these programs were irregular. Therefore, in order to stabilize our cash flows and make up for the projected shortfall in revenue, the division manager and I decided to launch undergraduate training programs. While we did not carry out any formal analysis of our strengths and weaknesses, we felt that we had the capabilities to conduct the program - we had the required physical resources (hardware, software, classrooms and course material), and the faculty had the requisite experience. Also, the fact that a similar program had been conducted some years ago made us feel that we could repeat the course without any major hitches. Based on our experience with this other program, we felt that we could reasonably expect a response from about 200 candidates, of whom we would select about 50, based on their performance in the scheduled walk in interview.

We knew that, in order to achieve any kind of success, we would need publicity. We felt that a few advertisements would help us in this. However, since advertising involved large cash outlays, we needed approval from the top management of our division. We therefore sent them a memo justifying our plan along with a statement of the projected revenue and cost figures. An already existing advertisement was also updated and sent as a prototype. After many rounds of discussions and memos, we got

the needed approvals. The first program, finally launched in January 1995, was, to put it mildly, a disaster! - we enrolled 11 students out of the projected 50. By our calculations, this meant we were making a small loss on a cash flow basis and a much larger loss if we accounted for apportioned fixed costs.

Given our goal of making up the projected shortfall in revenue, the financial outcome of the project indicates that we should not have launched the course in the first place. I would like to argue here that the organization (by 'organization', I mean all the people involved in making the decision to conduct the program - my manager and I, and our senior managers whom we discussed the program with, and whom we approached for the required financial approvals) did not learn during the process of making the decision to start the program, because we persisted in our course of action even in the face of negative feedback. For instance, even a week after the advertisement was released, we had received only about 20-30 calls from people wanting to know more about the program. Moreover, these people did not have the required pre-qualifications - we were looking for graduates in engineering or science, while the queries we got were from people with arts or commerce backgrounds.

It could be argued here that this is not really evidence of no learning. The amount and type of feedback received was insufficient and ambiguous enough to make us persist with our course of action. Moreover, as we were receiving innumerable signals from the environment, we had no way of judging which sources of feedback were reliable. There was also no way of judging how important the feedback received from each source was. In this particular case, for example, we had no way of deciding whether

20-30 calls were low. It was possible to rationalize the number of calls received as really being irrelevant as a source of feedback or as evidence of a good or bad response; the advertisement itself was very clear and specific, it gave all relevant details, and also specified dates and times for walk in interviews. There was really no need for possible candidates to call us. In fact, the people who did call might just represent exceptional cases - they knew they did not have the required pre-qualifications, but were just calling to check if there was a chance that we would relax our criteria. Carrying the argument further, we could even say that persistence is necessary in case like this to gather information and gain experience. Only a post event outcome analysis would be useful in deciding a) which were the important and reliable sources of feedback and b) how the feedback should be interpreted. In other words, we had no choice but to act as we did.

### **Problem Statement**

However, this reasoning ignores the fact that most organizational situations are ambiguous, some more so than others. When an organization decides to follow a new course of action, for example, when developing a new product or an innovation the ambiguity inherent in the situation is typically high. People involved in managing the process often get feedback which is subject to various interpretations. This feedback may be from new sources, the reliability (will this source give us feedback every time we take a particular course of action?) and importance of which are not known in advance, or the feedback itself may be of a new kind - i.e., a new response, which has not been encountered before by any of the actors involved. Even if the feedback

received is similar to that received in other situations, the actors involved cannot be sure if it can be interpreted in a similar manner as was done previously, due to the ambiguity of the situation. The amount of feedback received also varies, depending on the actors involved and the sources of feedback they rely on.

