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ABSTRACT

A major tenet in the organization behavior literature is that feedback seeking should be encouraged because feedback stimulates organizational learning and improved productivity. Yet individuals often do not seek feedback. Because feedback can be evaluatively negative, people avoid face-to-face seeking to reduce the risk of damaging one's self-concept and ego.

Information technology can conceivably mitigate some of these risks in seeking. Because computer-mediated feedback mechanisms such as electronic mail and computer-generated feedback mechanisms in performance monitoring systems reduces the personal delivery of evaluative feedback, these mechanisms should induce a greater desire for, and promote a higher frequency of, feedback seeking.

A laboratory experiment was designed to examine the effects of face-to-face, computer-mediated, and computer-generated feedback channels on feedback seeking behavior. Individuals in the computer-mediated or computer-generated conditions sought more feedback than those in the face-to-face condition. Task performance, however, was not significantly related to the amount of feedback requested. We discuss the differences in feedback seeking in terms of changes in social contextual cues mitigated by information technology during feedback seeking sessions.

1. INTRODUCTION

Feedback is often critical for effective organizational learning and improved productivity (Locke et al. 1981; Locke and Latham 1990). Employees who receive feedback perform better because feedback (1) identifies problems in past performance, (2) provides a means for rectifying problems, and (3) reinforces organizational goals. Feedback also helps employees improve their interpersonal competence by providing valid information about one's social impact on others (Argyris 1971).

From the feedback giver's perspective, face-to-face (FTF) exchanges are often considered socially appropriate means of communicating highly sensitive and confidential information such as performance feedback appraisals (Daft and Lengel 1986). However, in the eyes of the seeker, FTF meetings have a serious drawback: because feedback is often evaluatively negative, individuals risk loss of face and status in FTF encounters with their superiors. Consequently, subordinates refrain from seeking feedback to avoid the risks inflicting the self-ego (Ashford and Northcraft forthcoming). Feedback conditions must be created to minimize seeking defensiveness. The versatility of IT enables organizations to vary the feedback source or the feedback delivery mode or both. Figure 1 shows three feedback environments: face-to-face (FTF), computer-mediated (CMF), and computer-generated (CGF). As depicted in Figure 2, these environments may be differentiated along two underlying dimensions: source and delivery mode.

In a CMF environment, such as the use of an electronic mail facility, IT acts as a buffer between the feedback seeker and the feedback giver. Individuals may seek feedback more frequently in the CMF environment because the environment reduces social cues (Sproull and Kiesler 1986; Rice 1990) and thereby attenuates the tendency of a seeker to avoid feedback especially when negative feedback can damage one's self-concept.

In a CGF environment, as in the use of a computer performance monitoring device (Irving, Higgins, and Safayeni 1986; Grant 1989), feedback originates not from a person but from the computer itself. CGF is made possible in two ways. First, when feedback can be expressed in a series of mathematical or boolean functions of performance outcomes, feedback algorithms may be developed and embedded into the logic of the performance monitoring software. Second, a database or a knowledge base containing past performance outcomes, decision rules and judgments can be created and accessed for appropriate
In CGF environments, feedback seekers will experience a change not only in the feedback delivery mode – from face-to-face to computer-supported – but also in the source of feedback – from a person to information technology. Because employees need not be concerned with loss of face and defensive impression management (Ashford and Northcraft forthcoming), we would expect CGF environments to induce a greater desire for, and promote a higher frequency of, feedback requests.

In the next section, we review the literature concerning the problems of seeking face-to-face feedback. Then, working with IT designed to facilitate feedback communication, we explore the effects of technology as delivery mechanisms and feedback sources on feedback seeking behavior.

2. LITERATURE REVIEW

In their paradigmatic shift paper on feedback research, Ashford and Cummings (1983) contend that past feedback literature may have been constrained by viewing individuals as passive recipients. As feedback can be a valuable individual resource for improving performance, they suggest that people will proactively seek out feedback. In other words, the informational value of feedback will motivate individuals to seek feedback, not merely anticipate feedback. However, the social risks associated with seeking may deter an individual from seeking feedback too frequently (Ashford and Cummings 1983). In an organizational setting, feedback inquiry is often interpersonal in nature: the seeker conveys information about his or her verbal, non-verbal, and political skills to the giver during the feedback seeking process. These cues can affect the evaluator’s perception of the seeker. For example, Williams (1975) and Ekman et al. (1980) found that speech, face, body and other nonverbal behavior of people in two-way interactions affects the judgments of their communicating partners. Also, feedback requested by a seeker may have a powerful impact on the person giving the feedback (Eden 1988). For example, Larson and Skolnick (1982) found that when a poorly performing subordinate requests feedback, negative feedback may create or reinforce an unfavorable image of the subordinate in the boss’s mind.

Face-to-face feedback is also often sought in the presence of peers or co-workers within an organizational setting. Because seeking anonymity is usually not a feasible option in organizations, the need for self-presentation in social interaction may discourage feedback seeking (Northcraft and Earley 1989). Costs of public inquiry are high because the inquiry can be interpreted by observers as a sign of insecurity (Schoeneman 1981). To the extent that individuals recognize this risk, they will avoid public inquiry. In Northcraft and Ashford (1990), subjects reduced feedback inquiry when peers were able to observe their seeking requests.
2.1 Retaining Feedback Seeker's Anonymity

IT can provide the seeker with anonymity in feedback inquiry behavior (Connolly, Jessup, and Valacich 1990). Northcraft and Earley (1989) and Earley (1988) demonstrated that CGF offered "absolute privacy" to the feedback seeker and, in turn, ensured that the seeker does not risk damaging his or her image with the feedback giver.

In the CMF environment, IT serves to communicate or deliver feedback. Similar to FTF encounters, feedback still originates from a person, but delivery of feedback is no longer face-to-face. Rather, the seeker interacts with a person for feedback via IT. The CMF environment does not preserve the anonymity of the seeker. However, it minimizes the social contextual cues inherent in FTF feedback encounters.

2.2 Minimizing Social Contextual Cues

Individuals are thought to avoid feedback inquiry when damage to their public-image overrides the diagnostic benefits of the feedback. In FTF encounters, major sources of "damaging information" are the social contextual cues perceived and exchanged during the interaction (Sproull and Kiesler 1986). In general, people size up each other by assimilating static and dynamic social cues present in a face-to-face interaction. Static social cues emanate from people's appearance and artifacts such as a clock, a private office, a big desk, and a personal secretary. Dynamic social cues emanate from a person's nonverbal behavior which changes over the course of an interaction – for instance, nodding with approval or frowning with displeasure.

CMF reduces these social contextual cues; dynamic social cues are eliminated and static social cues kept minimal (Kiesler, Siegel, and McGuire 1984; Sproull and Kiesler 1986) since CMF does not convey the kinetic gestures and facial expressions which are present in FTF encounters (Rice and Williams 1984). In other words, CMF conceals the individuating details about the feedback seekers which might be embodied in their dress, location, demeanor or expressiveness (Ekman et al. 1980).

3. RESEARCH MODEL, QUESTIONS AND HYPOTHESES

Figure 3 presents the research model to be tested in the study. It describes the relationship of feedback characteristics (feedback source and delivery) affecting risk in seeking feedback and assertive impression management and, in turn, feedback seeking frequency and performance.

Our interest in this study is to determine to what extent information technology can overcome the social cost of seeking face-to-face feedback. For this study, the first research question, therefore, is:

RQ1: What is the relationship between number of feedback requests and the feedback environment by which feedback is delivered?

Four hypotheses have been formulated to address this question. Since a CGF environment offers users both anonymity and the elimination of social contextual cues, we make the following prediction:

H1a The number of feedback requests in the CGF environment will be higher than those of the CMF and FTF environments.