What is interesting is that it is only in some cases that the 'right' signals are *persistently* picked up, 'correctly' interpreted and acted upon, leading to successful outcomes (the achievement of certain pre set goals and targets). This is evidenced by the fact that some organizations seem to be better at managing 'new course of action' situations (e.g., developing innovations/new products) than others. In a lot of other cases, however, feedback is 'incorrectly' interpreted, leading to 'foolish' or inappropriate organizational responses, which in turn leads to failure. It would therefore seem reasonable to infer that developing the 'right' organizational response to feedback is not merely a matter of chance but is influenced by certain factors which when present/absent across unfamiliar situations increase or decrease the probability of successful outcomes. The central problem thus becomes one of identifying these factors. In other words,

*What are the factors which influence the type and magnitude of organizational responses to feedback ?*

### **Research question**

The literature on learning has dealt with feedback and organizational responses to feedback in detail. Most behavioral models of learning incorporate a stimulus - response loop (Hedberg, 1981), where response is based on the feedback received. A

review of the literature shows that learning has been defined in different ways, with variations in the components identified as forming the stimulus-response loop. Learning has been viewed as being routine based, history dependent and target oriented (Levitt and March, 1988), experiential (Argote and Epple, 1990 & Levinthal and March, 1993), as a process of interacting, observing and understanding (Hedberg, 1981), as the development of insights, knowledge, associations between past actions, their effectiveness and future actions (Fiol and Lyles), or as a process involving scanning (data collection), interpretation (data given meaning), and learning (action taken).

Figure 1 summarizes the various definitions of learning:

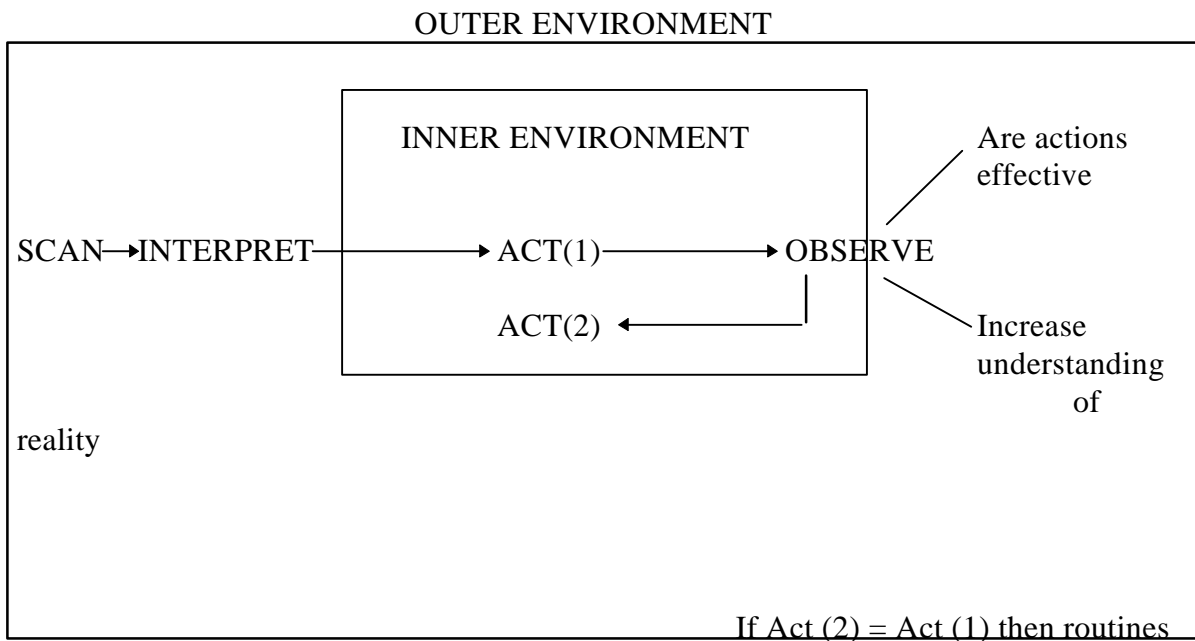


Figure 1

This figure captures the essence of the various definitions i.e., the process of learning occurs when an organization acts, observes the outcomes (or gathers feedback) and

modifies its future actions/ behavior / potential behavior / knowledge structure based on its observations (feedback). If the decision makers involved in the process are satisfied with the outcome, the feedback is perceived as being positive and the organization learns if it continues with its course of action; its knowledge structure is modified in this case. If the decision makers are not satisfied with the outcome, they perceive the feedback as being negative. In this case, the organization learns if it modifies its course of action. Both its future actions and knowledge structure are modified. Moreover, learning / no learning would be especially visible in a new course of action situation, where there are no set rules or routines to fall back on and the decision makers have no prior experience to guide them in evaluating the importance and reliability of the different sources of feedback.

Diagrammatically,

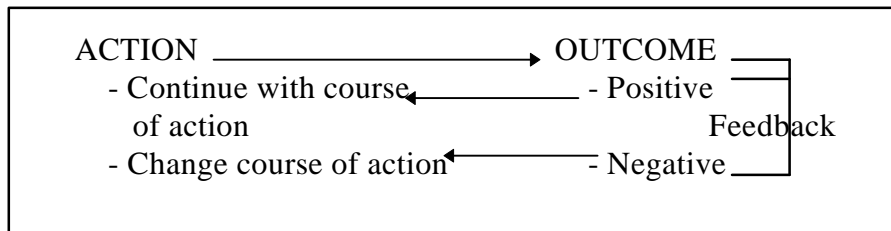


Figure 2

For the purposes of this paper, organizational learning will be defined as ***a process which occurs when an entity modifies its behavior, its range of potential behaviors or its knowledge structure based on the feedback it receives from taking a particular action.***

However, none of the definitions given above explicitly define the conditions which need to be present for learning to occur i.e., they do not specify a) the factors

influencing organizational responses to feedback (e.g., what makes an organization decide to take ACT(2) (in figure 1), for instance, instead of, say, alternative action (3))

b) the nature of the influence of these factors (positive / negative) on the eventual outcomes and therefore c) the factors which need to be present (or absent) for the organization to pick up the 'right' signals and 'correctly' interpret and respond to them.

In this regard, Dutton and Jackson (1987), while not dealing with learning per se, propose a useful general conceptual model integrating an interpretive view of organizational decision making with cognitive categorization theory to explain how the meanings attached to strategic issues by decision makers are translated into organizational responses. In their model, decision makers are subject to ill defined events and trends. Some of these are selectively attended to and infused with meaning. This is then followed by suitable organization action. Categorization theory is used to explain the process of infusion with meaning. Labeling an issue a 'threat' or an 'opportunity' affects the type and magnitude of organizational response.

'Threat' and 'opportunity' labels can be differentiated among three attribute dimensions - positive/negative, gain/loss, controllable/uncontrollable. The 'threat' category implies a negative situation in which loss is likely and over which one has little control. The 'opportunity' category implies a positive situation in which gain is likely and over which one has a fair amount of control. The control related attributes of 'threat' and 'opportunity' labels imply that when decision makers are faced with 'threat' situations, the type of organizational response will be one directed towards an

internal target, as internally directed responses are associated with greater control for decision makers and are thus easier to implement. In contrast, when decision makers are faced with ‘opportunity’ situations in which they have a fair amount of control, the type of organizational response will be more likely one that is externally directed, since the opportunity label implies a belief in one’s ability to effect change in the environment.

The magnitude of organizational response captures the extent to which actions are radical, or require major reorientations. The response magnitude may be large or small. Dutton and Jackson use prospect theory to predict the magnitude of organizational response to situations labeled ‘threats’ and ‘opportunities’. Prospect theory says that individuals’ decisions about how to respond in a given situation differ greatly as a function of how the decision question is framed. When the decision is framed as avoiding loss, larger amounts of money are likely to be risked when compared to the same decision question that is framed to focus on the potential for gain. The loss/gain attribute dimension of threats/opportunity situations imply that responses to issues labeled as ‘threats’ should be comparable to responses to problems framed as potential loss situations. Responses to issues labeled as opportunities should be comparable to responses to problems framed as potential gain situations. Decision makers will take greater risks in response to threats i.e., organizational actions of large magnitude will be taken in response to threat situations, and conversely, organizational actions of small magnitude will be taken in response to opportunity situations. Figure 3 summarizes their argument :