In the CMF environment, feedback delivered through the computer may not ensure anonymity of the seeker, but it reduces the social contextual cues which would otherwise be manifested in the FTF environment. Thus, we hypothesize that feedback seekers will be more motivated to seek performance feedback in a CMF environment than in the FTF environment since the risks of damaging their public images with the feedback giver are attenuated in the CMF environment. Thus, we predict that

H1b The number of feedback requests in the CMF environment will be higher than the number of feedback requests in the FTF feedback environment.

H1a and H1b assume an instrumental motive underlying feedback seeking whereby an individual seeks feedback primarily for its informational or diagnostic content. Recently, Wolfe-Morrison and Bies (1991) extended the Ashford and Cummings analysis to include political motives for requesting feedback.

Wolfe-Morrison and Bies contend that since feedback is evaluative in nature, individuals may actively seek more feedback to improve their image with the feedback giver, and, in the process, elicit more favorable feedback. Improving one's image with the feedback giver, in turn, can
bring about instrumental rewards. For instance, Bau-
meister (1982) and Tedeschi and Norman (1985) show that 
when an external audience has control over valued out-
comes and thinks favorably of an actor, the actor is more 
likely to obtain rewards from the audience. Similarly, 
minimizing one's association with negative events can 
lessen the likelihood of blame and punishment (Baumeister 
1982).

In general, the content and nature of feedback given by the 
feedback giver may affect the giver's image of the seeker. 
For example, Larson and Skolnick (1982) found negative 
feedback to create or reinforce an unfavorable image of 
the subordinate in the boss's mind. Since the nature of 
feedback given to the seeker can affect the impression the 
giver has of the seeker, the seeker may consider carefully 
the type of feedback he or she ought to seek.

Drawing from the performance appraisal and feedback 
literature, Northcraft and Ashford (1990) identified two 
major types of feedback: absolute performance outcome 
feedback and social comparative feedback. Absolute 
performance outcome feedback provides direct information 
about individuals and their absolute performance. The 
number of correct solutions to a task is an example of 
absolute performance outcome feedback. Social compara-
tive feedback, on the other hand, provides information 
about individuals and their performance relative to others. 
An example of a social comparative feedback is the per-
centage of peers who perform better on a problem than 
the individual seeking feedback (Jones and Gerard 1967).

Sansone (1986) showed that in situations where absolute 
performance level is not indicative of competence, social 
comparative data is more informative about ability than 
absolute scores. For example, in the selection of students 
for graduate schools, raw scores from standardized 
achievement tests (e.g., GRE scores, LSAT scores) must 
be transformed via national norms before they are infor-
mative about a person's intellectual ability.

Social comparative feedback is also necessary in competi-
tive situations where individuals need norm-referenced 
information to understand where they stand relative to the 
performance of others. Given the evaluative nature of 
social comparative feedback and the competitiveness of the 
environment, we would expect individuals who hold positive 
performance expectations to use more of social comparative 
feedback than performance outcome feedback as an 
assertive impression management resource. IT designers 
often ignore the political motives of users (Markus 1983, 
1984; Robey 1986). Many systems fall prey to misuse or 
disuse because system designers seldom consider users' 
self-interests or personal goals. In designing any com-
puter-based feedback environment, we should not dismiss 
feedback seekers' motives of assertive impression manage-
ment with feedback givers as wasteful "schmoozing." 
Instead, recognizing the underlying political motives of 
feedback seekers can help us assess the downside risks and 
limitations of a computer feedback environment which 
solely assumes the instrumental motive of a feedback 
seeker.

For a politically motivated feedback seeker, a CGF 
environment may be perceived as ineffectual since it 
eliminates any interaction with the feedback giver necessary 
for assertive impression management. In the CMF 
environment, some social contextual cues still exist for the 
seekers to manifest their impression management tactics. 
For example, with an electronic mail facility, the possible 
social contextual cues observable by the feedback giver, 
though limited, are transmitted through the content of the 
message and the frequency of inquiry. We thus hypothe-
size that

**H1c** The ratio of social comparative feedback to total 
number of feedback sought will be lower in the CGF 
environment than in the CMF and the FTF environ-
ments;

**H1d** The ratio of social comparative feedback to total 
number of feedback sought will be lower in the CMF 
environment than in the FTF feedback environment.