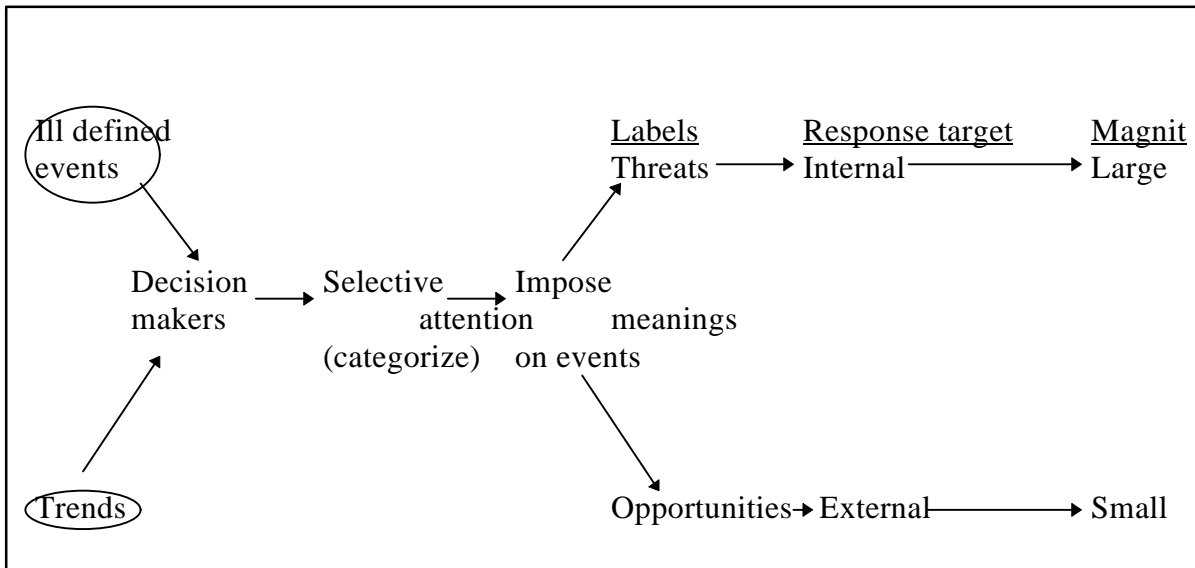


Figure3

The research question posed in this paper extends this model from the categorization of issues to the categorization of feedback. Specifically, I build on Dutton and Jackson's idea that the type and magnitude of organizational responses to issues facing decision makers depends on the categorization of these issues into threats and opportunities. In a similar manner, feedback (*defined as the data obtained from observing the outcomes of an earlier action taken in response to an issue*) received in response to an action can be conceived of as becoming, in its turn, a new issue facing a decision maker which is then categorized and responded to. In other words, one of the factors influencing organizational responses to feedback is the categorization of feedback into threats and opportunities. The research question seeks to explore the nature of the influence of this factor i.e.,

***What is the influence of the categorization of feedback into threats and opportunities by decision makers on the type and magnitude of organizational response to feedback?***

## **Proposition**

Combining the two streams of research on organizational learning and categorization theory as applied by Dutton and Jackson leads to the proposition that the type and magnitude of organizational response to issues depends not just on whether the feedback received is positive or negative (as proposed by organizational learning theorists), but also on the categorization of feedback into threats and opportunities. In other words,

*The interaction of the perception of feedback as being positive or negative with its categorization into threats and opportunities by the decision makers involved in a new course of action situation determines the nature of organizational responses to outcomes (fig.4)*

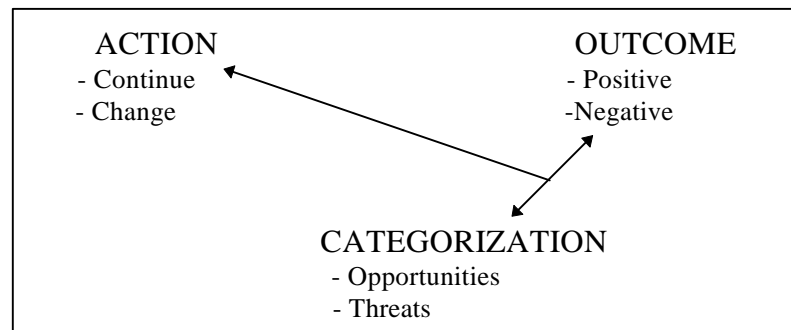


Figure 4

The alternative proposition would be based on the literature on learning as discussed earlier :

*The perception of feedback as being positive or negative determines the nature of organizational responses to outcomes.(fig.2)*

## **Hypotheses**

Feedback will be perceived as being positive if the participants are satisfied with the outcome. Feedback will be perceived as being negative if the participants are dissatisfied with the outcomes.