Issues about the impact of IT intervention on performance 
changes are important because they give us insight into the 
value of technological innovation. Our second research 
question, therefore, is:

**RQ2:** Does more feedback seeking lead to higher 
performance?

Past research on feedback seeking behavior predominantly 
uses frequency of feedback inquiry as the dependent 
variable of interest (Ashford 1986; Northcraft and Ashford 
1990). The assumption underlying this practice is that the 
more frequent the feedback inquiry, the better the per-
formance outcome. This is based on cybernetics and 
control theory, where feedback has been shown to improve 
future performance by providing diagnostic information 
about present performance (see Annett 1969; Bourne 1966; 
Larson 1984). One hypothesis that will address RQ2 is:

**H2** Feedback seeking is positively associated with higher 
task performance.

4. **METHOD**

To test the hypotheses, a laboratory experiment was 
chosen. This method offered strong internal validity for 
manipulating the independent variables of interest, specifi-
cally, feedback source and feedback delivery mechanisms.

4.1 **Subjects**

Seventy-two students from the undergraduate management 
program at a mid-western university (thirty-nine males,
thirty-three females) participated as subjects. They were recruited from an undergraduate course in organizational behavior and volunteered to participate in partial fulfillment of a course requirement. The mean age of the subjects was 24 years and their mean previous work experience (including part-time work experience) was four years.

4.2 Procedure

To schedule the experimental sessions, the experimenter randomly assigned subjects in groups of four to time slots and provided instructions to the subjects on how to get to the research site. The site consists of office rooms and partitioned cubicles used by part-time university administrative staff. We carefully chose time slots so that the site would be vacant, free from any administrative work activity during the experimental sessions.

Cover story. On the day of the experiment, subjects were ushered into a conference room on the research site. They were told that the experiment was sponsored by a large multinational company downtown. The company, which employed many management graduates each year, had developed an innovative personnel screening tool described as an "in-basket" exercise. Subjects were then told that as part of the company's commitment to management education, the company had made this unique recruitment tool available to juniors and seniors currently enrolled at the school of management. Subjects were encouraged to treat the experimental session as a "mock-up" personnel recruitment drive with the multinational company in order to gain maximum benefit from the exercise. To increase the salience of a personnel recruitment session, subjects were asked to fill out a pre-printed form which requests their personal particulars, their education background and work experience.

To increase critical realism (Fromkin and Streufert 1976) of a personnel recruitment session, a videotape of a confederate representing the vice-president of human resource management of the company was shown to subjects. In the tape, the "vice-president" described the personnel recruitment policy of the company and specific instructions on how to carry out the exercise. In addition, another confederate representing the regional personnel recruiter of the company was present to provide feedback to subjects and to assess their performance on the exercise.

Experimental Task. The task consisted of an "in-basket" exercise originally developed by Sandelands and Calder (1987). An "in-basket" contained a pencil, a two-page scenario of an XYZ Corporation, feedback request forms, and a series of eleven memoranda (the first of which was designated as a practice memo). In the exercise, subjects were presented with a scenario describing the situation facing a particular manager in a fictitious organization. Subjects assumed the role of the manager who has to respond to a series of office memoranda. The memoranda represent a variety of everyday problems found in a typical manager's in-basket. Examples of everyday problems include (1) whether or not to grant a valuable employee personal time off, (2) whether to order new office furniture in budget-cutting times, or (3) whether to fire a problem employee. The content of some of the memoranda are related; issues raised in earlier memoranda were the subject in many of the subsequent memoranda so feedback on earlier memoranda may have cumulative benefit.

A multiple choice question with four possible answers to the memo was printed at the bottom of each memo. Subjects were asked to respond to each memo by choosing the most appropriate answer to the multiple choice question. After choosing an answer, subjects may move on to the next memo, or request feedback on the current memo. There was no limit on the number of times subjects sought feedback, only that they may seek feedback on any one memo once.

If subjects decided to seek feedback, they would fill out a feedback request form choosing the feedback items they preferred. For each feedback request, a subject was entitled to a maximum of five out of eight feedback items. Of the eight feedback items, four provided performance outcome feedback. Examples of performance outcome feedback items were: (1) the answer judged best by experienced practicing managers, and (2) chief strengths and weaknesses of subject's answer. The other four represented social comparison feedback. Examples of social comparison feedback items were: (1) the percentage of peer management students who chose the best answer and (2) the percentage of high performing, effective managers who chose subject's answer.

To get feedback, subjects would bring the feedback request form to a feedback room located adjacent to their offices. To ensure that feedback content remains constant across the feedback conditions, subjects only received feedback on the items they indicated on the request form. How subjects sought feedback in the feedback room varied depending on which experimental condition the subjects had been assigned to. In the FTF feedback condition, subjects sought feedback face-to-face from the confederate who had been trained only to provide feedback as requested on the feedback form. In both CMF and CGF feedback conditions, subjects interrogated the computer for feedback. The computer only allowed subjects to key in the type of feedback items they wish to get and print out the feedback as requested by the subjects. As such, in terms of information conveyed, subjects in all three conditions received the same amount of information.

To acquaint subjects with the in-basket exercise and the feedback seeking procedure, subjects were asked to practice on a sample memo and to fill out a feedback request form for the sample memo. For FTF sessions, the confederate impersonating the regional personnel recruiter
provided face-to-face feedback to each of the subjects on

the practice memo. For the CMF and CGF sessions, a
research assistant taught the subjects how to interact with

the computer for feedback. Each subject was allowed

hands-on interaction with the technology to ensure that

they were comfortable with the use of the electronic media.

Experimental Treatments. The feedback seeking environ-

ment varied across subjects in different sessions. In the

FTF condition, subjects interacted face-to-face with the

confederate for feedback in a room specially designed as

the "feedback room." In the CMF condition, subjects were

made to believe that the confederate, representing the

regional personnel recruiter, was providing them feedback

through an electronic mail facility set up in the "feedback

room." In reality, the electronic communication was a

mock-up. A program written in Turbo-Pascal simulated

seekers' interaction with an invisible person. Elaborate
care was taken during the pilot tests to ensure that the
timing and the content of messages received by seekers
were realistic and sensible. Finally, in the CGF condition,
subjects sought feedback from a computer database in the
"feedback room." Subjects were told that the feedback was
stored in a database provided by the multinational com-
pany. We did not mention the ultimate source of the
database, only that the company had information stored in
da database which would provide useful feedback on the
task.

After the feedback demonstration and hands-on practice
in seeking feedback, subjects were assigned to separate
private offices adjacent to the "feedback room." Placing
subjects in separate, private offices not only increases
experimental realism of an office environment, it also
ensured that a subject's decision to seek feedback was
made independent of the seeking behavior of peers
(Northcraft and Ashford 1990).

After the "in-basket" exercise, subjects completed a follow-
up questionnaire about the nature of feedback source and
type of feedback delivery mode. Responses to the ques-
tionnaire were used as manipulation checks for the
feedback conditions. Subjects were then debriefed and

thanked for their participation.

4.3 Dependent Variables

Feedback seeking was measured by the number of feedback
requests and the type of feedback items: absolute
performance outcome feedback versus social comparative
feedback sought. The number of feedback requests
indicates the number of memoranda in which a subject
sought feedback. Since there were ten memoranda in each
in-basket, the maximum number of feedback requests a
subject could seek during the experiment was ten. Feed-
back items represent the number of feedback options a
subject chose in each feedback request. A subject could
choose up to five feedback items for each feedback
request.