The three attribute dimensions identified by Dutton and Jackson as differentiating opportunities and threats - positive/ negative, gain/loss and controllable/uncontrollable - are not assumed orthogonal. The attributes are correlated, but not perfectly. Dutton and Jackson hypothesize that three attributes with high cue validity for issues categorized as threats are “negative”, “loss” and “uncontrollable” and the three attributes with high cue validity for issues categorized as opportunities are “positive”, “gain” and “controllable”. Feedback, which can be positive or negative, is distinct from issues categorized as ‘threats’ or ‘opportunities’. The interaction of the perception of feedback as being positive / negative with its categorization into opportunities and threats by decision makers can thus be represented in the form of a 2\*2 matrix :

	<b><i>Opportunities</i></b> Associated terms : “ <i>Positive</i> ”, “ <i>gain</i> ”, “ <i>controllable</i> ”	<b><i>Threats</i></b> Associated terms : “ <i>Negative</i> ”, “ <i>loss</i> ”, “ <i>uncontrollable</i> ”
<b><i>Positive feedback</i></b> ( <i>Participants satisfied with outcomes</i> )	No changes in the current course of action	Changes in current course of action; response internally directed
<b><i>Negative feedback</i></b> ( <i>Participants dissatisfied with outcomes</i> )	Small changes in current course of action; response externally directed	Large changes in current course of action; response internally directed

This matrix extends the logic behind Dutton and Jackson's original model by combining it with insights from organizational learning. The logic behind Dutton and Jackson's model explaining the type and magnitude of organizational responses to issues labeled threats and opportunities is similar to that applied in research about how individuals respond to threat. 'Research on psychological reactions to life threatening illnesses reveals the tenacity with which people seek to maintain feelings of personal control or mastery in the face of crisis. When the external environment seems uncontrollable, adaptation may be the best response. Adaptation requires changing oneself, for example, by changing one's internal processes.' Similarly, as explained earlier, when decision makers are faced with issues categorized as threats, the external environment seems uncontrollable. Internal adaptation seems the best response. Organizational actions in response to such issues are of large magnitude and internally directed. On the other hand, when decision makers are faced with issues categorized as opportunities, organizational actions are of small magnitude and externally directed. Now, if instead of considering the categorization of issues into threats and opportunities, we consider the categorization of positive or negative feedback into threats and opportunities, we have the four situations represented in the matrix. In case 1, positive feedback is categorized as an opportunity. Dutton and Jackson's model, as explained above, would predict that the decision makers will perceive the situation as being controllable and having the possibility of gain. The organizational response would therefore be of small magnitude and externally directed. Organizational learning theory would predict that organizational learning will occur if the entity

continues with its course of action. Therefore, on combining the two we would expect that there will be little or no changes in the organization's current course of action. In case 2, positive feedback is categorized as being a 'threat'. While seeming implausible, this type of situation might occur in cases where the decision makers believe, for instance, that continuing with the current course of action might lead to reduced personal benefits and are therefore looking for reasons to change the organization's current course of action. In this case, organizational learning theories would predict that the organization learns if it continues with its current course of action. Dutton and Jackson's model would predict that the organizational response will be of large magnitude and internally directed. An organizational response of 'large magnitude' contradicts an expectation of 'continue with current course of action'. An interaction of the two theories would therefore lead us to expect some change in the organization's current course of action. Moreover, this response will be internally directed.

In case 3, negative feedback is categorized as being an opportunity. In this case, organizational learning theories would predict that the organization learns if it changes its course of action. Dutton and Jackson's model would predict that the organization's responses will be of small magnitude and externally directed. A combination of the two theories would lead us to expect small, externally directed changes in the organization's current course of action.

In case 4, negative feedback is categorized as being a threat. While organizational learning theories would predict that the organization learns if it changes its course of

action, Dutton and Jackson's model would predict that the organization's responses will internally directed and of large magnitude. A combination of the two theories would lead us to expect large, internally directed changes in the organization's current course of action.