Task performance was measured by the number of correct
solutions to the ten memoranda. A correct solution was
defined as the answer judged best by a group of manage-
ment experts. The group of management experts were
drawn from a sample of fifty executive MBA alumni who
provided answers to the memoranda in a survey conducted
prior to this study.

5. RESULTS

5.1 Manipulation Check

To check the feedback condition manipulation, subjects were
asked

Which of the following best represents

how you sought and received feedback
during the "in-basket" exercise: from a
regional personnel recruiter in a face-to-face
encounter; from a personnel recruiter
through a computer-mediated communica-
tion link; or from a computer feedback
database.

Of the seventy-two responses, sixty-eight were classified
correctly in the FTF, CMF and CGF conditions respect-
ively. Results of a chi-square demonstrated a good fit
between experimental conditions (FTF, CMF, CGF) and
subjects' perception of feedback source and delivery mode
\[X^2 = 123.4, df = 4, p < .0001].\]

5.2 Experimental Hypotheses

Table 1 shows the means and standard deviations of
feedback requests, feedback items, absolute performance
feedback items, and social comparative feedback items
across feedback communication conditions (FTF, CMF,
CGF).

<p>| Table 1. Means, Standard Deviations of Number of Feedback Requests, Feedback Items, and Performance Across Feedback Conditions |
|---------------------|---------------------|---------------------|---------------------|</p>
<table>
<thead>
<tr>
<th></th>
<th>FTF</th>
<th>CMF</th>
<th>CGF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feedback Requests</td>
<td>2.92 (1.93)</td>
<td>4.40 (2.78)</td>
<td>7.29 (2.39)</td>
</tr>
<tr>
<td>Feedback Items</td>
<td>10.42 (6.69)</td>
<td>19.44 (12.34)</td>
<td>33.12 (10.30)</td>
</tr>
<tr>
<td>Absolute Performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome Feedback</td>
<td>7.09 (4.78)</td>
<td>12.46 (9.11)</td>
<td>19.70 (7.29)</td>
</tr>
<tr>
<td>Social Comparative Feedback</td>
<td>3.33 (3.18)</td>
<td>7.00 (5.07)</td>
<td>13.33 (8.29)</td>
</tr>
<tr>
<td>Performance</td>
<td>6.70 (4.97)</td>
<td>5.70 (2.24)</td>
<td>5.54 (4.33)</td>
</tr>
</tbody>
</table>

() - standard deviations

H1a posited that subjects would seek feedback more
frequently in CGF than in either of the CMF or FTF
feedback conditions. Table 2 shows the results of an overall one-way ANOVA on the number of feedback requests. The analysis revealed significant differences across the three feedback conditions ($F_{2,60} = 19.5, p < .001$).

<table>
<thead>
<tr>
<th>Table 2. One-Way Analysis of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable</td>
</tr>
<tr>
<td>Feedback Request</td>
</tr>
<tr>
<td>Feedback Item</td>
</tr>
</tbody>
</table>

*p < 0.01

Post-hoc multiple comparison analyses (Kirk 1982) demonstrated that number of feedback requests was significantly higher in the CGF condition than in either of the CMF (Newman-Keuls, $p < .05$) or FTF feedback environment (Newman-Keuls, $p < .05$). H1b argued that using the computer as a buffer between seeker and feedback giver promotes feedback inquiry by reducing social contextual cues and attenuates the risk of damaging a seeker's public image with the feedback giver. H1b was tested by comparing feedback requests in the CMF condition with the FTF condition. Post-hoc analyses (Newman-Keuls, $p < .05$) revealed that subjects requested significantly more feedback in the CMF condition than the FTF condition.

Since each subject could choose a maximum of five out of eight feedback items for each feedback request, H1a and H1b were also tested by comparing the number of feedback items across the three feedback communication conditions. The average number of feedback items per request in the FTF, CMF, and CGF conditions was 3.56, 4.42, and 4.54 respectively. Similar to the results on feedback requests, an overall one-way ANOVA revealed significant differences in the number of feedback items ($F_{2,60} = 25.57, p < .001$). Post-hoc analyses also revealed strong support for H1a and H1b (Newman-Keuls, $p < .05$).

The effect sizes for the one-way ANOVA tests were computed using the eta squared statistic (Bohrnstedt and Knoke 1988). The eta squared statistic measures the proportion of variance in the dependent variable which is explained by the independent variable. Based on the number of feedback requests, eta squared was 36.17% while the eta squared based on the number of feedback items requested was 42.57%. These effect sizes are relatively large and we conclude that the impact of the feedback delivery mode on either frequency of feedback requests or the number of feedback items sought is relatively large.

H1c and H1d proposed that the more "personable" the feedback environment, the more likely seekers would use social comparative information (compared to performance outcome information) to improve their images with the feedback giver. The hypotheses were not supported. In general, the percentage of social comparative feedback items to total number of feedback items sought was approximately 35% of the three experimental conditions. A 2 x 3 chi-square analysis was performed investigating the type of feedback item (social comparative versus performance outcome) and feedback condition (FTF, CMF, CGF). The obtained $X^2 = .142, df = 2$ was non-significant.

Finally, H2 which posited a positive relationship between feedback and performance, was not supported. As depicted in Figure 4, there is no association between feedback seeking and performance on the memo across ten trials.

Pearson correlations of task performance measured by the number of correct memoranda with various measures of feedback (number of feedback requests, performance outcome feedback, social comparative feedback, and total feedback items) showed correlations ranging only between -.08 and -.13. A one-way ANOVA of performance across FTF, CMF, and CGF also showed no significant differences ($F_{2,60} = .66, p > .10; M=6.7, 5.7, 5.5$).

6. DISCUSSION

The primary finding of this study is that information technology, whether used to mediate communication or generate feedback, significantly enhances feedback inquiry. Subjects were more motivated to seek feedback when IT was available and accessible. On the average, subjects in the FTF, CMF, and CGF conditions respectively requested 3, 4.5, and 7 out of a maximum of 10 feedback opportunities each. This suggests that people may not perceive computer-mediated or computer-generated feedback as aversive as face-to-face feedback. One practical implication of this finding is that if management wishes to promote feedback and information seeking for learning, clarification, or in situations in which lack of this information might be detrimental to the individual or organization, feedback mediated or generated by IT should be provided. Specifically, computer monitoring systems can be designed into jobs to provide performance feedback, for example, tracking, recording, and computing summary performance measures to employees (Griffith 1988). Computer monitoring systems, however, can act as double-edged swords. Studies have shown that if subordinates perceived these systems as "invisible supervisors" monitoring their work behavior, they may suffer psychological reactance (Brehm 1966), and resist implementation of such systems (Grant 1989; Griffith 1988; Irving, Higgins, and Safayeni 1986). Caution, thus, should be exercised and greater emphasis placed on the formation of positive attitudes towards the benefits of computer monitoring devices as sources of feedback.
In cases where feedback cannot be reduced to simple computer monitoring systems, or incorporated into feedback databases, a network of electronic mail linkages may be appropriate for inducing greater and more open feedback seeking behavior. In our investigation, we asked subjects in the experiments their rationale for and against seeking feedback. Reasons given suggested that subjects deliberated on issues relating to "face" threat when seeking feedback from the confederate. Based on the number of feedback requests, subjects were more willing to seek feedback from the confederate through the electronic mail than in face-to-face encounters. Despite the threat of "loss of face," almost all of the subjects in the face-to-face sessions sought at least once. Many cited knowledge of results as the motivation for seeking feedback. However, a majority of them felt seeking feedback was also a valuable opportunity to make contact with the confederate whom they perceived as a potential personnel recruitment manager. In the CMF condition, subjects were more willing to seek feedback from the confederate since computer-mediated feedback sessions facilitated both access to feedback and contact with the confederate at a lower risk in seeking than in the FTF condition. Thus, although computer-mediated communication may not be
as "rich" (Daft and Lengel 1984) as face-to-face communication, the computer buffer reduces evaluation apprehensive risks (Harackiewicz, Manderlink, and Sansone 1984), yet, at the same time, acts as an assertive impression management agent. The dual capabilities of a computer-mediated communication for feedback seeking suggest that subordinates may appreciate communication links such as E-mail with superiors and promote greater upward communication and feedback within organizations.