Of the four cases considered, we would expect to see no changes in the organization's course of action in only one case (positive feedback, opportunities). The other three cases involve some amount of change from the organization's current course of action.

Based on this analysis, the following hypotheses can be formulated :

***H1 : When an action is followed by an outcome with which the decision makers are satisfied, and the resulting outcome is labeled as being "positive", "gain" or "controllable", there will be no observable changes in the organization's current course of action.***

***H2 : When an action is followed by an outcome with which the decision makers are satisfied, and the resulting outcome is labeled as being "negative", "loss" or "uncontrollable", there will be a change in the organization's current course of action.***

***H3 : When an action is followed by an outcome with which the decision makers are not satisfied, and the resulting outcome is labeled as being "positive", "gain" or "controllable", there will be a change in the organization's current course of action.***

***H4 : When an action is followed by an outcome with which the decision makers are not satisfied, and the resulting outcome is labeled as being "negative", "loss" or***

*“uncontrollable”, there will be a change in the organization’s current course of action.*

**Research design :**

**Unit and level of analysis :** The unit of analysis is an organizational decision unit. The level of analysis is the decision making team involved in a new course of action situation.

**Design for variance theory :** This will be studied by a longitudinal design, since it involves the study of actors in a decision making situation, which will unfold over time. The dependent variable (change / no change in the organization’s course of action) and the independent variables (satisfaction / dissatisfaction with outcomes (used as a proxy for positive or negative feedback and labeling of an outcome as a threat or an opportunity) will be measured at intervals (after every outcome).

Outcomes will be identified as arising in response to an issue. This will be a quasi experiment.

**Data collection :** The data will be collected by observing decision making teams involved in a new course of action situation e.g., in an R&D project. To maximize variations across samples, teams from different organizations, working on projects of different technological complexity will be observed.

**Sampling strategy :** Case replication

**Measurement issues :** The dependent variable (change / no change in the organization’s course of action) can be measured by following the procedure used in the MIRP. Events can be coded in terms of the people, ideas and transactions

involved. The dependent variable - change / no change in an organization's course of action - will be observed as a indicator variable, coded as follows :

D.V =  
to  
-1, if no change in course of action in response to feedback as compared  
previous action  
1, if change in course of action in response to feedback from previous  
action

A change in the organization's current course of action will be evidenced by a change in the sequence of actions required to reach a particular state, so that the organization now deliberately plans to reach a new state . Changes in people, ideas or transactions will not always be associated with a change in the course of action, and so will not always be coded as events, unlike in the MIRP.

The independent variables, satisfaction/ dissatisfaction with outcome and labeling of an issue as a 'threat/opportunity' can be measured by interviewing decision makers at regular intervals throughout the time period of observation. A standard survey instrument might not be feasible, since it would involve administering the instrument after every observed change in the organization's current course of action.

**Threats to validity :** There is a possible danger of confounding the two independent variables here. The term "positive" is associated both with the category 'opportunity' and with positive feedback. To avoid this, I have tried to focus the positive/ negative aspects of feedback on the satisfaction of the participants with the outcomes, and used the category 'opportunity' to represent a broader space including concepts of controllability and gains in addition to positivity.

Secondly, to ensure external validity, samples chosen from across companies, involved in as many different projects as possible, would possibly be more representative of the population of decision making teams involved in “new course of action” situations.

**Research implementation and problem solving :**

If the research results reveal that the categorization of feedback into threats and opportunities interacts with the type and magnitude of organizational response to feedback, then this implies that organizations can actively manipulate the meanings attached to feedback, and thus the responses made on receiving them. In a new course of action situation, for instance, Van de Ven and Polley ( 1992) found that there is an initial period of no learning followed by learning. This initial period may perhaps be shortened for future projects by actively manipulating the categorization of feedback.

**Schedule for conducting the research :** Obtaining access to companies would take about 10-12 months. The observations would be carried out over the next 1 year, followed by coding and data analysis for 2 months.

The research will be funded by a research grant application to the Strategic Management Research Center. The findings will be used within the organizations providing access.

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