The relationship between the amount of feedback and task performance was not supported in our study. Although this finding seems counterintuitive given the substantive evidence of past research on the utility of feedback (Annett 1969), this result concurred with recent studies on feedback, and its relationship to goal setting, task strategy, and task characteristics (Campbell 1988; Earley et al. 1990). These studies showed that feedback is valuable only to the extent that its nature and content fits the task at hand. For example, Earley et al. demonstrated that although performance outcome feedback can identify the need to adjust action, often it does not provide information specific enough concerning how to adjust. This adjusting information or process feedback becomes particularly important for relatively unstructured and complex tasks, such as in-basket exercises, where the relationship between behavior and outcome is uncertain. Hence, a person may not be able to infer appropriate future actions from outcome feedback of past actions. In our investigation, we asked subjects in the debriefing questionnaire and interview how valuable they found feedback to be. A majority of the subjects perceived feedback to be useful. Particularly, absolute performance outcome feedback served as cues for the appropriateness of decision strategies to each memorandum. Further probing also revealed that subjects were not overly concerned with social comparative feedback with peers, although many requested social comparative feedback vis-a-vis management experts. Their attention was focused more towards getting the "right" answer since obtaining the correct answer portrayed the image of being a competent manager. A practical implication from this finding is that not all feedback automatically translates to positive performance effects. The nature and level of specificity of feedback must be aligned with task planning and the specific task at hand.

Despite the theoretical contributions of this study, there is a limitation that should be noted. Laboratory studies, despite the advantages that they afford in terms of experimental control, fail to model much of the complexity that is inherent in organizational settings. For example, subjects were involved in a discrete experiment rather than in a daily, on-going activity. Consequently, subjects lacked an on-going relationship with the feedback giver and they also did not have other feedback sources, such as peers, available.

Although these differences are important to keep in mind, there is no reason to expect that the lack of contextual complexity altered the relationships that were being investigated. That is, efforts were made to include all those components of organizational feedback situations that were deemed to be theoretically relevant. In particular, it was assured that subjects experience the different feedback delivery modes: FTF, CMF, and CGF.

At the same time, we feel that it is important that future research expand upon this study and try to capture other contextual variations of actual organizations. For example, future research might investigate the feedback seeking process when multiple feedback sources and multiple delivery mechanisms are available. Future research might also investigate the feedback seeking patterns when individuals work on daily, on-going tasks. The present investigation introduced three feedback conditions to assess the relative usefulness of IT as a communication medium or a feedback generating system. Different feedback conditions affected the frequency of feedback inquiry. IT, in particular, was found to be an important factor in promoting proactive feedback seeking in both computer-mediated and computer-generated environments.

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8. REFERENCES


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9. **ENDNOTES**

1. Executive MBA alumni are practicing managers or entrepreneurs who have graduated from an Executive MBA program. Only individuals with at least five years of work experience can enroll for the executive MBA program.

2. In this study, the type of feedback was not an independent variable we manipulated. Rather, subjects' choice of feedback type was used to infer their underlying motive for seeking feedback. Consequently, we refrained from disclosing to subjects the relative differences among the feedback items so that we did not cue them on choosing one type of feedback over another. In fact, we deliberately ordered the feedback items randomly in the pre-printed feedback forms so that subjects could not detect any underlying pattern or type of feedback items on the forms.